

DIVISION XII / COMMISSION 46 / PROGRAM GROUP INTERNATIONAL SCHOOLS FOR YOUNG ASTRONOMERS

CHAIR Michèle Gerbaldi
VICE-CHAIR Edward F. Guinan

REPORT ON THE INTERNATIONAL SCHOOLS FOR YOUNG ASTRONOMERS PROGRAM 1967–2006

1. Introduction

The programme *International Schools for Young Astronomers*, hereafter named ISYA, is organized by IAU Commission 46 on *Astronomy Education & Development* since 1967. We present here a brief history of the development of this programme since its creation till 2006. Much more data can be found in the *Transactions of the IAU*, either Vol. A or B, as well as in two papers published in proceedings of meetings; the references of these publications are given at the end of this report.

2. Creation of Commission 46 on The Teaching of Astronomy and of the International Schools for Young Astronomers

In 1964, at the the IAU XII General Assembly in Hamburg, Germany, a Special Meeting was organized on *The Teaching of Astronomy (Transactions of the IAU, vol. XIIB, p. 629, 1964)*. From this meeting (*Transactions of the IAU, vol. XIIB, p. 648, 1964*) two recommendations were proposed: the organization of an IAU Commission on the *Teaching of Astronomy* and the creation of an *International School for Young Astronomers* in order to re-enforce the "... international cooperation in the domain of astronomy teaching, including the training of the astronomers ...".

The aim of such a School is to give to the young astronomers an intense training in astronomy and astrophysics during three months, rather similar to the one that could be given in an university, and then they would spend one year in an institution to have both a more practical training and a more specialized theoretical training (*Transactions of the IAU, vol. XIII A, p. XCV, 1967*).

3. From the 1st ISYA in 1967 till the 18th in 1990

The first Summer School for Young Astronomers was organized at Manchester University (UK) during 6.5 weeks. With financial support of UNESCO, the IAU and the host country, four International Schools for Young Astronomers took place consecutively: Manchester (UK) in 1967, already mentioned, then Arcetri (Italy) in 1968, Hyderabad (India) in 1969, and Córdoba (Argentina) in 1970.

Starting in 1969, a new concept for the ISYA emerged: to organize the ISYA always in developing countries and institutions in order to give a concentrated expert instruction and training in special topics of modern astronomy to a number of selected young astronomers, who otherwise would not have such opportunities available to them. This organization had the advantage that the experienced astronomers can help the host institute to plan future teaching and research programs.

Unfortunately, in 1971, co-sponsoring by UNESCO stopped. In view of the importance and usefulness of the ISYA, the IAU Executive Committee decided to allocate funds which would

Table 1. ISYAs 1967–1990

No	Date	Location	Duration (weeks)	Participants
1	1967 March	U.K., Manchester	6.5	12 (12f, 8n)
2	1968 June-July	Italy, Arcetri	8.5	10 (10f, 7n)
3	1969	India, Hyderabad	8	23 (5f, 5n)
4	1970 Oct-Nov	Argentina, Córdoba	8	21 (5n)
5	1973 July-Aug	Indonesia, Lembang	4	8 (3f, 4n)
6	1974 May	Argentina, San Miguel	4	60 (21f, 7n)
7	1975 Sept	Greece, Athens/Thera	4	74 (35f, 16n)
8	1977 Nov	Brazil, Rio	4	29
9	1978 Aug	Nigeria, Nsukka	3	28
10	1979 Sept	Spain, Tenerife	2	36 (7n)
11	1980 Sept-Oct	Yugoslavia, Hvar	3	25
12	1981 Aug-Sept	Egypt, Cairo	3	28 (9n)
13	1983 May-June	Indonesia, Lembang	3	21 (5n)
14	1986 Aug	China, Beijing	3	52 (6n)
15	1986 Sept	Portugal, Espinho	3	30 (19f, 7n)
16	1989 Aug	Cuba, Havana	2	55 (23f, 6n)
17	1990 May-June	Malaysia, Kuala Lumpur and Melaka	2.5	27 (11f)
18	1990 Sept	Morocco, Marrakesh	2.5	53

allow the continuation of the organization of these Schools, albeit that the duration of the Schools had to be reduced by half compared to the previous ones.

Since 1967 the ISYA is a regular programme of the Commission 46. Table 1 gives a list of all 18 ISYAs organized till 1990. The relevant information was taken from the triennial IAU Transactions in Volume A or B (reports from Commission 46).

Table 1 provides information, when available, on the total number of participants (first figure in the last column), the number of foreigners (f) and the number of different nationalities (n). The ISYA in Argentina was on the theme of Physics of Solar Plasmas, the Sun and Interplanetary Medium and Solar Energy; it consists in fact of three parallel schools and it was also granted by the Argentinian Commission Nacional de Estudios Geoheliosfísicos.

From 1979 till 1990 the ISYA received a partial financial support from the UNESCO via the ICSU. In 1967, J. Kleczek was nominated General Secretary for the ISYA programme. He did it till 1990.

4. Objectives and organization of ISYA

An ISYA is always oriented toward developing countries, in astronomy, and is taking place there, which makes the IAU ISYA unique among all the Schools which nowadays are organized. Nevertheless, an ISYA is taking place in countries and universities with a reasonable long-term interest in astronomy to sustain further development. During an ISYA there is no donation of piece of research equipment, as example for a telescope.

An ISYA is organized through an agreement signed between the IAU and an university often associated to a project of development (new astronomy department, implementation of a telescope, ...). The main financial conditions are:

- the IAU pays for the travels of the faculty members and all the participants
- the host country pays for the stay of the faculty members and all the participants and provides the meeting facilities.

The duration of an ISYA is now of 3-week, which is needed for the participants to be used to speak and debate in English and in public; the lecturers are asked to stay as long as possible in order that the participants feel at ease to communicate.

The participants' background is that of a M.Sc. degree, but it ranges from just graduated to some PhD on-going. During an ISYA there are lectures but practical activities, computer

Table 2. List of the ISYA since 1992

No	Date	Location	Duration (weeks)	Participants
19	1992 Aug	China, Beijing and Xinglong Observatory	3	30 (17f, 12n, 9w)
20	1994 Jan	India, Pune	3	35 (25f, 13n, 11w)
21	1994 Sept	Egypt, Cairo and Kottamia Observatory	3	41 (12f, 13n, 10w)
22	1995 July	Brazil, Belo Horizonte and Serra Piedade	3	38 (19f, 11n, 15w)
23	1997 July	Iran, Zanjan	3	38 (14f, 8n, 12w)
24	1999 Aug	Romania, Bucharest	3	41 (18f, 9n, 22w)
25	2001 Jan	ChiangMai, Thailand	3	36 (17f, 9n, 6w)
26	2002 Aug	Casleo, Argentina	3	28 (14f, 9n, 10w)
27	2004 July	Al Akhawayn, Morocco	3	29 (18f, 13n, 9w)
28	2005 July-Aug	INAOE, Mexico	3	46 (20f, 10n, 18w)
29	2007 March	Kuala Lumpur, Langkawi, Malaysia	3	35

oriented, are equally important. Participant's talks is another aspect: for most of the students it is the first time that they have the opportunity to give a talk on their research, in English, in public and in front of foreign specialists.

5. From 1992 (19th ISYA) till 2007 (29th ISYA)

Table 2 gives the list of the last ten ISYA and the next one in Malaysia in 2007. It provides information on the number of foreigners (f), the number of different nationalities (n) and of the number of women (w).

The ISYAs were financially co-sponsored by UNESCO (through ICSU) till 2000. Since then the ISYAs are funded only by the IAU.

From 1992 till 1997, Don Wentzel (USA) and Michèle Gerbaldi (France) were respectively the General Secretary and the Assistant General Secretary for these Schools. Since then Michèle Gerbaldi (France) and Ed Guinan (USA) are respectively the chair and the vice-chair for this Programme Group of Commission 46.

Starting in 2007, the next team for the ISYA is : Jean-Pierre De Greve (Vrije Universiteit Brussel, Belgium) as chair and Kam-Ching Leung (USA) as vice-chair.

6. Concluding remarks

More and more "Summer Schools" are being organized by various institutions. But the ISYA are unique: they last longer (three weeks), they are not specialized toward doctoral students and they are fully funded. Even more important, they are taking place where needs have been expressed.

We do not repeat here the detailed analysis done by D. Wentzel in 1996 and in 2006 by M. Gerbaldi on the impact of the ISYA programme. We underline that an ISYA gives to the participants a broad perspective on astronomy and how science works. As a participant quoted "... we learned not only useful astrophysics, but also had the chance to interact with some of the more advanced researchers in the field..." Concerning the host institution, light is casted upon its development projects.

Today the *lonely astronomer* is also the one who is not associated to an international project. An ISYA has the perspective to insert more the young researchers in the international domain by, among other, offering them the possibility to start their network of scientific contacts but without cutting them from their roots.

It should be emphasized that no ISYA could have taken place without the enthusiasm of the faculty members who participated to it, giving so freely their time and energy to make a success of these Schools.

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Michèle Gerbaldi
chair of the Programme Group

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