



**COMMISSION 46**  
**ASTRONOMY EDUCATION AND DEVELOPMENT**  
*Education et Développement de l'Astronomie*

**Newsletter 66 – March 2007**

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**Commission 46 seeks to further the development and improvement of astronomical education at all levels throughout the world.**

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**Contributions to this newsletter are gratefully received at any time.**

**PLEASE WOULD NATIONAL LIAISONS  
DISTRIBUTE THIS NEWSLETTER  
IN THEIR COUNTRIES**

**Triennial reports from National Liaisons have been edited, collated,  
and placed on the C46 website (see below).**

**This newsletter is available at the following websites**  
<http://astronomyeducation.org>  
<http://physics.open.ac.uk/IAU46>

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International School for Young Astronomers 29, 5-24 March 2007, Malaysia

Cosmos in the Classroom 2007, 3-5 August 2007, Southern California

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**Information to be found on the IAU C46 website**

**Officers & Organizing Committee of Commission 46**

## EDITORIAL

Thanks to everyone who has made a contribution to this edition of the Newsletter. For the October 2007 issue the copy date is **Friday 19 October 2007**. If you can include photos or illustrations with any material, please do so. Feel free to approach others to submit material – anything with an astronomy education or development aspect will be considered.

Here is general guidance for the **submission of material for the Newsletter**.

### IAU C46 NEWSLETTER – GUIDANCE FOR CONTRIBUTORS

The editor is happy to accept articles on any aspect of astronomy education and development, including obituaries and other articles on people. 500-2000 words are the approximate upper and lower limits. Send contributions to me by email, at [b.w.jones@open.ac.uk](mailto:b.w.jones@open.ac.uk)

You can either send a Microsoft Word attachment (preferred) or include the text in the body of the email. Illustrations should be sent as separate, individual files, preferably as JPEGs or TIFs up to about 1 Mbyte.

Shorter contributions, up to a few hundred words, such as meeting announcements, meeting reports, and other news items, are also welcome.

I try to edit as lightly as possible, and I certainly don't care whether US English or British English is used. I also leave local turns of phrase untouched unless the meaning is obscure. Clarity, conciseness, and being interesting or informative are what I like. Only in rare cases is heavier editing necessary.

### *Important – the C46 website*

As I reported in the last Newsletter, the Open University Department of Physics & Astronomy currently hosts and maintains the C46 website, and has done so for the best part of a decade. However, I have been given notice that this cannot continue beyond 30 September 2007. At present I am negotiating with an institution to take over the website, and this could happen in the next few months.

Please note that this transfer does not affect my role as Newsletter editor. I will continue in this role until the IAU General Assembly in 2009, perhaps beyond.



The total lunar eclipse of 03 March 2007, from London, photographed by Francisco Diego

Barrie W Jones

(for contact details see Officers & Organizing Committee of Commission 46)

## MESSAGE FROM THE PRESIDENT

35 years ago, IAU Commission 46, today called Astronomy Education and Development, was set up. Throughout all these years it has had many presidents, each one making their contribution to education progress in the world. Unfortunately, recently we lost one of the most active of them, Syuzo Isobe. A pious thought in his memory.

Maybe never before has there been such a need as today for activity in schools or among the general public concerning education through astronomy to be intensified. In the last months we have received requests for support from several countries in Asia, Africa or Latin America.

The truth is that astronomical education is a subject of debate even in countries where the standards of research or space technology have reached levels undreamed of several decades ago. An illustrative example might be the contest Who Wants to Win Millions?, broadcast by TF1, where a poor competitor was trying to answer the question “What gravitates around the Earth? The Moon, the Sun, Mars or Venus?”. 56% of the public answered ... the Sun! Such misconceptions are common around the globe.

Consequently, all of us have to do their best so that the IAU Resolution of 2003 on the Value of Astronomy should yield results. At the beginning of November we launched a questionnaire to this effect. Hoping that there will be many other persons who will answer it I repeat it here (see below). We intend to present a synthesis of the answers in the next issue of this Newsletter.

Here are some of the C46 efforts registered in the last months.

- The Group for Worldwide Development of Astronomy (PGWWDA) has played a remarkable role. However, I shall not speak about this here, because below you have a report of its chairperson, John Hearnshaw: Astronomy in Thailand and in Laos.
- Jay Pasachoff, our retiring president, has continued not only to advise the Commission’s activity, but also to keep alive astronomers’ interest in eclipses (see below).
- Several astronomers have expressed their wish to participate in the commission’s activities, namely: Gordana Apostolovska (Macedonia), Francisco Diego (Mexico and UK), Charlie Barclay UK), Mary Kadooka (Hawaii). Others have obtained grant support: Paul Baki, (Kenya).
- The 29th International School for Young Astronomers (ISYA) was held in Malaysia (Kuala Lumpur and Langkawi Island) between 6 and 27 March 2007. ISYA 2007 was organized by the National Space Agency of Malaysia (ANGKASA), Ministry of Science, Technology and Innovation (MOSTI) and the International Astronomical Union (IAU).
- Many other schools or local groups need books, journals, equipments. There is even a proposal to make a eweb page with materials for the benefit of the teachers.
- Between 25 and 29 June, Universidad Nacional Autónoma de Nicaragua will organize the XI Central American Course in Astronomy and Astrophysics (In Spanish: XI Curso Centro Americano en Astronomía y Astrofísica: XI-CURCAA).
- María Luisa Aguilar has sent us an interesting agenda concerning SPACE: ciencia, tecnología, educación, divulgación.
- Areg Mickaelian invites everybody interested to participate in the special education session which will take place during JENAM, at Yerevan.
- A topical event for everybody involved in astronomy, and not only for them, is the International Year of Astronomy 2009. We invite everybody to participate in the training and to follow everything that is going on the site: <http://www.astronomy2009.org/>

We cannot end this short note concerning the activity of Commission 46 without thanking the one who does not cease to keep us active through the web page in his care: Barrie Jones.

Finally, we are looking forward to new ideas, contributions, programs, so that together we may contribute to the progress of civilization through astronomical education.

IAU Commission President

Dr Magda Stavinschi

(for contact details see Officers & Organizing Committee of Commission 46)

#### QUESTIONNAIRE

1 The present Program Groups are

International Schools for Young Astronomers (ISYA)

Teaching Astronomy for Development (TAD)

Worldwide Development of Astronomy (PGWWDA)

Collaborative Programs (CP)

National Liaison on Astronomy Education

Exchange of Astronomers

Newsletter

Public Education at the time of Solar Eclipses

Exchange of books, journals, materials, etc.

Would you like to keep all of them?

Would you like to start new ones?

Would you like to invite other colleagues to help us with some of them?

Would you like to divide astronomy education in different age groups?

2 Do you have their programs for next year?

3 Do you need financial support for 2007? What for?

4 Do you need a special link with other IAU commissions or working groups?

5 Would you like us to change our website? If yes, what would you suggest?

6 Would you like to propose an IAU Symposium on Astronomy Education?

7 Do you have other proposals for improving the activity of IAU Commission 46?

Please, answer at [magda\\_stavinschi@yahoo.fr](mailto:magda_stavinschi@yahoo.fr) (*not* to the Newsletter editor).

Magda Stavinschi

(for contact details see Officers & Organizing Committee of Commission 46)

## OBITUARY: DR SYUZO ISOBE

When we opened a Japanese newspaper on 20 January 2007, we were very shocked to find a letter of Dr Isobe's last words to his friends and colleagues, together with a short notice from his wife and daughter about his death on December 31. This article was published in three major papers simultaneously, and nobody knew about his death until that date. I called his family as soon as possible, and heard what happened. While he had been fighting the liver trouble for a long time, it changed to cancer last autumn, and he finally passed away on 31 December 2006. But it was his strong hope that no funeral in any kind of religion should be performed for him. The only wish instead was that his letter with his last words would be published in a newspaper after his death. His wife, of course in deep sorrow, managed to carry out his last wish. The letter stated "if you wish to mourn my death, then please send a letter to my wife and daughter." More than 80 letters have been sent to them so far.

Many of you know about his unusual activities in many fields of astronomy. Born in 1942 at the city of Osaka, he graduated from the University of Tokyo, and worked at the National Astronomical Observatory of Japan (formerly the Tokyo Astronomical Observatory) until 2004. Starting from his studies of the interstellar medium, his research extended to optical instrumentation, Solar System bodies, and near-Earth asteroids, for which he established the Japan Spaceguard Association. Also, he founded a new society about astronomy education in Japan. It is with deep regret that we lost him not only as an active astronomer but also as an educator of astronomy in Japan.

His wife, Mrs Nagako Miyauchi-Isobe, is still working in NAOJ, and you can send any message to her directly at her e-mail address [miyauchi@optik.mtk.nao.ac.jp](mailto:miyauchi@optik.mtk.nao.ac.jp)



Dr Syuzo Isobe

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## **FURTHER OBITUARY: DR SYUZO ISOBE**

Dr Syuzo Isobe passed away on 31 December 2006, after some years of intermittent illness. He served as President of IAU Commission 46 (Astronomy Education and Development) from 2000-2003, and served the IAU, and astronomical science and education, in many other ways. In the years leading up to 2000, the IAU dramatically restructured its work in education and development, combining them in a single commission with a series of program groups. It fell to Syuzo to make this system work. And he did. And it does.

On the occasion of Syuzo's retirement on 4 April 2004 from the National Astronomy Observatory of Japan, where he had worked throughout his career, his colleagues held a "memorial" party in his honour, and produced a Jubilee Publication in Commemoration of Dr Syuzo Isobe. It includes a bibliography of his publications that occupies over five pages of small single-spaced type. And it does not include many of his contributions to conferences, and his many popular books and articles. A selection of two dozen of his publications are reprinted in the publication.

He was educated at the University of Tokyo. His scientific publications begin with many papers on interstellar gas and dust, nebulae and young stars, and galactic structure. Then, as he became associated with Japan's plans for a national telescope, there are papers on telescopes and instruments. In the last decade, his publications are focussed on his three main interests: measurement and reduction of light pollution, detection of near-Earth objects, and astronomy education and outreach. His 270 entries in the Astrophysics Data System extend from 1968 to 2007, the most recent ones being multi-author observations of comets and asteroids from the Bisei Spaceguard Center. Upon his formal retirement from the NAO, he became President of the Japan Spaceguard Association.

He wrote a short introduction to his jubilee publication, in which he explained that, in 1980, he was asked to write a book about the Orion Nebula – something that he was an expert on. That began a phase in his career that produced, according to Syuzo, 40 books, 400 magazine articles, 200 English papers, and at least 10 public lectures a year. One of his more memorable papers in English was Proposed Structure of Education in Astronomy (Publications of the Astronomical Society of Australia, 9, 72-75 (1991), though he published the same thoughts, in preliminary form, in earlier publications). He represents public interest in astronomy by a pyramid with a series of order-of-magnitude steps with 100 people with an active interest in astronomy, and 100 million with no interest at all. He felt that it would be unreasonable to expect these numbers to be reversed but, more than anyone else in his country, he tried!

I knew Syuzo mostly for his contributions to international astronomy education, and to the preservation of dark skies. I am sure that many of his colleagues and friends could write appreciations of his life that covered completely different ground than I can, and I look forward to reading those appreciations in other publications. But I was certainly aware of his remarkable contributions to astronomy education in his own country. He had been Japan's representative to IAU Commission 46 for as long as I could remember, and he represented his country diligently and well. He was one of a group of kindred spirits, from around the world, that made my own participation in Commission 46 so enjoyable.

Another very important contribution was his editing and production of the journal Teaching Astronomy in the Asia-Pacific Region. Despite the name, this journal contains articles from and for astronomy educators around the world, and it was the only journal devoted entirely to astronomy education until the on-line Astronomy Education Review ([aer.nao.edu](http://aer.nao.edu)) came along.

Happily, Syuzo's jubilee publication included 30 pages of photographs of Syuzo, from his childhood in the late 1940's, through 2003. These photographs illustrate his many passions: baseball, observatories and telescopes, education and outreach, travel, gatherings of astronomers, colleagues

and friends and – most of all – his wife Nagako (also an astronomer), and their daughter. This photograph album is a wonderful remembrance of a fine scientist, educator, and person. He was a regular attendee at IAU General Assemblies, and at conferences on astronomy education. That's where I first came to know him – at the first IAU conference on education, in Williamstown USA. He always had at least one paper to contribute, usually more. And they were always thought out carefully, often in great detail. I had the challenging task of editing several of them!

He was outgoing, enthusiastic, generous, and kind. His passions were preserving the beauty of the night sky, defending our planet against collisions from space, and increasing interest and understanding of astronomy by students and the general public. And his passion and enthusiasm were contagious. We shall remember him well.

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## **TRIBUTE: DR SYUZO ISOBE**

I am very sorry to hear the death of my friend, Syuzo Isobe. Our contact started because of his Bulletin – known formally as Bulletin for Teaching of Astronomy in Asian-Pacific Region, established in 1990. The third Bulletin, March 1991, carried my note on a problem in teaching the planetary motion, based on my lecture at the ICPE conference in Tokyo, August 1986.



Dileep V Sathe and Syuzo Isobe

Around that time he was busy in organizing the APMOTA – the Asian-Pacific Meeting on Teaching Astronomy – in Beijing. It was a great pleasure to discuss problems in the comprehension of planetary motion, under his chairmanship, in that meeting. In the Beijing meeting we truly became friends and his daughter, Kotoha, became my niece.

Then he came to the Inter-University Centre for Astronomy and Astrophysics (India), at least twice, once in August 1993 for the Asian-Pacific Regional Meeting. Then he came again in January 1994 and that time he responded kindly to my invitation to dinner at my home – see the photograph above. We met last in the IAU meeting on New Trends in Astronomy Teaching in London, July 1996. It was a great pleasure to discuss astronomy teaching with him as usual.



In these years, contributing notes to his bulletins was a great pleasure, and the closure of that bulletin, after his retirement from the National Astronomy Observatory of Japan, was very sad. I miss him very much.

Dileep V Sathe  
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## **SPACEGUARD NEAR-EARTH OBJECTS PROJECT IN KENYA**

Towards the end of 2005 a plot was hatched at the Spaceguard Centre to install a medium sized robotic telescope in Africa to be used for asteroid astrometry. The plan was to put a robotic 16 inch Meade LX200 telescope in a dome on a site at the Ongava Game reserve in northern Namibia.

Investigations into robotic observatories showed that the idea was certainly possible to execute, but there were questions of reliability and time for development. It seemed rather foolhardy to assume that such an innovative project could be put together, hardware systems tested and software integrated in the brief time that we could afford to spend in Namibia. As a result, the plan was extensively modified to encompass two identical systems, one at the Spaceguard Centre in Wales, and the other in Namibia. However, the overall budget (£35 000) was to remain the same, so some changes were required. Consequently the aim of the project became to install an integrated, robotic near-Earth object (NEO) tracking system consisting of two telescopes, wide field CCD cameras and domes at the Spaceguard Centre in the Northern Hemisphere, and at a site in the Southern Hemisphere.

The first consideration was the size of telescope required for the job. To detect asteroids with visual magnitudes of 17 to 18 with reasonable exposure times, a combination of a 14 inch Schmidt-Cassegrain telescope (SCT) and the Starlight Xpress MX916 camera provides an economic solution. However, if this combination is to be completely robotic/remotely controlled there is a lot more to consider. The key to the whole project is the software used to drive the whole system. After a lot of research it became clear that the most suitable package is the software developed by DC-3 Dreams. The Astronomers Control Panel (ACP) software is a “hub” system, providing a central control system into which ASCOM compliant modules can be plugged to control telescopes, cameras, domes, weather sensors and so on (ASCOM is a communications system). It has to be pretty clever, so the kit that we have decided to use is as follows.

### *Hardware*

Telescope	Meade LX200 14 inch SCT
Camera	Starlight Xpress MX916
Dome	Sirius 2.3 m “Home Dome”
Weather Sensor	Boltwood Cloud Sensor

### *Software*

Hub	DC-3 Dreams ACP
Camera Control	MaxIm DL
Weather Sensor	Clarity/WeatherWatcher
Autofocus	FocusMax
Dome Control	MaxDome

By the end of 2005 we had a good, workable plan on paper, and the private funding was in place by Christmas. Early in the year we tested the principle systems using borrowed equipment and “trial” software. The telescope arrived in mid-January, along with the principal software (ACP, MaxIm DL), so it was possible to start testing the system architecture. Integrating the hardware and the software was a fairly painless process, given the complexity of the system, but there were a few “show-stopping” moments!

At the end of April the dome finally arrived. It was delivered in pieces, rather like an Airfix kit, but the pieces fitted together with surprising ease. By the end of the first week of May we had a secure and waterproof dome, ready to be filled with computers, telescopes, cameras and miles of cable!

A number of developments (and not a few problems) have managed to delay the completion of SNAP (N) (Spaceguard NEO Astrometry Project, North), but as this system is the prototype I am quite happy with the situation; we need to get all of the “bugs” ironed out here before deploying the second system abroad.



Above: the Sirius 2.3 m “Home Dome” at SNAP(N)



Right: The Meade LX200 14 inch SCT in the dome



The control centre at SNAP(N)

As time passed it became clear that Ongava (Namibia) was not a sensible option for the SNAP(S) site. However, the opportunity arose to site it at a school (St Andrews) in the highlands of Kenya (near the small town of Turi). This site has a number of very attractive “plusses”. Firstly there will be a direct educational role for the system. Also St Andrews are willing to provide the infrastructure required, which would have to be paid for elsewhere. The school has the IT expertise, and the enthusiasm (in the form of the Head of Physics, Peter Buyu, to look after the telescope, and to solve some of the inevitable problems that will arise. The site is also located only 6½ miles from the equator – one telescope capable of seeing both northern and southern skies! There are some technical issues here, but I think that we have them licked.



St Andrews school near Turi, Kenya

The only thing holding the project back is the budget. The purchase and transport of the required equipment for a system in Turi is affordable, as long as the Kenyan government is willing to waive import duties and taxes, and we are now negotiating a waiver with the Kenyan High Commission in London. We are also talking to Dr Paul Baki at the University of Nairobi who is planning to start a course in astronomy next academic year. The university wants to establish a small, robotic observatory close to Lake Victoria, and SNAP seems to be the ideal system.

As far as the actual nuts and bolts of the project are concerned there have been some interesting, and frustrating moments, but the initial set-up and testing of the telescope and camera have been very encouraging. The first remotely controlled test images were successfully taken in mid-November, but, once again the weather has prevented further progress.

I am hoping that the SNAP(N) system will be fully operational very soon, and then we can turn thoughts to the second installation. My wish is that we can use the site at Turi, and provide some direct educational benefit. Some other schools and institutions have shown interest in the SNAP concept, so will see whether the idea of a relatively cheap but very capable telescope system spreads.

Jay Tate

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## **TEACHING ASTRONOMY IN EUROPE – THE EAAE**

*The history of the EAAE (European Association for Science Education)*

In the context of the European Week for Scientific and Technological Culture, promoted by the European Union, the European Southern Observatory (ESO) organized in November 1994 at its Garching headquarters near Munich, Germany, a seminar open to high school teachers from all over Europe. Various work and reflection groups focused on the role of astronomy in secondary school teaching, and drew up a final declaration which summarises these reflections, and underlined the urgent need for a European association of teachers interested in astronomy.

As a consequence, the European Association for Astronomy Education (EAAE) was founded in 1995 in Athens in order to promote the teaching of astronomy. The members of the EAAE are teachers at all

levels and astronomers from European countries. At present more than 20 countries are involved in several projects and working groups.

The main EAAE aims are

- to promote a greater interest in, and an awareness of, the role of astronomy education
- to increase the effectiveness of European astronomy education at all levels through research and the exchange of information and experience
- to be a responsible body able to provide informed and authoritative advice and coordinate European astronomy education
- to encourage the development of resources for the teaching of astronomy.

In order to achieve these objectives the Association is acting in the following ways

- promoting cooperation between European educators through provision of an international network of information, astronomy resources and teaching materials
- promoting the training of teachers in astronomical concepts
- arranging special activities for those studying astronomy.

In order to approach the main target groups, students and pupils as well as the teachers, the EAAE has organized and participated in several European projects to promote astronomy education.

#### *EAAE activities*

Astronomy On-line (1996) was the very first European project organized by the EAAE with the support of ESO. This project was a huge success worldwide and featured online exercises in astronomy and exciting collaborative activities during which student groups from all over the world worked together via the Web. They were also granted professional help and access to state-of-the-art equipment and telescopes.

Astronomy On-Line was the first programme in the world to bring together more than 7000 students from 39 countries to explore challenging scientific questions, using modern communication tools, both for obtaining and communicating information.

Student activities like the measurement of the Earth by means of Erasthotenes' method, projects around the Solar Eclipse (1996) and the Lunar Eclipses (1996 and 1997) and coordinated observations of comet Hale-Bopp were included in the project.

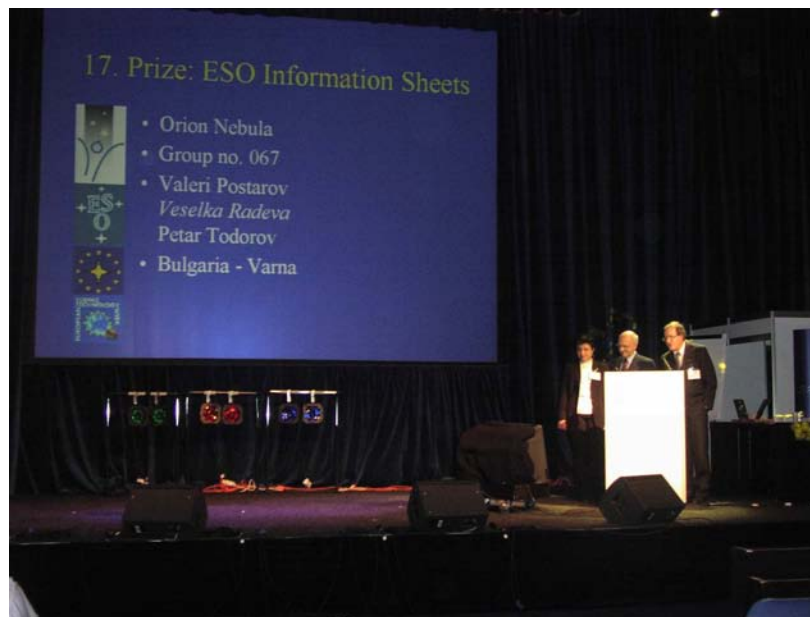
Many side benefits were registered, such as stimulating schools to go on-line or prompting international cooperation among young people.

#### *Catch a Star*

The programme Catch a Star was organized jointly by ESO and the EAAE for the first time within the European Science and Technology week 2002. This unique project revolved around a web-based competition and was centered on astronomy. It was specifically conceived to stimulate the interest of young people in various aspects of a well-known field of science, but was also of interest to the broad public.

Groups of up to four persons (e.g. three students and one teacher) had to select an astronomical object – a bright star, a distant galaxy, a beautiful comet, a planet or a moon in the Solar System, or some other celestial body. They had to find as much information as possible about “their” object. This information could be about the position and visibility in the sky, the physical and chemical characteristics, particular historical aspects, related mythology. The groups had to produce a short summarising report with images and text in English about this investigation. A jury of specialists from ESO and the EAAE

carefully evaluated all these reports, and 20 international winners were declared. The winning team was invited to visit the ESO La Silla Paranal Observatory (Chile).



Giving prizes of Catch a Star during Physics on Stage 3

The great success of the first Catch a Star has incited the organizer to repeat this project every year. The 5<sup>th</sup>. edition of Catch a Star is running (reports written in any European language are accepted and a poster contest for pupils and students is added). 3 more travel prizes are awarded: Visits to Königsleiten Observatory in Austria, to Wendelstein Observatory in Germany and to the Observatory of Calar Alto, Almeria in Spain. The winners of Catch a Star 2007 are announced on 6. April during “Science on Stage 2” in Grenoble.

### *Sea&Space*

This collaborative programme was carried out in connection with the 1998 European Week for Scientific and Technological Culture, an initiative by the European Commission. Partners were the European Space Agency (ESA), ESO, and the EAAE.

Again, the project revealed huge interest in astronomy among Europe’s high school students, who could participate in either a newspaper contest or a poster contest. The respective winners were invited to World Expo ‘98 in Lisbon!

Many astronomy related topics were treated by the student groups, for instance, astronomical measurements, historical methods, navigation with astronomical methods and with GPS, the Moon and the tides, or water detection in space with telescopes and satellites.

### *Life in the Universe*

Life in Universe was an educational programme organized by ESO, ESA and CERN in cooperation with the EAAE.

An important basic information package relating to the topic of Life in Universe was produced by some of the world’s leading scientific experts in collaboration with educators, and made available on the Web. Students from 22 countries joined the contest with scientific and artistic contributions to the subject of Life in Universe. The best student projects were rewarded with a trip to an Ariane rocket launching in Kourou, French Guyana, and a trip to ESO’s Very Large Telescope (VLT) in Chile!

### *Physics on Stage and Science on Stage*

Physics on Stage was an initiative for European physics educators. It was set up by the European Intergovernmental Research Organizations (EIROforum) and gives teachers from 27 European countries the opportunity to take part in national programmes and international festivals to exchange teaching methods and materials. In national symposia and international workshops the participants work out recommendations on how to improve the image of physics and the motivation of the students for sciences in general. After three successful Science Festivals, where teachers had the opportunity to present their pedagogical activities in a Science Fair, Physics on Stage became Science on Stage. This year the Science on Stage 2 Festival takes place in Grenoble (France). The EAAE has contributed to all these festivals by presentations and workshops about astronomy related topics.

### *Venus Transit 2004*

ESO and the EAAE have set up, together with the Institut de Mécanique Céleste et de Calcul des Ephémérides, the Observatoire de Paris, and the Astronomical Institute of the Academy of Sciences of the Czech Republic, a European project based on the unique event of the Venus transit of 8 June 2004. This project offered the possibility to students to contribute, by rather simple observations, to the measurement of the distance between the Earth and the Sun.



Participants in the final event of Venus Transit 2004

### *EAAE Summer Schools*

The summer schools takes place every year on July and involve European teachers interested in astronomy with or without special knowledge in this area. Different kinds of activities at this event will be presented by astronomers and/or professors from universities or school teachers from different European countries, with the active participation of the audience. In general, instructors at the Summer School are members of the EAAE Summer School Working Group.

The EAAE publishes the material necessary to carry out the activities in the programme. On the first day of the summer school, each participant receives a booklet with the contents of each general lecture, an explanation of each workshop with the material on paper necessary to do it (sketches, tables, graphics, drawings, etc.), information on the activity involved, and the material needed for observation sessions.

The objective of the observation sessions is to introduce the participants to the use of small telescopes and binoculars, as well as to observations made with the naked eye. Photographs are also taken. The main objects observed are: constellations, planets, galaxies, etc. which are visible.



Workshop in the EAAE Summer School

The Summer School organizers are particularly interested in promoting the exchange of information between participants. Participants are invited to contribute by presenting posters on particular astronomical activities. A session to summarize the results of different activities takes place on the last day, and there will be a final session to make comments on the course contents. At the end a general discussion will be held.

The first EAAE Summer School took place in 1997 and since then the EAAE has organized a Summer School every year in a different European country. These Schools involved secondary and primary school teachers from more than 20 European countries and local organizations in order to promote astronomy.

<b>Year</b>	<b>Local Institution</b>	<b>Place, Country</b>
1997	Technical University of Catalonia, UPC	La Seu d'Urgell, Spain
1998	Istituto Technico Statale "Paolo Baffi"	Fregene, Italy
1999	Comité de Liaison Enseignants et Astronomers	Briey, France
2000	Associação Portuguesa para o Ensino da Astronomia	Tavira, Portugal
2001	German Physical Society, DPG	Bad Honnef, Germany
2002	University of Helsinki	Enontekiö, Finland
2003	Innsbruck University	Hall in Tirol, Austria
2004	Netherlands Research School for Astronomy, NOVA	Utrecht, Netherlands
2005	Karlstads University	Skara, Sweden
2006	Instituto Astrofísico de Canarias, IAC	S. Cruz de la Palma, Spain

Each Summer School consists mainly of workshops, working groups, general lectures, and several observations, as well as poster sessions and books and didactical material exhibitions. Most of the participants are physics and mathematics teachers. A group of teachers are teaching astronomy, but this is a minority in the full group. Mainly the participants are from the science area but every year there are a few participants from humanities areas. The main interest of organizers is to teach “how to teach astronomy” with an interesting presentation in order to attract students to study astronomy and science in general.

#### *Future EAAE Activities*

In order to achieve the above mentioned aims of the EAAE, it is intended to

- continue to develop the Catch a Star programme
- start the second decade of the EAAE Summer Schools with the support of ESO
- support selected national activities related to astronomy
- set up a yearly European Astronomy Day
- contribute to the Year of Astronomy 2009
- participate in various projects related to astronomy education in Europe.

For more information see <http://www.eaae-astro.org>

Fernand Wagner (EAAE president)

Rosa M Ros (EAAE Vice-president and Summer School Chairperson)

(for contact details see Officers & Organizing Committee of Commission 46)

## **ASTRONOMY IN THAILAND AND IN LAOS**

I recently undertook an astronomical tour to Thailand and Laos, sponsored by IAU Commission 46, as part of the activities of the Program Group for the World-wide Development of Astronomy (PGWWDA).

Thailand has just joined the IAU as its latest national member. It is a strongly developing country, both economically and astronomically. The recent decision by the Thai government to establish the National Astronomical Research Institute of Thailand (NARIT) means that in the coming 5 to 10 years, Thailand can be expected to become a strong regional centre for astronomical research and education. By the end of 2008 a 2.4 m optical telescope should be installed on Doi Inthanon (2550 m), Thailand's highest mountain, near Chiang Mai in the north of the country. This will be the largest optical telescope in Asia when it is completed. In addition, Thailand hopes to train four new PhD students in astronomy at overseas universities each year for the next several years, in order to create a pool of talent to staff the new institute. The new institute in Chiang Mai is directed by Professor Boonrucksar Soonthornthum, who completed his MSc in astronomy in New Zealand in 1980 and who hosted my visit to Chiang Mai.

I visited four universities in Thailand in January 2007 and gave a series of lectures. These were the universities of Chiang Mai, Naresuan (in Phitsanulok), Khon Kaen and Mahidol (in Bangkok). All of these employ astronomers in physics departments, and research interests are in optical stellar astronomy, cosmology and solar physics. Chiang Mai has the strongest involvement in terms of numbers, with several astronomers and a small observatory (Sirindhorn Observatory) which is operated just out of the city. Mahidol University has an active research group in solar physics and cosmic rays, headed by the expatriate American, Prof David Ruffolo.

In Laos I visited the National University of Laos (NUL) in Vientiane, and had a very cordial reception by the Physics Department there. My host was Dr Khamphouth Phomassone, a geophysicist and



Assistant Dean of Science. Two astronomers with MSc degrees from Chiang Mai University in Thailand are employed to teach astronomy to physics students as part of the bachelors' program in physics at NUL.



Left to right, Boonrucksar Soonthornthum, Orrarujee (Joy) Muanwong, John Hearnshaw, and Siramas Komojinda, at Khon Kaen University



Astronomy students at Mahidol University, Bangkok. David Ruffolo and John Hearnshaw are leftmost in the rear

The university is on a pleasant and spacious campus on the north-east part of the city. At this stage no graduate program in physics or astronomy exists, though one is planned in the next few years. The university would benefit from many more computers (students have limited or no internet access) and a small telescope would do wonders for the teaching of astronomy. Laos is a much less affluent country than Thailand, although the two share very similar languages, culture and ethnicity. But economically they are a long way apart. In spite of that, the biggest asset is, as in many developing countries, the students, and I found a tremendous enthusiasm for astronomy and learning, perhaps just as strong in Laos as in Thailand, if not more so.



John Hearnshaw receives a gift from the head of the Physics Department at the National University of Laos. Also in the group are Boonrucksar Soonthornthum (2<sup>nd</sup> from left), Vickie Hearnshaw (2<sup>nd</sup> from right), and Khamphouth Phommasone (far right)

For further information, readers can refer to my full report to the IAU to be found at <http://www2.phys.canterbury.ac.nz/~jhe25/pgwwda/index.html> This gives contact information for astronomers in the two countries. I am grateful to Prof Boonrucksar Soonthornthum and Ms Siramas Komonjinda (Thai PhD student in New Zealand) who accompanied me on a 1000 km journey across northern Thailand to Laos, visiting universities and other institutions. They made many of the detailed arrangements for the whole trip.

Principal hosts for my trip were as follows:

- Chiang Mai University: Ms Siramas Komonjinda, lecturer in physics and doctoral student in New Zealand (binary stars) [sko18@student.canterbury.ac.nz](mailto:sko18@student.canterbury.ac.nz)
- NARIT: Prof Boonrucksar Soonthornthum, Director of NARIT [boonrucksar@narit.or.th](mailto:boonrucksar@narit.or.th)
- Naresuan University: Assoc Prof Chayan Boonyarak, Dean of Science (and an observational astronomer; binary, variable sars). [chayanb@nu.ac.th](mailto:chayanb@nu.ac.th)
- Khon Kaen University: Dr Orrarujee (Joy) Muanwong, cosmology, Dept of Physics [ormua@kku.ac.th](mailto:ormua@kku.ac.th)
- National University of Laos, Vientiane: Dr Khamphouth Phommasone, Assistant Dean of Science and head of Geophysics Division, NUL [khamphouth4@yahoo.com](mailto:khamphouth4@yahoo.com)

- Mahidol University, Bangkok: Prof David Ruffolo, solar physics and cosmic rays  
[david\\_ruffolo@yahoo.com](mailto:david_ruffolo@yahoo.com)



Students and staff in physics & astronomy at the National University of Laos. The the left of John Hearnshaw are Boonrucksar Soonthornthum and Khamphouth Phommasone

John Hearnshaw (Chair of IAU Commission 46 PGWWDA)  
[john.hearnshaw@canterbury.ac.nz](mailto:john.hearnshaw@canterbury.ac.nz)

## PLANETARY TROUBLE

Although astronomers have introduced a new definition of a planet and expelled Pluto from the category “planet”, the recent decision will keep troubling them for some years because the expulsion was made democratically. Moreover they have to consider the reaction of the public who know Kepler's third law of planetary motion from secondary school certificate algebra, and, from higher secondary school certificate physics, the equation of velocity  $v$  of a moon in a circular orbit radius  $R$  around the much more massive planet mass  $M$ . That is

$$v^2 = GM/R$$

The third condition, in the new definition, requires the clearance of the neighbourhood around the planet's orbit. How to decide it? There is no specification of the span of clearance or the minimum value of distance from the planet, within which a smaller body should not exist/orbit the planet.

On the contrary, the equation of velocity permits any distance between planet and moon,  $R$ , any value and mass of planet,  $M$ . Any value of velocity,  $v$ , is also allowed – one just has to plug numbers in the equation and compute the velocity. So how to decide the clearance of the neighbourhood around a

planet? Therefore a higher secondary school certificate student may even question why  $v$  is called the *critical* velocity, if any value is permitted by the above equation.

Physics has already lost the lustre and hence the main aim of Einstein Year was to popularize physics. But introduction of such a conflicting definition will have adverse effect on physics and astronomy. Therefore, I think, it is necessary to reconsider the third condition in the new definition and its possible effect on the image of physics and astronomy.

Dileep V Sathe, Retired Teacher and LM of IAPT, 1106-L0559  
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*Correspondence on the views expressed by Dileep Sathe could be addressed directly to him, or to the editor. You could also submit a short article to the Newsletter.*

## **NEWS OF MEETINGS AND OF PEOPLE**

### **REPORT ON YOUNG ASTRONOMERS' EVENTS AT THE IAU GENERAL ASSEMBLY, PRAGUE 2006**

Two specific events for Young Astronomers took place during the General Assembly at Prague in August 2006 – a Young Astronomers' Lunch-Debate, and a Young Astronomers' Consulting Service. These events met a large success among the Young Astronomers, more than 175 of them participated to the lunch-debate. The Consulting Service was run during the all GA by Czech young astronomers; a dedicated office was allocated to it. The reply of more "advanced" astronomers to their potential participation was very positive, in less than 2 days more than 80 of them registered as consultants.

Detailed information is available on the following web pages. About the organization of these event <http://astro.cas.cz/yae/index.html> the venue of the lunch-debate [https://astro.cas.cz/yae/php/ld\\_guests.php](https://astro.cas.cz/yae/php/ld_guests.php) [https://astro.cas.cz/yae/php/round\\_tables\\_ld.php](https://astro.cas.cz/yae/php/round_tables_ld.php) and the consultants [https://astro.cas.cz/yae/php/cs\\_consultants.php](https://astro.cas.cz/yae/php/cs_consultants.php)

Surveys have been done for these two events, and their results will be placed on these Web pages. These events have been set up thanks to the creativity and enthusiasm of Michal Dovciak.

Michele Gerbaldi (Chair of the young astronomers events)  
[gerbaldi@iap.fr](mailto:gerbaldi@iap.fr)

### **INTERNATIONAL SCHOOL FOR YOUNG ASTRONOMERS 29, 5-24 MARCH 2007, MALAYSIA**

This took place at the Malaya University, Kuala Lumpur, and then at Langkawi Island. Among the topics covered were

- astronomical instrumentation
- solar physics
- radio astronomy

Also included was a session on the Virtual Observatory, and practical activities using computers

More information is at  
<http://www.angkasa.gov.my/isya2007/index.html>

The organizers can be contacted as follows  
Michele Gerbaldi, Chairperson of the ISYA2007 programme  
[gerbaldi@iap.fr](mailto:gerbaldi@iap.fr)  
and

Fairos Asillam, Secretary of the Malaysian National Committee for the ISYA 2007  
[fairos@angkasa.gov.my](mailto:fairos@angkasa.gov.my) [mhdfairos@gmail.com](mailto:mhdfairos@gmail.com)

Michele Gerbaldi  
[gerbaldi@iap.fr](mailto:gerbaldi@iap.fr)

### **COSMOS IN THE CLASSROOM 2007, 3-5 AUGUST, SOUTHERN CALIFORNIA**

The US National Conference on teaching introductory astronomy, Cosmos in the Classroom 2007, will take place at Pomona College, Southern California 3-5 August 2007. This is a hands on

symposium on teaching astronomy to non-science majors. The meeting is sponsored by the Astronomical Society of the Pacific, with co-sponsorship by the American Astronomical Society, JPL, and other astronomical and educational organizations.

The meeting is open to everyone who teaches astronomy, at university, college, high-school, or informal settings. New instructors, part-time instructors, graduate students, and post docs are most welcome.

For updated information and to get on the mailing list for the meeting, please go to the conference web site <http://www.astrosociety.org/events/cosmos.html>

The site now has cost estimates for those who need to begin applying for travel funding.

Please pass this message on to others in your area who might be interested in the meeting.

From 01 March the organizing committee has been open to accept

- abstracts for poster papers describing innovative courses, teaching techniques, or materials
- proposals for 50-minute, hands-on workshops, training participants in some particular technique, approach, or educational topic.

We encourage participants to be thinking about contributions in these two areas.

Some scholarships for the meeting are likely to be available. Further information will be available on the above web site.

Bryan Penprase (Chair, Local Organizing Committee)

Andrew Fraknoi (Chair, Program Committee)

[fraknoiandrew@fhda.edu](mailto:fraknoiandrew@fhda.edu)

## USEFUL WEBSITES FOR INFORMATION ON ASTRONOMY EDUCATION AND OUTREACH MEETINGS

The following websites contain information on future (and recent) meetings and conferences on, or very relevant to, astronomy education and development. In compiling this short list I am well aware of a strong European bias. **Please send me by email URLs for relevant websites in other areas of the world.**

### UK

The Association for Astronomy Education

<http://www.aae.org.uk>

The British Association of Planetaria

<http://www.bap.redthreat.co.uk>

The National Schools Observatory

<http://www.schoolsobservatory.org.uk>

### Europe

The European Association for Astronomy Education

<http://www.eaae-astro.org>

The European Astronomical Society

<http://www.iap.fr/eas>

The European Southern Observatory

<http://www.eso.org/outreach/eduoff>

### USA

(among several other good sites)

The Astronomical Society of the Pacific

<http://www.astrosociety.org>

Barrie W Jones

(for contact details see Officers & Organizing Committee of Commission 46)

## INFORMATION TO BE FOUND ON THE IAU C46 WEBSITE

The IAU C46 website <http://astronomyeducation.org> (or <http://physics.open.ac.uk/IAU46>) contains the following information.

- Overview (of C46, in English, French, and Spanish)
- Offices and Organizing Committee
- Program Groups
- National Liaisons (directory)
- Online Newsletters
- Presidents and Current Vice-President
- Resolution on the Value of Astronomy Education (passed by the IAU General Assembly 2003)
- IAU Working Group on Communicating Astronomy
- External links
- Announcements/News
- Minutes from the 2003 IAU General Assembly
- Commission 46 Terms of Reference, Rules & Guidelines

## OFFICERS & ORGANIZING COMMITTEE OF COMMISSION 46

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**Officers & Organizing Committee**

The officers 2006-2009 are: the President, the Vice-President, and the Retiring President. For details of the Organizing Committee, and for membership of the Program Groups, see the website

<http://astronomyeducation.org> (or <http://physics.open.ac.uk/IAU46>)

**National Liaisons**      **Barrie W Jones (PG Chair)**  
These are listed on the website <http://astronomyeducation.org>  
(or <http://physics.open.ac.uk/IAU46>)

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