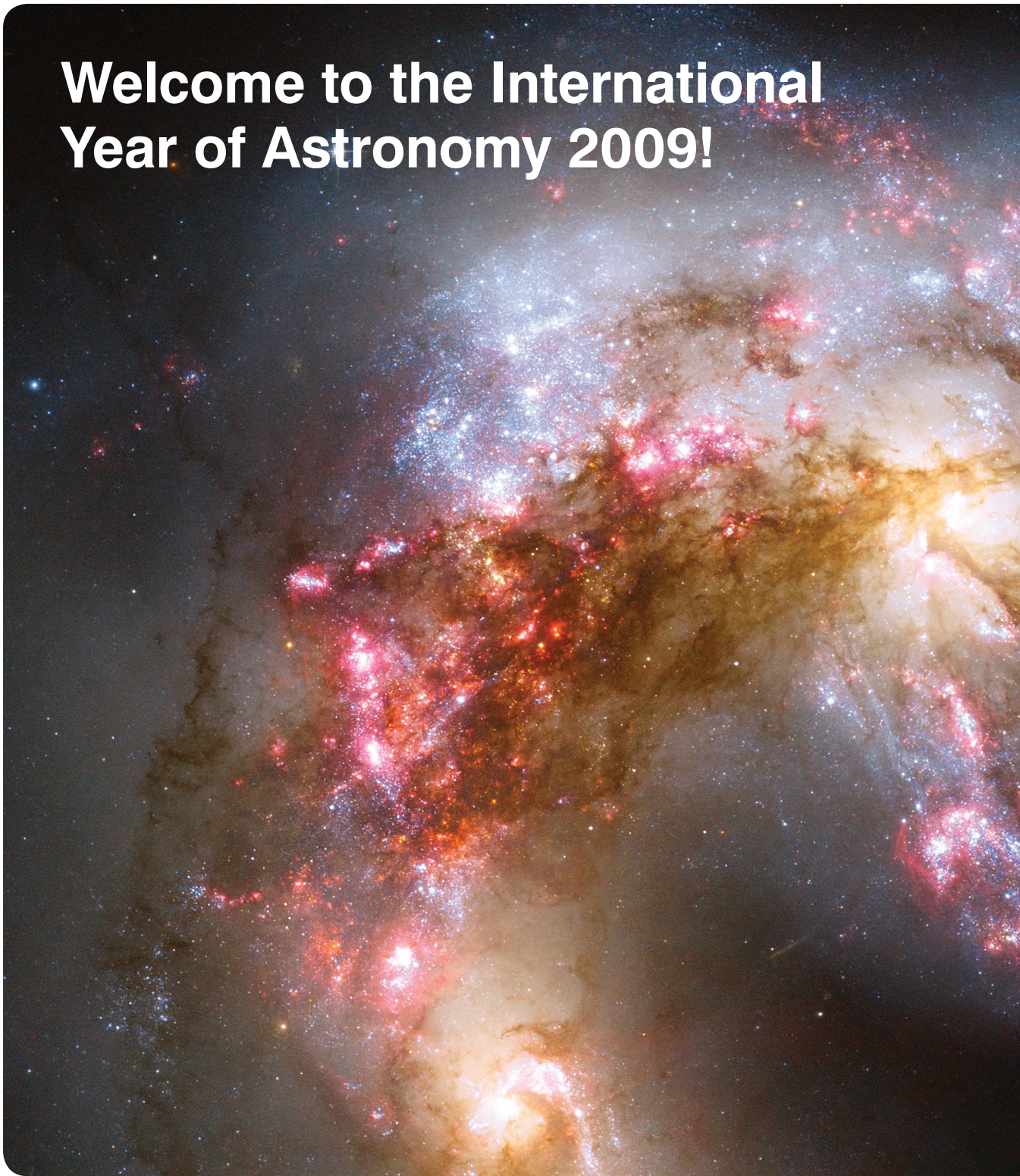


United Nations  
Educational, Scientific and  
Cultural Organization

# INTERNATIONAL YEAR OF ASTRONOMY 2009



# Welcome to the International Year of Astronomy 2009!



*The IAU, UNESCO and our Organisational Associates wish everyone a year rich in astronomical experiences as we all celebrate the International Year of Astronomy 2009!*

**Catherine Cesarsky**  
IAU President





Colliding Antennae galaxies  
(NASA, ESA, and the Hubble Heritage Team STScI/AURA)



Volker Steege

**Catherine Cesarsky**  
IAU President

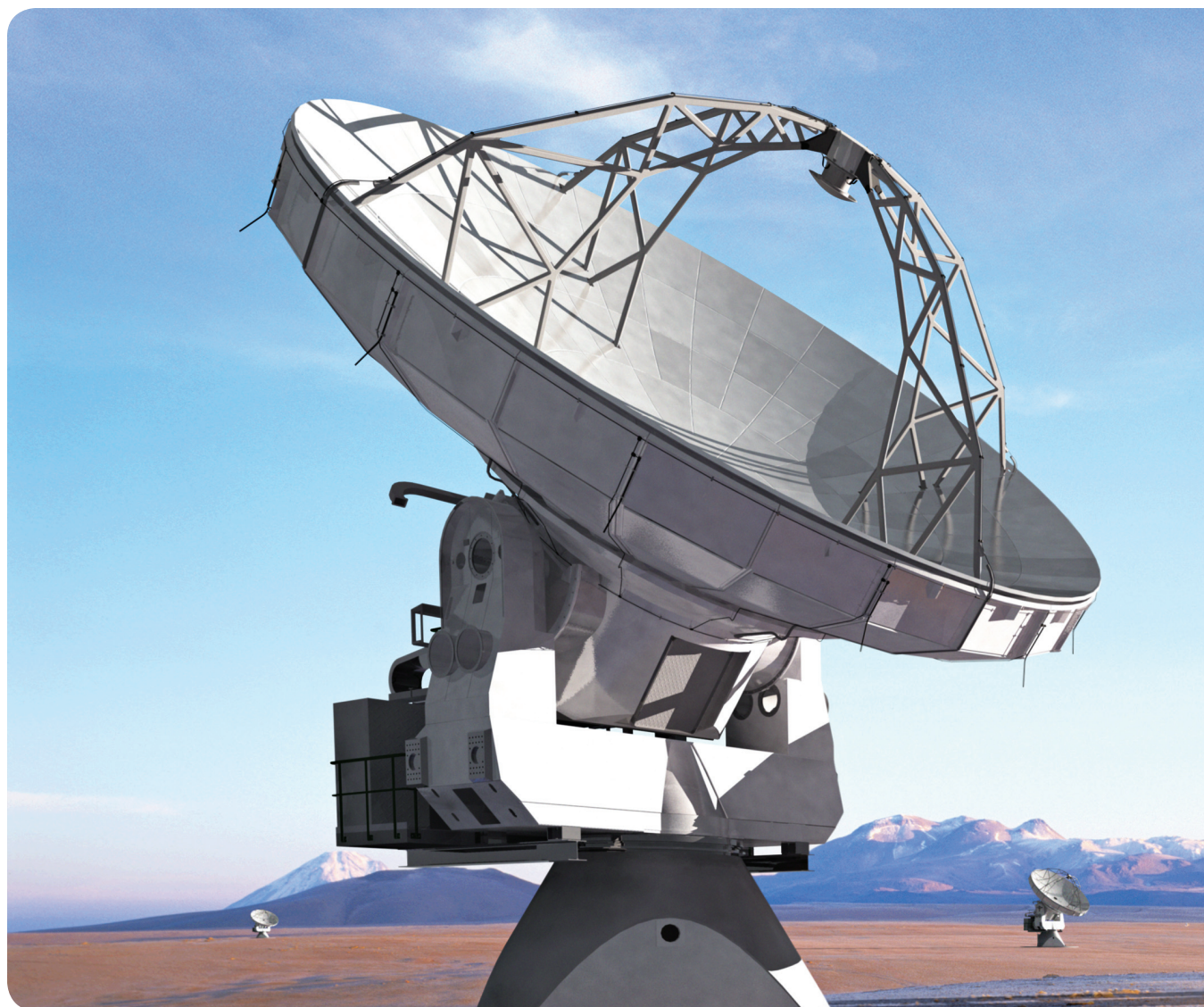
The International Astronomical Union (IAU) launched 2009 as the International Year of Astronomy (IYA2009) under the theme, *The Universe, Yours to Discover*. IYA2009 marks the 400th anniversary of the first astronomical observation through a telescope by Galileo Galilei. It will be a global celebration of astronomy and its contributions to society and culture, with a strong emphasis on education, public engagement and the involvement of young people, with events at national, regional and global levels throughout the whole of 2009. UNESCO has endorsed the IYA2009 and the United Nations proclaimed the year 2009 as the International Year of Astronomy on 20 December 2007.

Astronomy is one of the oldest fundamental sciences. It continues to make a profound impact on our culture and is a powerful expression of the human intellect. Huge progress has been made in the last few decades. One hundred years ago we barely knew of the existence of our own Milky Way. Today we know that many billions of galaxies make up our Universe and that it originated approximately 13.7 billion years ago. One hundred years ago we had no means of knowing whether there were other solar systems in the Universe. Today we know of more than 200 planets around other stars in our galaxy and we are moving towards an understanding of how life might have first appeared. One hundred years ago we studied the sky using only optical telescopes and photographic plates. Today we observe the Universe from Earth and from space, from radio waves to gamma rays, using cutting edge technology. Media and public interest in astronomy have never been higher and major discoveries are frontpage news throughout the world. The IYA2009 will meet public demand for both information and involvement.

There are outstanding opportunities for everyone to participate in the IAU IYA2009 events. This brochure outlines some of the events planned at the global level, which will be supported by thousands of additional national and regional activities.

The IAU, UNESCO and our Organisational Associates wish everyone a year rich in astronomical experiences as we all celebrate the International Year of Astronomy 2009!





*The International Year of Astronomy 2009 is a global effort initiated by the International Astronomical Union and UNESCO to help the citizens of the world rediscover their place in the Universe through the day- and night-time sky, and thereby engage a personal sense of wonder and discovery.*

## Vision

The vision of the International Year of Astronomy is to help people rediscover their place in the Universe through the sky, and thereby engage a personal sense of wonder and discovery. Everyone should realise the impact of astronomy and other fundamental sciences on our daily lives, and understand how scientific knowledge can contribute to a more equitable and peaceful society.

IYA2009 activities will take place locally, nationally, regionally and internationally. National Nodes have been formed in each country to prepare activities for 2009. These nodes will establish collaborations between professional and amateur astronomers, science centres and science communicators to prepare activities for 2009. More than 100 countries are already involved, and well over 140 are expected to participate eventually. To help coordinate this huge global programme and to provide an important resource for the participating countries, the IAU has established a central Secretariat and an IYA2009 website ([www.astronomy2009.org](http://www.astronomy2009.org)) as the principal IYA2009 resource for public, professionals and media alike.



# Vision and goals of the International Year of Astronomy 2009



Future ALMA Array – Composite Image  
(ESO)

## Goals

1. Increase scientific awareness among the general public through the communication of scientific results in astronomy and related fields, as well as the process of research and critical thinking that leads to these results.
2. Promote widespread access to the universal knowledge of fundamental science through the excitement of astronomy and sky-observing experiences.
3. Empower astronomical communities in developing countries through the initiation and stimulation of international collaborations.
4. Support and improve formal and informal science education in schools as well as through science centres, planetariums and museums.
5. Provide a modern image of science and scientists to reinforce the links between science education and science careers, and thereby stimulate a long-term increase in student enrolment in the fields of science and technology, and an appreciation for lifelong learning.
6. Facilitate new, and strengthen existing, networks by connecting amateur astronomers, educators, scientists and communication professionals through local, regional, national and international activities.
7. Improve the gender-balanced representation of scientists at all levels and promote greater involvement by underrepresented minorities in scientific and engineering careers.
8. Facilitate the preservation and protection of our global cultural and natural heritage of dark skies and historical astronomical sites, through the awareness of the importance and preservation of the dark skies and astronomical sites for the natural environment and human heritage.



# The team behind the scenes

## The International Astronomical Union



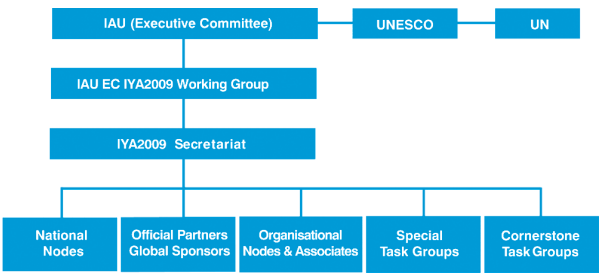
The International Astronomical Union (IAU) is the initiator and international leader of IYA2009. The IAU was founded in 1919 and maintains a small secretariat in Paris. Its mission is to promote and safeguard the science of astronomy through international cooperation. The Individual Members are professional astronomers active in research and education in astronomy all over the world. The IAU is a grassroots organisation run by its members for the benefit of astronomy worldwide. It maintains friendly relations with organisations that include amateur astronomers in their membership. Currently the IAU has nearly 10 000 Individual Members in 87 countries. In addition to arranging scientific meetings, the IAU promotes astronomical education and research in developing countries through its International Schools for Young Astronomers, Teaching for Astronomy Development and World Wide Development of Astronomy programmes and through joint educational activities with UNESCO and other bodies.

The IAU acts as a catalyst and coordinator for IYA2009 at the global level, largely, but not exclusively, through the IYA2009 website and the Secretariat. The IAU will organise a small number of international events such as the global astronomy web portal, global image exhibitions and the Galileoscope project. The IAU will be the primary interface with bodies such as UNESCO and the United Nations.

The next triennial General Assembly of the IAU takes place in Rio de Janeiro in August 2009. Some 2500 astronomers from all over the world will attend. Considerable media attention is always given to the General Assemblies, with regular briefings and news releases provided. Naturally the programme of the General Assembly will be closely linked to the themes and activities of the IYA2009, and this will provide a further opportunity for the partners of the IYA2009 to promote their activities through displays and speakers at dedicated sessions, particularly those devoted to communication and education.

## UNESCO

UNESCO — the United Nations Educational, Scientific and Cultural Organization — was founded on 16 November 1945. It is a specialised agency of the United Nations that, through its day-to-day work in education, the social and natural sciences, culture and communication, aims to build peace in the minds of men.



UNESCO functions as a laboratory of ideas and a setter of standards to forge universal agreements on emerging ethical issues. The Organization also serves as a clearinghouse for the dissemination and sharing of information and knowledge, while helping Member States to build their human and institutional capacities in diverse fields. In short, UNESCO promotes international cooperation among its 193 Member States and six Associate Members in the fields of education, science, culture and communication.

UNESCO is working to create the conditions for a genuine dialogue between nations based on respect for shared values and the dignity of each civilisation and culture. The world urgently requires global visions of sustainable development based upon the observance of human rights, mutual respect and the alleviation of poverty, all of which lie at the heart of UNESCO's mission and activities.

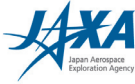
## The IAU IYA2009 Secretariat

The central hub of the IAU activities for the IYA2009 is the Secretariat. This was established to coordinate activities during the planning, execution and evaluation of the Year. The Secretariat will liaise continuously with the National Nodes, Task Groups, Partners and Organisational Associates, the media and the general public to ensure the progress of the IYA2009 at all levels.

The IYA2009 website ([www.astronomy2009.org](http://www.astronomy2009.org)) has been set up and more than 100 member countries have established national committees and appointed Single Points of Contact (SPoCs). The Secretariat and the website are the most important coordination and resource centres for all the countries taking part, but most particularly for those developing countries that lack the national resources to mount major events alone. Based on its previous experience of the public communication of astronomical events, such as solar eclipses and the Venus transit, the IAU confidently expects many tens, even hundreds, of millions of hits on the IYA2009 website.



# Organisational Associates

	European Southern Observatory		American Astronomical Society
	L'Institut National des Sciences de l'Univers		Canadian Astronomical Society
	Sterrewacht Leiden		National Research Council Canada
	Science & Technology Facilities Council		Nederlandse Onderzoekschool Voor Astronomie
	Swiss Academy of Sciences		The Society for Popular Astronomy
	Ministerio de Educación y Ciencia (Spain)		National Astronomical Observatory of Japan
	European Science Foundation		European Space Agency
	Deutsches Zentrum für Luft- und Raumfahrt		National Aeronautics and Space Administration
	The Planetary Society		Centre National d'Etudes Spatiales
			Japan Aerospace Exploration Agency



## Pedro Russo — IAU Coordinator for IYA2009

Pedro coordinates the implementation of the IYA2009 globally. He is the first point of contact for international matters concerning IYA2009. Pedro supports external requests from Single Points of Contact, journalists, scientists and the general public, prepares generic and event-related outreach material and interfaces with the hundreds of national and organisational IYA2009 nodes.



## Mariana Barrosa — IYA2009 Coordination Assistant

Mariana supports the planning, coordination, preparation, implementation and revision of the International Year of Astronomy 2009 and other joint programming processes.



## Lars Lindberg Christensen — IYA2009 Secretariat Manager

Lars manages the IYA2009 Secretariat, i.e. oversees the strategy of the project, the budget (including fundraising) and ensures a smooth daily workflow.





The Bubble Nebula  
(T.A. Rector/University of Alaska Anchorage, H. Schweiker/WIYN and NOAO/AURA/NSF)

## Roadmap

In July 2003, at the IAU General Assembly in Sydney, Australia, the IAU voted unanimously in favour of a resolution asking the United Nations to declare the year 2009 as the International Year of Astronomy. In October 2005 UNESCO endorsed the IYA2009 and on 20 December 2007 the United Nations proclaimed 2009 as the International Year of Astronomy.

The year 2008 will be spent on preparing the Year and all its activities, and 2009 will naturally be the focal point for all these activities. In 2010 the IYA2009 organisers will scrutinise performance at all levels and assess public perception of the IYA2009 experience with the intention of answering the following questions: Were the objectives of the IYA2009 met? Has public appreciation of science changed as result of the IYA2009? What were the unexpected outcomes of the IYA2009?



'03–'06 Inception

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'07 Planning

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'08 Preparation

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'09 Implementation

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'10 Evaluation

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Locally

Nationally

Regionally

Internationally





# International networks — now and in the future

Young Stars in Their Baby Blanket of Dust  
(NASA/JPL-Caltech/Harvard-Smithsonian CfA)

The IYA2009 will promote and facilitate the creation of international networks to foster a global appreciation of the role and value of science and astronomy as a unifying activity for humanity. IYA2009 will start up, connect and support networks of professional and amateur astronomers, educators and astrophysicists from all over the world, so that all these valuable sources of knowledge can be shared. The networks of hundreds, if not thousands of astronomical organisations, nationally and internationally, will be one of the legacies of the IYA2009 that will last far beyond the year 2009.

The activities of the IYA2009 will largely take place at the national level: after only nine months, a significant global network has already been created. This network has reached more than 115 countries and a total of 140 are eventually expected to join, making it possible to reach out to 97% of the world's population.



# IYA2009 Global Projects



The International Year of Astronomy 2009 is supported by eleven Cornerstone projects. These are global programmes of activities centred on a specific theme and are some of the projects that will help to achieve the IYA2009's main goals; whether it is the support and promotion of women in astronomy, the preservation of dark-sky sites around the world or educating and explaining the workings of the Universe to millions, the eleven Cornerstones will be some of the key elements in the success of the IYA2009.

The Cornerstone projects are supported by a number of Special projects, which will develop interactions and link up the different initiatives and projects within IYA2009. These projects provide extra means to achieve the IYA2009's main goals and objectives. The Cornerstone projects and one Special project are outlined in more detail on the following pages.





# 100 Hours of Astronomy

An event 400 years in the making

Gemini North – Mauna Kea, Hawaii  
(Gemini Observatory)

This is a 100-hour, round-the-clock, round-the-globe event, including live webcasts from research observatories, public observing events and other activities around the world. One of the key goals is to allow as many people as possible to look through a telescope, as Galileo first did 400 years ago. The 100 Hours of Astronomy will take place from 2–5 April. The Moon is at first quarter on 2 April, so it is at a good phase for early evening observing over this period.



This event consists of two parts:

1. Live observatory webcasts, observing events and other activities connecting large observatories around the world, coordinated by the European Southern Observatory (ESO).
2. A 100-hour “sidewalk” observing event to allow as many people as possible to look through a telescope, and see what Galileo saw, managed by Astronomers Without Borders (AWB).

**Co-chairs:** Douglas Pierce-Price ([dpiercep@eso.org](mailto:dpiercep@eso.org)) & Mike Simmons ([mikes@astronomerswithoutborders.org](mailto:mikes@astronomerswithoutborders.org))





# The Galileoscope

## Millions looking at the sky



Who does not remember the first time they looked at the Moon through a telescope and were amazed by the details of the mountains and craters? The same is true for Jupiter's cloud belts and its Galilean moons, Saturn's rings and remote sparkling star clusters. Observing through a telescope for the first time is an experience that shapes our view of the sky and the Universe. The IYA2009 programme wants to share this observational and personal experience with as many people as possible across the world and is collaborating with the US IYA2009 National Node to develop a simple, accessible, easy-to-assemble and easy-to-use telescope that can be distributed by the millions. Ideally, every participant in an IYA2009 event should be able to take home one of these little telescopes. This simple telescope enables people to build and observe with a telescope that is similar to Galileo's. Sharing these observations and making people think about their importance is one of the main goals of IYA2009: *Promote widespread access to new knowledge and observing experiences.* A do-it-yourself Galileoscope could be the key to pursuing an interest in astronomy beyond IYA2009, especially for people who cannot afford to buy a commercial telescope.

We aim to give 10 million people their first look through an astronomical telescope in 2009. This is achievable if, for example, 100 000 amateur observers each show the sky to 100 people. Millions of small telescopes are sold every year, but anecdotal evidence suggests that most are rarely used for astronomy. A worldwide Telescope Amnesty programme

will invite people to bring their little-used telescopes to IYA2009 events, where astronomers will teach people how to use them and offer advice on repairs, improvements and/or replacements, encouraging more people to stay involved in the hobby. We encourage the organisers of IYA2009 celebrations in all countries to promote similar activities, with a common goal of giving 10 million people worldwide their first look through an astronomical telescope.

**Chair:** Rick Fienberg (rfienberg@skyandtelescope.com)





# Cosmic Diary

## The life of an astronomer

Observing the Universe  
(TWN/Babak Tafreshi)

The Cosmic Diary is not about the science of astronomy but rather what it is like to be an astronomer and a scientist. The Cosmic Diary aims to put a human face on astronomy. Professional astronomers will blog in text and images about their life, families, friends, hobbies and interests, as well as their work, their latest research findings and the challenges they face in their research. The bloggers represent a vibrant cross-section of working astronomers from around the world. They will write in many different languages and come from five different continents. Outside the observatories, laboratories and offices, they are musicians, parents, photographers, athletes, amateur astronomers. At work, they are managers, observers, graduate students, grant proposers, instrument builders and data analysts.

At some point during this project all the bloggers will be asked to explain one particular aspect of their work to the public. In a true exercise of science communication with the public, these scientists will be asked to translate the nuts and bolts of their scientific research into more popular language. This will be their challenge.

These “explanations” will be highlighted on the web at regular intervals and they will be used as the basis for a book and a documentary, which will be released during the IYA2009 as the legacy of this project.

**Chair:** Mariana Barrosa (mbarrosa@eso.org)





# Portal to the Universe

A one-stop universe of news

The Portal to the Universe (PTTU) seeks to provide a global, one-stop portal for online astronomy content, serving as an index, an aggregator and a social networking site for astronomy content providers, laypeople, press, educators, decision-makers and scientists. The PTTU will feature news, image, event and video aggregation; a comprehensive directory of observatories, facilities, astronomical societies, amateur astronomy societies, space artists, science communication universities; and Web 2.0 collaborative tools, such as the ranking of different services according to popularity, to promote interaction within the astronomy multimedia community. In addition, a range of “widgets” (small applications) will be developed to tap live into existing “live data”. Modern technology and the standardisation of metadata make it possible to tie all the suppliers of such information together with a single, semi-automatically updating portal.

The vision for the Portal is threefold:

- 1. **Enabling access:** To aggregate (pull) from content providers, including all astronomy-related dynamic content (e.g. RSS feeds of blogs, images, news, etc) and distribute (push) to users.
- 2. **Indexing and archiving:** To collect and maintain a central repository of useful information, including resources such as educational materials and addresses for all astronomy stakeholders such as amateur clubs, planetariums and observatories.

- 3. **Enabling communication and collaboration:** To create and maintain a network of all stakeholders, including a social network for everyone interested in astronomy.

Chair: Lars Lindberg Christensen (lars@eso.org)





# She is an Astronomer

## Breaking down misconceptions

Saturn's rings  
(NASA/JPL/Space Science Institute)

Promoting gender quality and empowering women is one of the United Nations Millennium Development Goals. The IYA2009 Cornerstone project, She is an Astronomer, will promote gender equality in astronomy (and in science in general) and tackle gender bias issues by providing a web platform where neutral information and links about gender balance and other related useful resources are collected.

Approximately one quarter of all professional astronomers are women. The field continues to attract women and benefits from their participation, but there is a wide global variation. In some countries there are no female astronomers, while in others more than half the professional astronomers are female. Moreover, the significant number of female drop-outs suggests that scientific careers are heavily affected by social and cultural factors and are not determined solely by ability.

The project targets a varied audience, including professional and amateur astronomers, students and all those who share an interest in the gender-equality problem in science and in astronomy in particular. The project will develop around its own dedicated website, which will host a special "Portrait Diary" section where female astronomers will present their own career paths, some aspects of their private lives and the difficulties they may have encountered in their professional life and during their education, set in the context of

gender equality issues. As part of a voluntary ambassador programme professional astronomers will talk to female students in schools, colleges and universities near where they live and work.

**Co-chairs:** Francesca Primas (fprimas@eso.org) & Enikő Patkos (epatkos@eso.org)



## SHE IS AN ASTRONOMER







# Dark Skies Awareness

## Seeing in the dark

The arc of the Milky Way seen from a truly dark site is part of our planet's cultural and natural heritage. It is now more urgent than ever to preserve and protect dark night skies in places such as urban cultural landscapes, national parks and sites connected with astronomical observations, as well as to support the goals of UNESCO's thematic initiative, *Astronomy and World Heritage*, to preserve sites of astronomical importance for posterity. The ongoing loss of a dark night sky for much of the world's population is a serious and growing issue that not only impacts astronomical research, but also human health, ecology, safety, security, economics and energy conservation. According to the United Nations, 2008 will be the first year in which 3.3 billion people, over half of the world's population, will live in cities. With the growth of large cities in Africa and Asia, the number of people living in cities could climb to 5 billion by 2030. As cities grow, so does their impact on the global environment.

For this Cornerstone project the IAU will collaborate with the US National Optical Astronomy Observatory (NOAO), representatives of the International Dark-Sky Association (IDA), the Starlight Initiative and other national and international partners in dark sky and environmental education on several related themes. The focus will be on three main citizen-scientist programmes to measure local levels of light pollution. These programmes will take the form of "star hunts" or "star counts", providing people with a fun and direct way to acquire heightened awareness about light pollution through firsthand observations of the night sky. Together the

three programmes will cover the entire International Year of Astronomy 2009, namely GLOBE at Night (in March), the Great World Wide Star Count (in October) and How Many Stars (January, February, April through September, November and December).

Partnerships are under discussion with existing programmes such as the World Night in Defence of Starlight (April 20), supported by UNESCO and the IAU; Earth Hour (March 28), (Inter)national Dark Sky Week, International Sidewalk Astronomy Night, Astronomers Without Borders, and The World at Night, as well as other IYA2009 Cornerstone projects such as the 100 Hours of Astronomy and the Galileo Teachers Program.

**Chair:** Connie Walker (cwalker@noao.edu)





# Astronomy and World Heritage

## Universal treasures

Planet Earth at Night  
(IAU & NASA)

UNESCO and the IAU are working together to implement a research and education collaboration as part of UNESCO's thematic initiative, *Astronomy and World Heritage*. The main objective of this initiative is to establish a link between science and culture on the basis of research aimed at acknowledging the cultural and scientific values of properties connected with astronomy. This programme provides an opportunity to identify properties related to astronomy located around the world, to preserve their memory and save them from progressive deterioration. The support from the international community is needed to implement this activity and to promote the recognition of astronomical knowledge including through the nomination of sites that celebrate achievements in science.

**Chair:** Anna Sidorenko-Dulom ([a.sidorenko@unesco.org](mailto:a.sidorenko@unesco.org))



TWAN/PK Chen



TWAN/PK Chen





# Galileo Teacher Training Program

## Teaching the teachers

The International Year of Astronomy 2009 (IYA2009) provides an excellent opportunity to engage the formal education community in the excitement of astronomical discovery as a vehicle for improving the teaching of science in classrooms around the world. An incredibly rich store of useful astronomy resources is available for such an effort, much of it in digital form and freely available on the internet. However, experienced educators and outreach specialists identify a critical impediment: many teachers lack the training to understand these resources or use them effectively in their curricula. To address this problem and to sustain the legacy of the IYA2009, the IAU — in collaboration the National Nodes and leaders in the field such as the Global Hands-On Universe project, the US National Optical Astronomy Observatory and the Astronomical Society of the Pacific — is embarking on a unique global effort to empower teachers by developing the Galileo Teacher Training Program (GTP). The GTP goal is to create a worldwide network of certified “Galileo Ambassadors” by 2012. These Ambassadors will train “Galileo Master Teachers” in the effective use and transfer of astronomy education tools and resources into classroom science curricula. The Galileo Teachers will be equipped to train other teachers in these methodologies, leveraging the work begun during the IYA2009 in classrooms everywhere. Through workshops, online training tools and basic education kits, the products and techniques developed by this programme can be adapted to reach locations with few resources of their own, as well as computer-connected areas that can take advantage of access to robotic optical

and radio telescopes, webcams, astronomy exercises, cross-disciplinary resources, image processing and digital universes (web and desktop planetariums).

**Co-chairs:** Jim Manning ([jmanning@astrosociety.org](mailto:jmanning@astrosociety.org)) & Rosa Doran ([rosa.doran@gmail.com](mailto:rosa.doran@gmail.com))



# GALILEO

## Teacher Training Program





# Universe Awareness

One place in the Universe

UNAWE

Universe Awareness (UNAWE) is an international programme that exposes very young children in underprivileged environments to the scale and beauty of the Universe. Universe Awareness illustrates the multicultural origins of modern astronomy in an effort to broaden children's minds, awaken their curiosity in science and stimulate global citizenship and tolerance. Using the sky and children's natural fascination with it as common ground, UNAWE creates an international awareness of our place in the Universe and our place on Earth.

**Chair:** Carolina Ödman (odman@strw.leidenuniv.nl)







# From Earth to the Universe

The beauty of science

The International Year of Astronomy 2009 (IYA2009) is an unprecedented opportunity to present astronomy to the global public in the form of beautiful image exhibitions world-wide.

The Cornerstone project, From Earth to the Universe (FETTU) endeavours to bring wonderful astronomical images to a wider audience in non-traditional venues. In delivering these images and the science behind them to public parks, metro stations, art centres and other locations, we wish to engage individuals who might normally ignore or even dislike astronomy, or science in general.

**Co-chairs:** Kimberly Kowal Arcand (kkowal@cfa.harvard.edu) & Megan Watzke (mwatzke@cfa.harvard.edu)







# Developing Astronomy Globally

## Astronomy for all

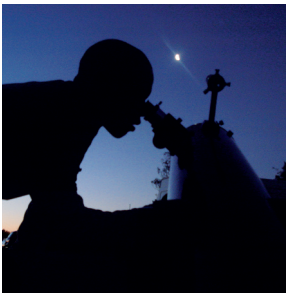
Aurora Borealis over the World Heritage Site of Denali National Park, Alaska, USA  
(TWAN/Dennis Mammana)

This Cornerstone project acknowledges that astronomy needs to be developed in three key areas: professionally (universities and research); publicly (communication, media, and amateur groups) and educationally (schools and informal education structures).

The focus will be on regions that do not already have strong astronomical communities. The implementation will be centred on training, development and networking in each of these three key areas. This Cornerstone will use the momentum of the IYA2009 to help establish and enhance regional structures and networks that work on the development of astronomy around the world.

These networks will support the current and future development work of the IAU and other programmes and should ensure that developing regions can benefit from the IYA2009 and the work of the other Cornerstone projects. It should also address the question of the contribution of astronomy to development.

**Chair:** Kevin Govender (kg@sao.ac.za)





# IYA2009 Special Projects

## The World at Night One people, one sky

A spectacular sky over the Grand Tetons  
(TWAN/Wally Pacholka)

The World at Night (TWAN) will create and exhibit a collection of stunning photographs and time-lapse videos of the world's most beautiful and historic sites against a night-time backdrop of stars, planets and celestial events. These images will present the night sky to the public in an accessible and understandable manner. The sky rises above all the landmarks and symbols of different nations and regions creating a bridge to understanding and friendship. When borders vanish, political and cultural differences become irrelevant. The universal nature of astronomy provides the means to connect people worldwide through this common interest. TWAN's parent organisation, Astronomers without Borders, has several projects designed to work towards this goal. TWAN is an innovative new approach to expanding this global perspective.

TWAN brings together photographers, astronomers and organisations worldwide to create a new international team. Material released by TWAN will include photographs, descriptions of the subject sites, the site's historical, cultural or environmental significance, how TWAN was conducted, how TWAN affected participating photographers and related issues of global importance such as peace, ecology and light pollution. TWAN will cooperate with the IYA2009 Cornerstone projects to supplement their outreach efforts and will seek venues for a worldwide exhibition and educational events in 2009.

**Chair:** Babak Tafreshi (btafreshi@twanight.org)





# IYA2009 Special Task Groups

Eagle Nebula  
(NASA/ESA Hubble Space Telescope)

## Opening Ceremony

This ceremony will take place on 15 and 16 January 2009 at the headquarters of UNESCO in Paris. Leading figures in the world of astronomy and young people from all participating countries will attend.

Chair: Françoise Combes ([francoise.combes@obspm.fr](mailto:francoise.combes@obspm.fr))

## EU Seventh Framework Programme

The IYA2009 has established a Special Task Group to investigate possible European Commission calls for proposals in the framework of the 7th Research and Development Framework Programme (FP7).

Chair: Claus Madsen ([cmadsen@eso.org](mailto:cmadsen@eso.org))

## Kepler

This Group will celebrate the 400th anniversary of Kepler's *Astronomia Nova*, the cornerstone of modern astronomy, in the year of the launch of NASA's Kepler mission to seek Earth-sized extrasolar planets.

Co-chairs: Terence Mahoney ([tjm@iac.es](mailto:tjm@iac.es)) & David Koch ([d.koch@nasa.gov](mailto:d.koch@nasa.gov))

## New Year's Eve Events

The main objective of this Special Task Group is to announce that 2009 is the International Year of Astronomy on 31 December 2008.

Chair: Helen Sim ([helen.sim@csiro.au](mailto:helen.sim@csiro.au))

## Solar Physics

This Special Task Group aims to communicate the particular relation of the Sun with the rest of the Universe, and thereby the place of solar science in astronomy.

Co-chairs: Bruno Sánchez-Andrade Nuño ([bruno@astro.physik.uni-goettingen.de](mailto:bruno@astro.physik.uni-goettingen.de)) & Phillippe Kobel ([kobel@mps.mpg.de](mailto:kobel@mps.mpg.de))

## Philately

This Special Task Group will create and maintain a global philatelic checklist of postal authority releases generated in celebration of the IYA2009 and/or astronomy in general.

Co-chairs: Michael Howell ([mhowell@mail.accd.edu](mailto:mhowell@mail.accd.edu)) & John Budd ([jwgbudd@earthlink.net](mailto:jwgbudd@earthlink.net))

## Evaluation

IYA2009 is an excellent opportunity to increase public understanding and awareness of astronomy. But will they achieve their objectives? What lessons will we learn?

Co-Chairs: Pedro Russo ([prusso@eso.org](mailto:prusso@eso.org)) & Mariana Barrosa ([mbarrosa@eso.org](mailto:mbarrosa@eso.org))

## New Media

This Task Group provides online astronomy experiences where people work, play and learn; creates content to expose people to astronomy; distributes content for active and passive channels and uses a diverse suite of technologies to reach people on multiple platforms and in a range of online settings.

Chair: Pamela Gay ([pamela@starstryder.com](mailto:pamela@starstryder.com))

## Galileo

The aim of this task group is to raise Galileo Galilei's public profile through intra-community communication, formal and informal education and public outreach.

Chair: Paolo Galluzzi ([galluzzi@imss.fi.it](mailto:galluzzi@imss.fi.it))

## Extrasolar Planets

This Task Group will operate in an area that is both easy for the general public to understand and one of the greatest scientific adventures of the 21st century: extrasolar planets and the search for life on these planets. The Task Group will create and maintain [www.exoplanet2009.org](http://www.exoplanet2009.org), an international, multilingual website.

Chair: Jean Schneider ([jean.schneider@obspm.fr](mailto:jean.schneider@obspm.fr))

## Closing Ceremony

As the IYA2009 comes to an end, we will join in a celebration of astronomy and astronomical experiences.





# The IYA2009 and the UN Millennium Development Goals

UNAWA

The IYA2009 is, first and foremost, an activity for everyone around the world. It aims to convey the excitement of personal discovery, the pleasure in sharing fundamental knowledge about the Universe and our place in it. The UN Millennium Development goals form a blueprint agreed by every country and the entire world's leading development institutions. The inspirational aspects of the International Year of Astronomy embody an invaluable resource for humanity and aim to contribute to four of the UN Millennium Development goals.

## Help to achieve universal primary education

The IYA2009 programme intends to add to the quality of primary education by providing access to basic astronomy to teachers and pupils all over the world. The night sky spans all nations. We just have to provide the guides to understand what we see and discover. Providing equal chances globally to access knowledge will result in the development of international cooperation in scientific research and relevant applications and in its broader effect will be to assist the developing world to match the western world.

## Help to eradicate extreme poverty and hunger

An increase in scientific wealth has been shown to be associated with an increase in economic wealth in developing countries, thereby contributing to the fight against poverty, improving economic capacity and establishing good governance. The IYA2009 programme aims to empower astronomical communities in developing countries through

the initiation and stimulation of international collaborations. These small steps can contribute to increasing the scientific, technological and economic wealth in developing countries.

## Promote gender equality and empower women

One of the IYA2009 goals is to improve the gender-balanced representation of scientists at all levels and promote greater involvement by underrepresented minorities in scientific and engineering careers. Gender equality is a priority concern of the whole scientific community regardless of its geographical location. The problems and difficulties are different in all regions and continents, so the IYA2009 has initiated special programmes to meet local needs.

## Develop a global partnership for development

Development relies on several factors, including the use of fundamental science to develop and use practical applications adequately. The IYA2009 programme will connect networks of professional and amateur astronomers and astrophysicists from all over the world, so that these valuable sources of knowledge can be shared. The aim of the Year is to channel the information obtained to the right development projects and applications.





Tarantula Nebula  
(ESO)



**Make it happen!**  
**Support the IYA2009**



(TWAN/Babak Tafreshi)





Girls observing the Sun  
(Kevin Govender)

Are you fascinated by the Universe? Would you like to contribute to the International Year of Astronomy? One of the goals of the International Year of Astronomy is to enable as many people as possible to experience the excitement of personal discovery that Galileo felt when he first saw lunar craters and mountains, the moons of Jupiter and other celestial wonders. The aim is to encourage us all to think about how observations of the cosmos around us force us to reconsider our understanding of the natural world.

#### **If you are a newcomer or an astronomy enthusiast...**

If you are a beginner and would like to get some advice, contact your IYA2009 National Nodes, a local astronomy club, planetarium or science museum. A list of the IYA2009 National Nodes can be found on: [www.astronomy2009.org](http://www.astronomy2009.org). A list of other astronomy organisations worldwide can be found on: <http://skytonight.com/community/organizations> or <http://www.astronomyclubs.com>.

#### **If you are an amateur astronomer...**

For every professional astronomer, there are at least 20 amateur astronomers. The IAU is encouraging amateur astronomers to play a major role in the organisation of astronomy outreach activities. As an amateur astronomer, you can join a local astronomy club and plan some cool astronomy outreach activities. Lots of ideas can be taken from the IYA2009 activities pages — do not be afraid of adapting them to your own country's history and culture. Get in touch with science teachers in local schools and propose some practical activities for students involving observation of the sky. The 100 Hours of Astronomy Cornerstone project is a global event that all amateur astronomers should take part in. Watch its page on the IYA2009 website for information.

#### **If you are a professional astronomer...**

You can do all the above and contact your IYA2009 National Node (see [www.astronomy2009.org](http://www.astronomy2009.org)) or national astronomi-

cal societies for advice and new ideas on what can be done to promote astronomy in your region. You can coordinate activities with amateur astronomers, help to publish results and contribute to science.

#### **If you are an educator...**

You can find inspiration for activities, receive training through the Galileo Teacher Training Programme, and get assistance with relevant and exciting lesson plans that will take your students to another Universe.

#### **If you have a new idea...**

If you have a new idea and it is not listed in the national, regional and global activities pages, contact the Single Point of Contact in your own country and propose your ideas. Single Points of Contact are listed by country on the IYA2009 webpage: [www.astronomy2009.org](http://www.astronomy2009.org).

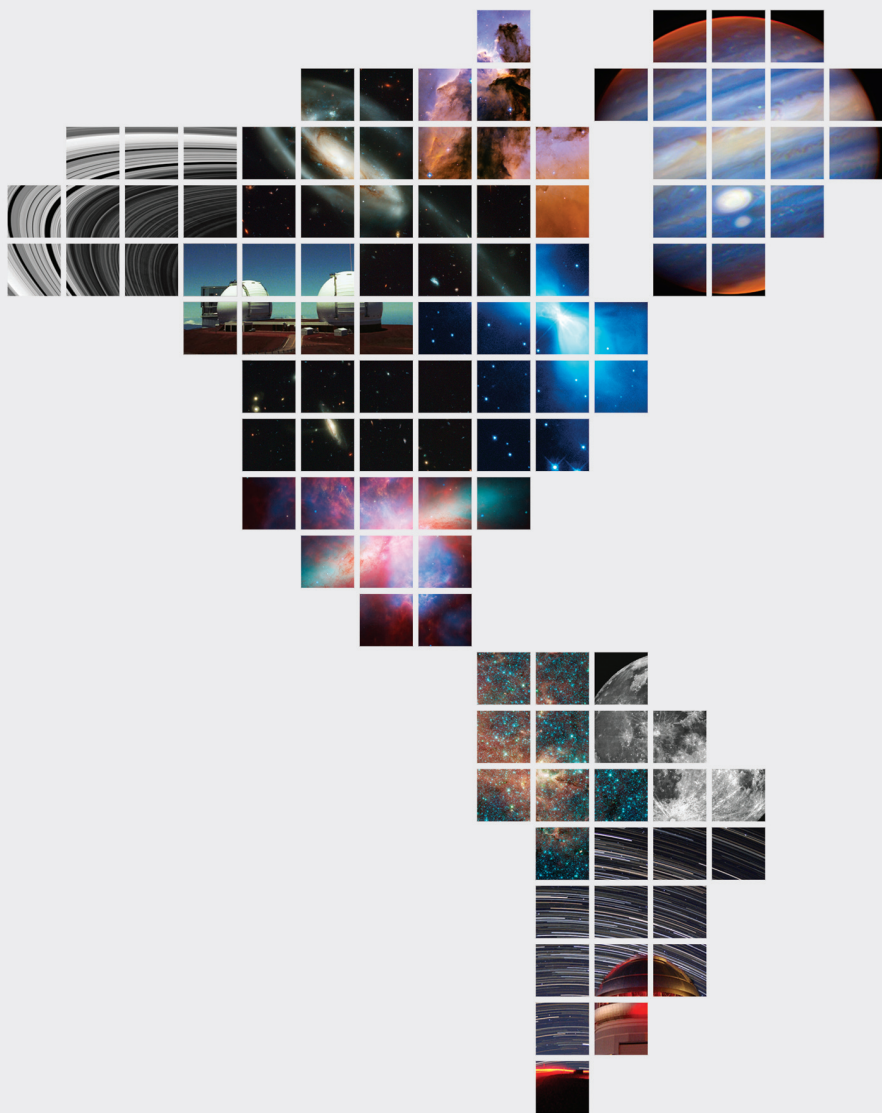
#### **If you want to be a partner in the IYA2009...**

There are unrivalled opportunities to partner the main IYA2009 events. Partners will receive enormous global exposure through the events themselves and through internet and media coverage. We envisage different levels of support. Each level can provide direct and significant support to IYA2009 financially, or can contribute through in-kind contributions. In return, the IYA2009 Partners will enjoy benefits assigned by the IAU IYA2009 in proportion to their specific contributions.

There are many countries and groups deeply involved in the IYA2009 project and thousands of activities are already underway. Please take some time to search the IYA2009 webpage. Feel free to contact us if you are interested in a specific activity. If you would like to know more about IYA2009 activities taking place in your country, please contact your national Single Point of Contact.



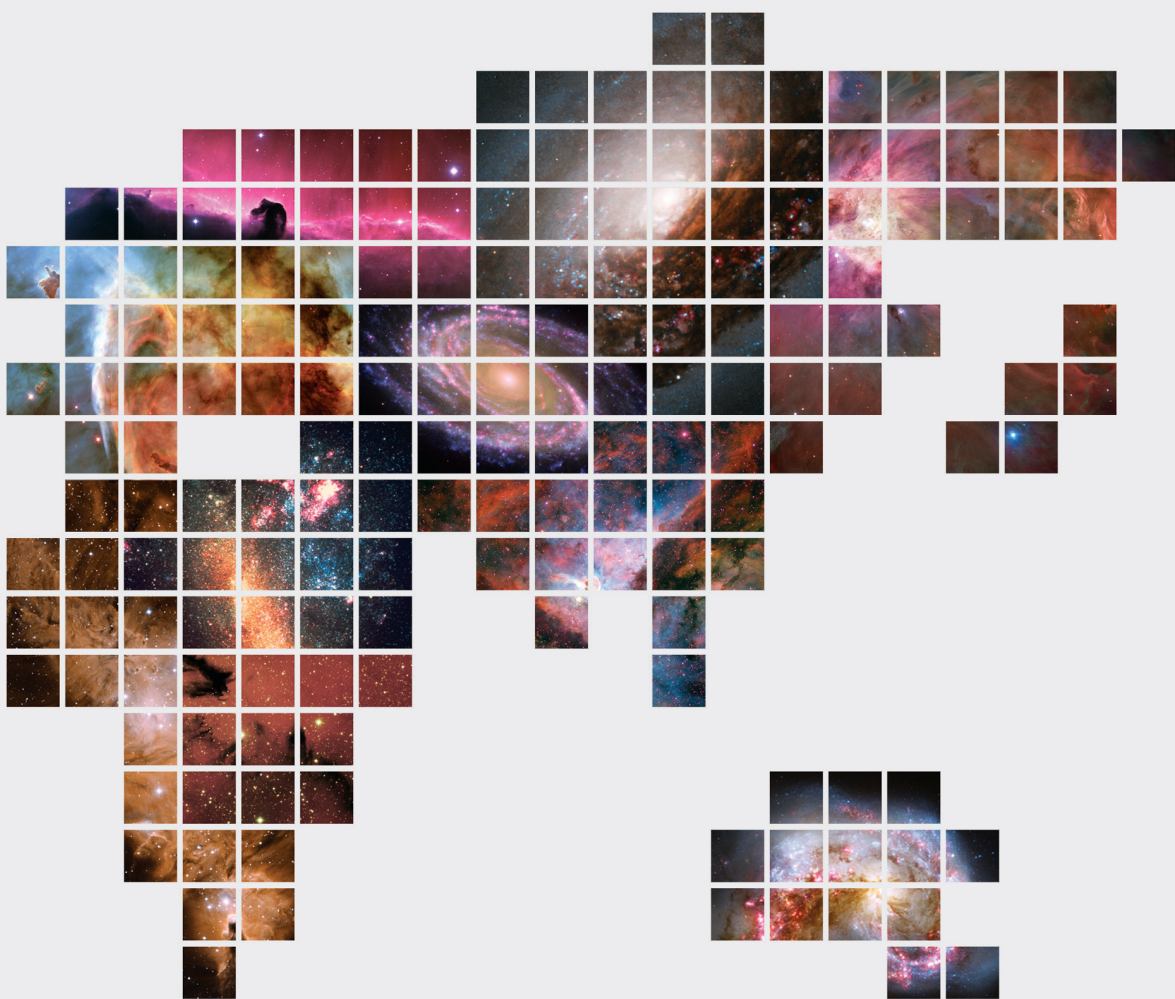
# The Universe, Yours to Discover





*Astronomy is one of the oldest fundamental sciences. It continues to make a profound impact on our culture and is a powerful expression of the human intellect.*

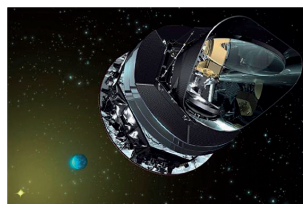
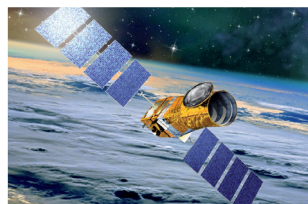
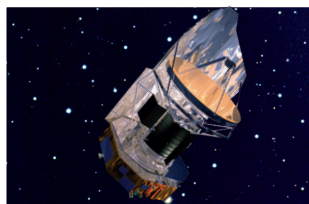
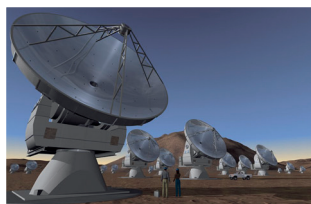
**Catherine Cesarsky**  
IAU President







Thales Alenia Space



# [www.astronomy2009.org](http://www.astronomy2009.org)

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