

## **THE INTERNATIONAL YEAR OF ASTRONOMY 2009**

**PEDRO RUSSO** (on behalf of the IAU IYA 2009 EC WG)

International Astronomical Union/UNESCO

### **ABSTRACT**

As the International Year of Astronomy 2009 (IYA2009) comes to a close, the true scope of the venture is becoming clear. The Year was launched by the International Astronomical Union (IAU) and the United Nations Educational, Scientific and Cultural Organization (UNESCO) under the theme “The Universe, Yours to Discover”. Since its inception, IYA2009 was planned to be more than just a series of activities occurring over 12 months. It has been designed and implemented as a springboard for the popularisation of astronomy with a much longer timeframe in mind.

Abundant in grass-roots initiatives and global projects, this venture has been highly visible and its impact will last for years. Perhaps the most impressive statistic from IYA2009 is the sheer size and scale of the astronomy network that has been created: the largest in history. 148 countries, from Afghanistan to Zimbabwe, joined together to work toward the common goal of making astronomy accessible to all; the International Year of Astronomy 2009 truly has been international! Individuals and groups in all of these countries have been collaborating both internally and across borders on projects beneficial to us all. The relationships forged between scientists, communicators, teachers, and enthusiasts during IYA2009 should remain far into the future, and it is hoped they will only become stronger with time. Sharing resources and expertise is a win-win situation, as IYA2009 has shown.

### **A RECORD-BREAKING YEAR**

Most of the incredible initiatives have come from individual countries. During 2009 more than one million Canadians have experienced a so-called “Galileo moment”, an engaging astronomical experience that has opened their eyes to the Universe. In Portugal more than 300 000 people participated in this year’s astronomy-themed Oceans festival. It featured a Guinness World Record 4.8-km long canvas painted with the help of enthusiastic volunteers. In Japan more than 7 million people were outside stargazing during 2009.

The IYA2009 presence in the new media sphere has been tremendous: the number of IYA2009-related blog entries and tweets reached millions. The IYA2009 Cornerstone Project Cosmic Diary, a blog where 60 professional astronomers from around the world blog about their lives, families, friends, hobbies and interests, as well as their work, had more than 250000 visitors and more than 2100 blog entries. As another example, more than 10 000 people participated in

Meteorwatch on Twitter, making this the first event of its kind, and also one of the biggest mass-participation events of IYA2009. On both nights of the Perseid meteor shower it was the #1 top “trending topic”, by far the most-discussed thing on the Twitter network anywhere in the world!

## **PLANET-WIDE IMPACT**

The global IYA2009 projects have also been more successful than anyone initially dared to imagine. Two worldwide star parties were held in 2009: 100 Hours of Astronomy in April, and Galilean Nights in October. In total more than 3 million people got involved, with many members of the public seeing night sky objects such as planets and the Moon through a telescope for the very first time; a life-changing experience for many. A record-breaking and unprecedented live 24-hour webcast called Around the World in 80 Telescopes was a true highlight during 100 Hours of Astronomy. Featuring astronomical research observatories both on and off the planet, the webcast gave members of the public a snapshot of life at research observatories around the world during a single 24-hour period, showing viewers the wide range of astronomers' activities at many, often very different, observatories. The marathon webcast, which had at least 200 000 viewers worldwide, gave a striking demonstration of the global diversity of astronomical research.

Seventeen developing countries, namely Macedonia, Nepal, Uganda, Mongolia, Nicaragua, Nigeria, Kenya, Ethiopia, Gabon, Rwanda, Uruguay, Tajikistan, Ghana, Trinidad and Tobago, Mozambique, Pakistan and Tanzania, have received seed grants to stimulate astronomy educational and outreach. Their activities span from astronomy education workshops for teachers, recording and preservation of indigenous astronomy knowledge, production of school astronomy education resources in local languages and many more.

## **INFLUENCING POLICY MAKERS**

Political interest in IYA2009 was also high, which in itself is an achievement for any popularisation initiative. In the United States of America, the House of Representatives passed a resolution supporting IYA2009. The Spanish Congress of Deputies also passed a law supporting astronomy in the framework of IYA2009. Heads of State were keen to express their support for the Year. The President of the Portuguese Republic, Prof. Dr. Aníbal Cavaco Silva, personally presided over the Portuguese IYA2009 Honour Committee. The President of the Republic of Slovenia, Dr. Danilo Turk, became the patron of IYA2009 in Slovenia. Lech Kaczynski presided over the Polish IYA2009 Honour Committee, while Prince Felipe of Spain (Prince of Asturias) did the same for the Spanish IYA2009 Honour Committee. The former Belgium Prime Minister and current President of the European Council, Herman Van Rompuy, voiced support of astronomy during an IYA2009 event in Belgium held in April 2009.

The former European Commissioner for Science and Research and present European Commissioner for Environment, Janez Potočnik, expressed his support of astronomy during the European

opening of IYA2009 in Prague, Czech Republic. In the US, the event celebrating IYA2009 at the White House with President Obama and the First Family on 5 October 2009 made headlines. In Nepal the total solar eclipse observation event on 22 July 2009 was attended by the Prime Minister of Nepal, Madhav Kumar together with thousands of members of the public. Iran's President Mahmoud Ahmadinejad pointed that IYA2009 provided a chance for young scientists to develop a more vivid vision of man's future during his inaugural speech of the 3rd International Astronomy and Astrophysics Olympiad in Tehran, Iran. Pope Benedict XVI gave an eloquent speech in which he said *"The International Year of Astronomy is meant not least to recapture for people throughout our world the extraordinary wonder and amazement which characterised the great age of discovery in the sixteenth century."*

## **CROSSING BORDERS AND BRIDGING BOUNDARIES**

Some projects crossed country borders in a literal sense. The GalileoMobile was a science education itinerant project that spent two months bringing life-changing experiences and the excitement of astronomy to young children in Chile, Bolivia and Peru. In total the GalileoMobile visited around 3000 children in 30 schools, covering a distance of 7000 km. Tunisia's Astro-Bus was a similar project. From January to September the Astro-Bus visited around 60 regions all over the country, crossing approximately 15 000 km, sharing its content with 100 000 Tunisians of all ages. Telescopes have also travelled more than 20 000 km across Argentina, providing thousands of people with the opportunity of observing the firmament through a telescope.

## **A SPRINGBOARD TO SUCCESS**

The International Year of Astronomy 2009 was never seen as a "one-off" event lasting just one year, but as a means of creating structures for collaboration, lasting self-sustaining activities and innovative concepts for the communication of astronomy. Most of the IYA2009 Cornerstone projects will continue beyond 2009 unchanged or in a slightly changed form. The maintenance of the IYA2009 networks is one of the priorities of the IYA2009 legacy and the global networks will continue to operate and engage millions of people.

Some of the Cornerstones will be incorporated into International Astronomical Union (IAU) plans. A prime example is Dark Skies Awareness, since participation in the protection of the sky is an essential duty of the IAU. Thanks to Developing Astronomy Globally and also to the general networking effort, developing nations have enjoyed increased links with astronomy groups and organisations at home and abroad. New openings and opportunities at both the professional and amateur level instigated during IYA2009 are set to continue, allowing expertise within these countries to be maximised, and helping global astronomy research and science communication. The IAU has been at the forefront of these efforts, and consolidating links between the IAU and developing nations is seen as a priority in the brand new IAU Strategic Plan for Astronomy De-

velopment. From the IYA2009 networks, we know that efficient organisation is the foundation of success. This is when having an organisation like the IAU to coordinate efforts really comes into its own. Education was a strong theme during the Year, emphasised in particular by the Galileo Teacher Training Cornerstone, and there is much potential in building on the existing efforts to extend the reach of science in general and astronomy in particular, on a world level. Thus, IYA2009 is a springboard for the enhancement of IAU educational activities as set in the Strategic Plan. Combining increased opportunities for developing nations with improved education, the Universe Awareness project (UNAWA) tackled difficult issues head-on during IYA2009. Its aim of creating internationally an awareness of our place in the Universe and on Earth, targeted at children in underprivileged environments, has inspired many. Clearly this programme must continue in 2010 and beyond. Providing a wealth of educational material is a factor that deserves to be highlighted. During IYA2009 resources were disseminated and put to good use. Celestron and Japanese "You are Galileo" telescopes, as well as large numbers of Galileoscopes have been donated, mainly to developing countries. The Galileoscopes, low-cost telescope kits, result from one of the IYA2009 Cornerstones, allowing educators to utilise excellent quality, but accessible tools to improve their astronomy communication. Galileoscopes will continue to be sold after 2009, but at a higher price.

Other Cornerstones, and most of the Special projects, will also survive 2009. Large steps forward have been made for the designation of astronomical sites by the UNESCO World Heritage programme. These give historical sites prominence and prestige, and help ensure that the public is aware of their importance. More work remains to be done in the coming years. Protecting and preserving our astronomical cultural heritage for future generations to appreciate must remain a priority.

She Is An Astronomer, which promotes gender-equality, has gathered much interesting material on its website and will soon hold an international workshop in England. In conjunction with the Cosmic Diary, this Cornerstone can help to present a modern image of astronomers to the public. The stereotype of oddball figures with long beards in towering observatories is not only inaccurate, but also damaging. Helping to reshape preconceptions and expectations is notoriously difficult, but also necessary. The extent to which IYA2009 has had a positive impact in this area will only be known with time. Last but not least, large-scale public observing programmes, following the model of the famous worldwide events, 100 Hours of Astronomy and the Galilean Nights, will continue to be organised. A bright future?

It is hoped that IYA2009 has fostered: an increased awareness by society that we are living in an extraordinary era of discoveries about the Universe; a modern image of astronomers in the eyes of the public; a clear demonstration that a career in astronomy is also for women and minorities; the creation of international networks of scientists, communicators, teachers and amateurs, which should remain in existence far beyond 2009; a wealth of educational material on astronomy, books, films, movies for television, DVDs, theatre, planetarium shows, and music related to astronomy; the inception of a new set of goals for the IAU embedded in the Strategic Plan, of a partnership between IYA2009 and UNESCO; and the birth of many vocations at the professional and amateur level.