

# The COPUS Clarion

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*The Coalition on the Public Understanding of Science (COPUS) is a grassroots effort linking universities, scientific societies, science centers and museums, advocacy groups, media, educators, government agencies, businesses, and industry in a peer network having as its goal a greater public understanding of the nature of science and its value to society.*

## THE UNIVERSE: YOURS TO DISCOVER - AND TO SHARE

*Denise Smith, Space Telescope Science Institute*

*Mary Dussault, Harvard-Smithsonian Center for Astrophysics*

In 1609, Galileo trained his spyglass on the sky and began a series of observations that revealed wonders never before seen by humankind. Lunar mountains and craters; four moons orbiting Jupiter; the phases of Venus; the cloudy Milky Way resolved into dense swarms of stars—these discoveries would forever change our view of our place in the universe. Galileo's observations and his role in the birth of modern, evidence-based science are all of huge historical and cultural importance.

Only occasionally, however, do we reflect on the role that Galileo and the telescope played in making the universe—and science itself—accessible to scientists and the public alike. Anyone who could create or obtain a telescope of sufficient quality was able to see what Galileo saw. They were able to discover the universe for themselves. Galileo's passion to inform both the scientist and the layperson, coupled with public demonstrations of the telescope and the revolutionary nature of the observations themselves, created a profound impact on science and culture that continues today.

In this Year of Science 2009, each of us has an opportunity to follow in Galileo's footsteps by participating in the International Year of Astronomy (IYA), a global celebration of astronomy initiated by the International Astronomical Union and the United Nations Educational Scientific and Cultural Organization (UNESCO). As it honors the 400th anniversary of Galileo's first telescope observations, IYA offers myriad opportunities to discover the universe for ourselves, and to share its wonders with our students, colleagues, neighbors, friends, and families. The goals of IYA are in perfect synergy



Image by: Pete Ashton, Creative Commons



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with the COPUS Year of Science, as it seeks to inspire interest in science by enabling as many people as possible to experience—and share—the excitement of personal discovery that Galileo felt when he first spied those cosmic wonders.

How can you participate in this global event? Like the Year of Science, IYA is being carried out via collaborations and grass-roots efforts between professionals and amateurs, science communicators, educators, science centers, and budding astronomy enthusiasts from all walks of life. In the U.S., major supporters include the American Astronomical Society, National Optical Astronomy Observatory, Astronomical Society of the Pacific, Astronomical League, American Association of Variable Star Observers, the National Science Foundation (NSF), and National Aeronautics and Space Administration (NASA), and all of these organizations have created

resources, toolkits, and programs to help you be your own Galileo—and to share the universe with others. You can find these resources and many ideas on the websites dedicated to international, U.S., NASA, and IYA astronomy initiatives. To explore and get involved, visit:

- <http://astronomy2009.org>
- <http://astronomy2009.us> (*explore the Getting Involved section!*)
- <http://astronomy2009.nasa.gov>

### HERE ARE JUST A FEW OF THE MANY RESOURCES AND OPPORTUNITIES FOR DISCOVERING THE UNIVERSE:

#### ✧ It's Your Universe—Make Your Own Observations

From naked-eye, backyard observing to using your computer to control online robotic telescopes, there are a variety of ways to bring out your inner Galileo. You can find simple guidance on observing the IYA "Object of the Month" in the Go Observe! section of the NASA IYA website (<http://astronomy2009.nasa.gov>). The Astronomical Society of the Pacific, NASA, and their Night Sky Network of astronomy clubs partnered to create a wonderful series of "IYA Discovery Guides" that contain observing tips for the Monthly Observing Objects and hands-on activities that are great to use at star parties to explore featured astronomical themes (<http://www.astrosociety.org/iya/guides.html>).



Image Credit: Dark Skies Awareness.

If you're looking for a telescope during 2009, consider the Galileoscope ([www.galileoscope.org](http://www.galileoscope.org)), developed as part of an IYA global cornerstone project to provide a low-cost, high-quality telescope that would allow millions of people worldwide to see what Galileo saw. The Galileoscope not only provides an excellent first experience with lunar craters, the moons of Jupiter, and phases of Venus, but because it is

a kit and a self-contained optical bench, it facilitates educational exploration of the principles of optics. Many amateur astronomy clubs, including Night Sky Network members (<http://nightsky.jpl.nasa.gov>), will also be providing opportunities to look through a telescope. Consider partnering with a local club to bring telescopes to your community, or attending an event held at the club location itself. Better yet, become a member yourself!

If you do not have access to a telescope or amateur astronomy club, celebrate IYA by using the MicroObservatory online telescope network to repeat Galileo's observations or to take your own telescope images of a variety of celestial objects. (Your MicroObservatory image will be emailed to you within 48 hours for free!) (<http://mo-www.cfa.harvard.edu/OWN>; <http://microobservatory.org>)

#### Bringing the Cosmos to the Public—Community Events

In addition to observing events, many communities will have exciting collections of astronomical images on display. *Visions of the Universe: Four Centuries of Discovery* ([www.ala.org/visionsoftheuniverse](http://www.ala.org/visionsoftheuniverse)), a traveling exhibit for public libraries, uses breath-taking imagery from the Hubble Space Telescope and other NASA space science missions, along with historical drawings and sketches to illustrate how our knowledge of the universe and the objects within it has changed over the past 400 years. (Check the American Library Association web site for tour locations.). Consider working with a local partner to create your own *Visions* exhibit by downloading and printing high-resolution poster-sized files of the 12 exhibit panels that are available at <http://amazing-space.stsci.edu/visions>.

You'll also want to be sure to check out *From Earth to the Universe*, an IYA global cornerstone project that is designed to bring stunning views of the cosmos afforded by today's ground-based and space-based telescopes to nontraditional venues such as airports, public parks, festivals and more. The image exhibition will appear in several locations across the United States, and the image collection itself is available online to members of the public who would like to work with local partners to create an exhibition for their local community (<http://fromearthtotheuniverse.org>).

Whatever route you choose, helping others to discover the universe for themselves during 2009—and in doing so, sharing your passion for science—can and will make a difference to the success of efforts like IYA and the Year of Science, and in reaching your personal goals for science education.

**DON'T MISS THESE YoS 2009**  
HIGHLIGHTS CELEBRATING JULY'S  
THEME OF ASTRONOMY!

**YEAR** 2009  
*of* **SCIENCE**  
Explore. Empower. Engage...

- ✧ 40th anniversary of the first human footprints on the moon – July 20th.
- ✧ NASA and many science organizations across the country will be hosting special programs to mark this “giant leap for mankind.”  
[http://www.nasa.gov/mission\\_pages/apollo/40th/index.html](http://www.nasa.gov/mission_pages/apollo/40th/index.html)
- ✧ **Capture the Colorful Cosmos: An IYA Astrophotography Project – July to September 2009**  
The Harvard-Smithsonian Center for Astrophysics (CfA), NASA, and the Association of Science-Technology Centers (ASTC) are collaborating on this project. Capture the Colorful Cosmos will give members of the public online access to the CfA's MicroObservatory robotic telescopes, to take and colorize their own images of stars and galaxies the same way that professional astronomers do. Participating museums, nature centers, libraries, and other informal education organizations will run public workshops that result in exhibitions of original visitor-created astrophotography displays. The images and displays will be featured at the participating institutions, and on ASTC, IYA, and NASA web sites.
- ✧ **Informal Educators:** To participate in a July ASTC online workshop and learn how to implement Capture the Colorful Cosmos, visit <http://www.universeforum.org/iyacosmos/>
- ✧ **Teachers, Students, Families, and Individuals:** You too can use the MicroObservatory robotic telescopes to participate in the Capture the Colorful Cosmos project. Find out more at: <http://www.universeforum.org/iyacosmos/>

Questions? Comments? Ideas? Contact [admin@copusproject.org](mailto:admin@copusproject.org).

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