

Windows to the Universe

A Global Geoscience Educator Community

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Windows to the Universe Website

www.windows.ucar.edu

Comprehensive geoscience education website and professional development program; >12 million users per year

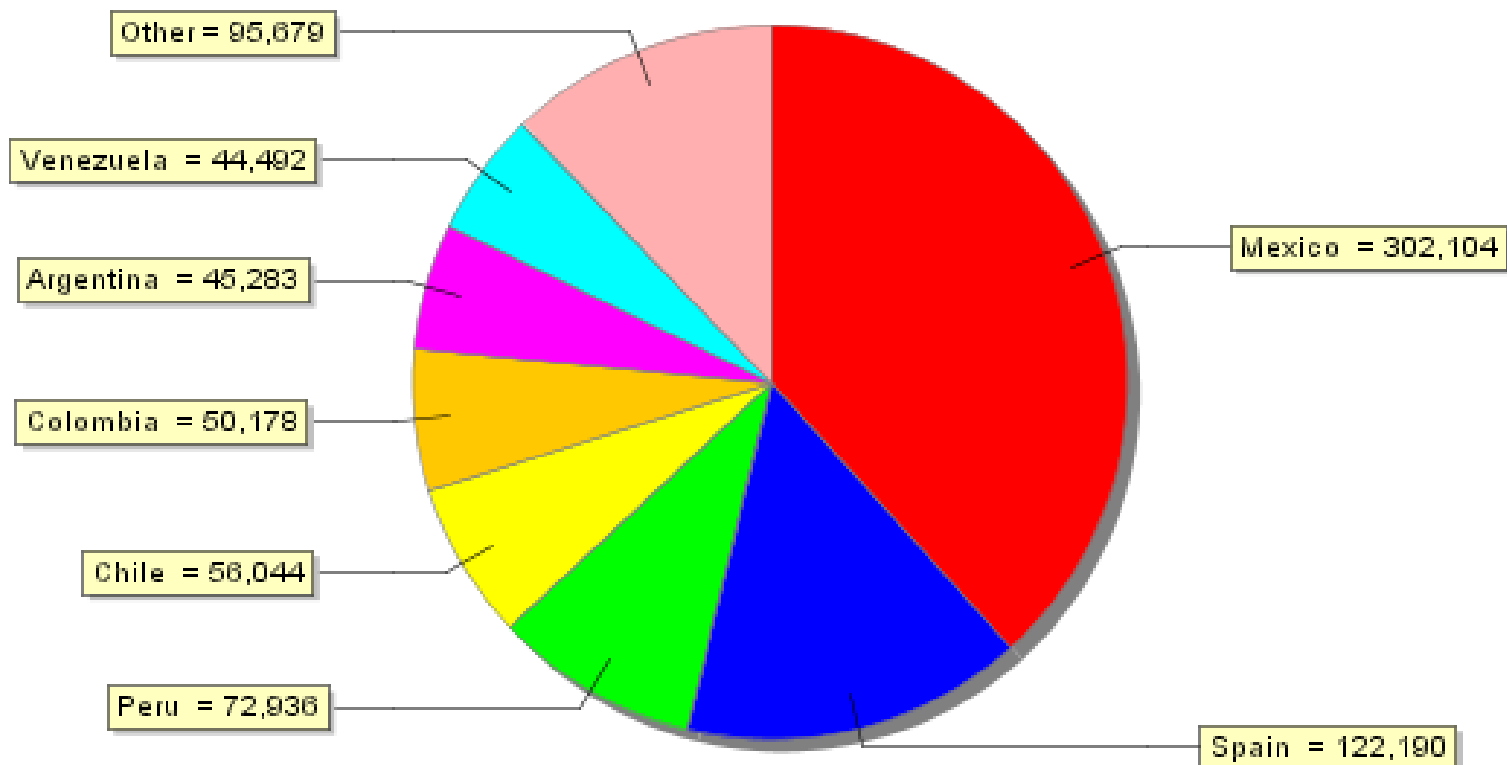
- Formal and informal
- Science in interdisciplinary context, links to humanities
- 3 levels of content
- Bilingual, toggle allows users to switch on the fly (language acquisition)
- Classroom activities, interactives, journal, games
- Professional development workshops reach ~1400 educators per year
- Global community of ~2500 educators



- Some Metrics:
 - ~65% of users are K-12 students
 - 46% once per week or more
 - 2-5000 visits to *Teacher Resources* per day during work week
 - ~50,000 users per day, including ~15,000 to Spanish website

Other Countries

Sessions: 1/Sep/2005 - 30/Nov/2005



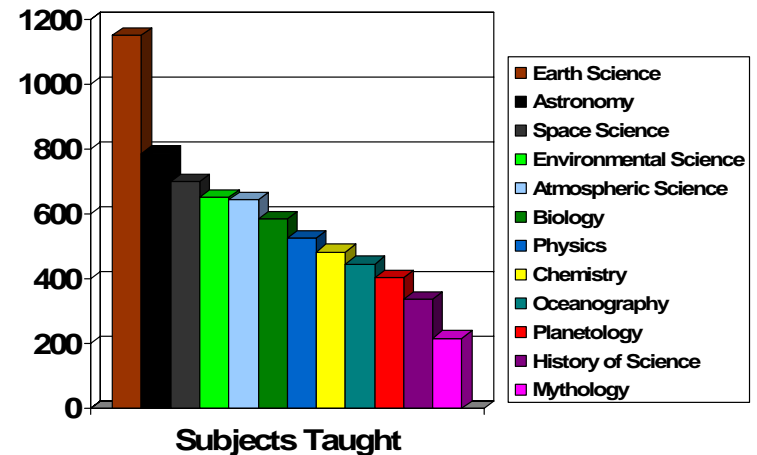
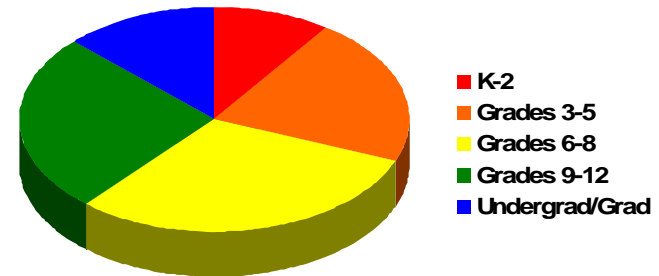
Major Website Sections

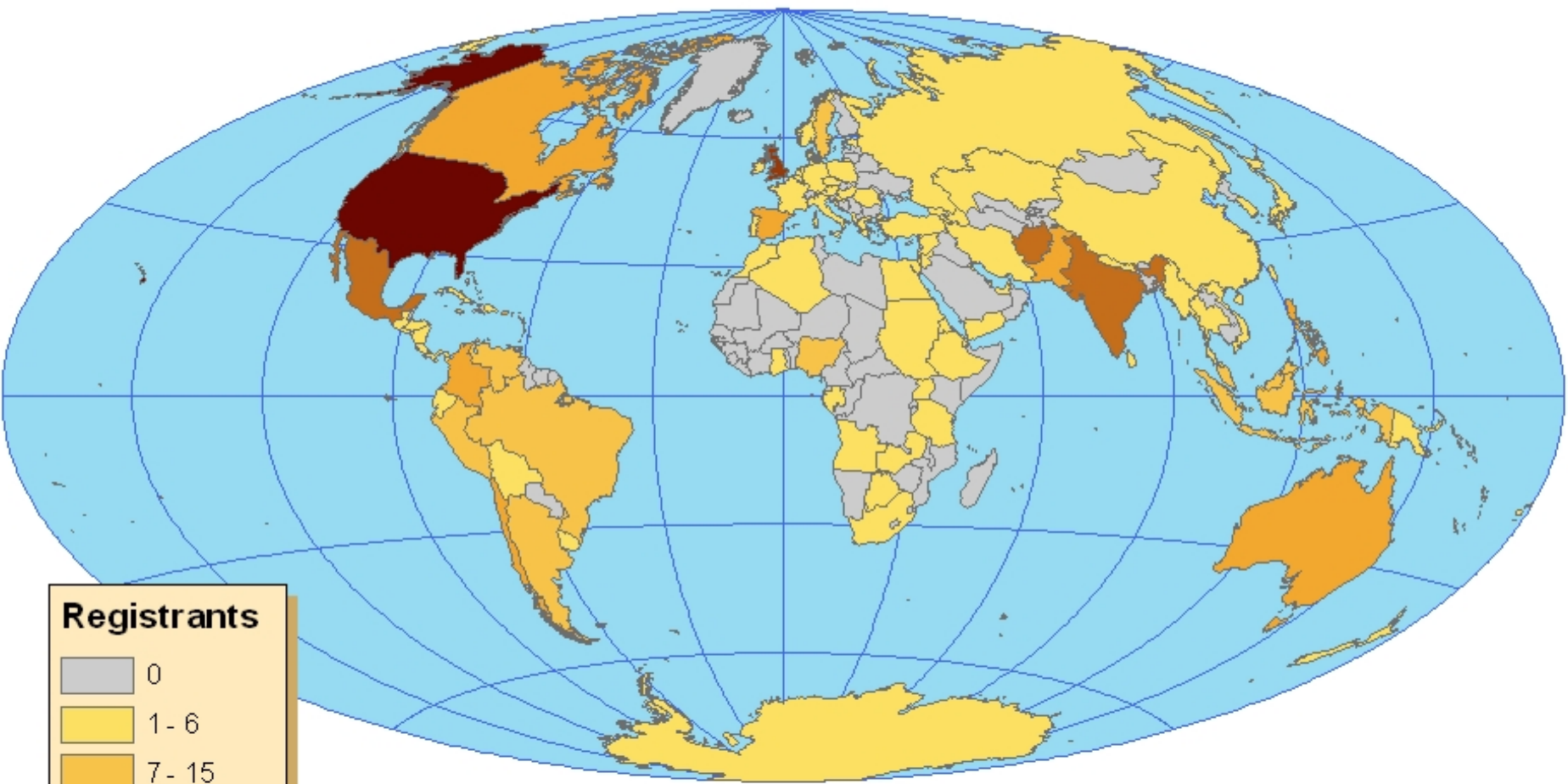
~7000 pages total

- Sun
- Mercury
- Venus
- Earth
- Mars
- Jupiter
- Saturn
- Uranus
- Neptune
- Pluto
- Comets
- Asteroids
- The Solar System
- Astronomy and the Universe
- Space Weather
- Space Missions
- Myths
- Art, Books, and Film
- History & People
- Geology
- Life
- Fundamental Physics
- Images and Multimedia
- Teacher Resources
- Journals
- Games
- Guided Tours
- Headline Universe

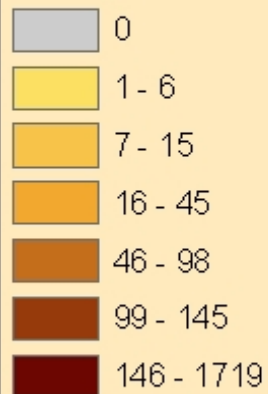
A Snapshot of our Educator Community

- Over 2500 members to date from 109 countries
- ~evenly distributed across K-12 grade levels
- Includes Educators teaching a wide range of subjects
- Over 300 educators are teaching bilingual classes or in Spanish





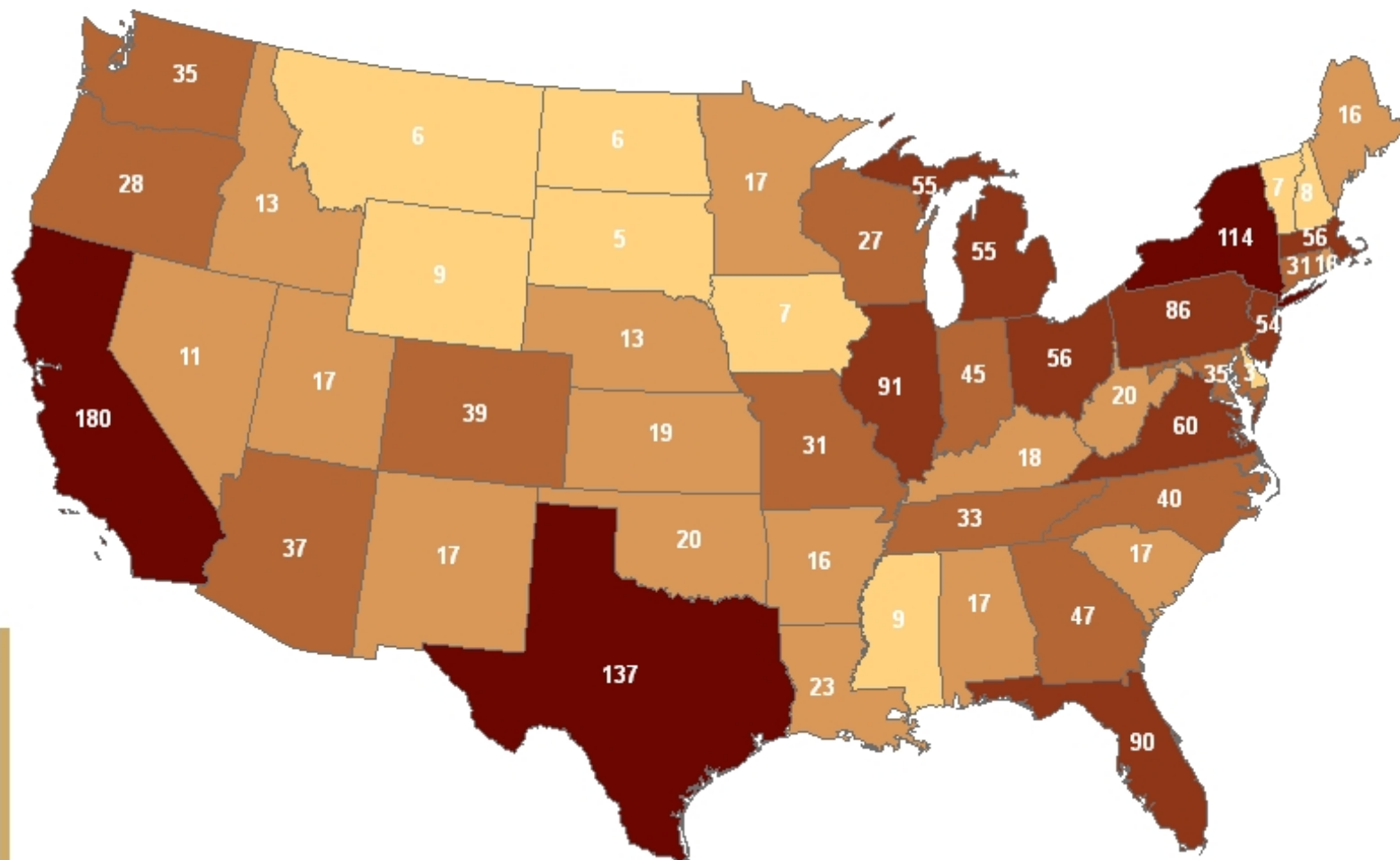
Registrants



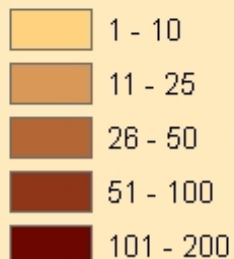
Windows to the Universe Educators Around the World
September 2005 – March 2006



Windows to the Universe Educators in the US September 2005 – March 2006



Registrants



Newsletter Contains...

- “Corners” that highlight content and activities on the website of interest to educators, as well as information about new resources soon to be released
- News about upcoming events for geoscience educators (workshops, field experiences, astronomical events, ...)
- Issued monthly at beginning of month

April 2006

Spring is a very active period for us here at Windows to the Universe. We have numerous sessions at the NSTA meeting in Anaheim (see the link below, in Lisa's Corner) April 6 - 9. We've been delighted with the [postcard reports from the field](#) provided by teachers and scientists working on the [MILAGRO](#) campaign studying air pollution in Mexico City. The [GLOBE at Night](#) program just finished a week of global observations of light pollution. Keep your eyes posted on these sites for information on the results of these projects!

Our Windows to the Universe Teacher community now includes over 2330 educators from 104 countries ranging from Afghanistan to Zambia, including 1638 teachers from the United States, 90 from India, 58 from Mexico, 43 from Canada, 42 from the United Kingdom, 28 from the Philippines, 23 from Spain, 22 from Australia, 21 from Puerto Rico, and 17 from Pakistan. Within the United States, we have 166 teachers from California, 124 from Texas, 107 from New York, 89 from Illinois, 85 from Pennsylvania, and 84 from Florida. Five more states have 50 or more registrants, 15 states have between 20 and 49, and 14 states have between 10 and 19.

As our global educator community continues to grow, the opportunity for sharing ideas and resources with each other becomes ever more promising. In our recent survey of this community, you overwhelmingly agreed that you'd like to have the opportunity to post to the newsletter and share ideas with each other. Over the next month we will begin planning ways for you to share your ideas with each other through the newsletter, so please keep your eyes on the newsletter and your email for news about this opportunity, when it becomes available!



Roberta's Corner

The global scientific community has reached consensus that global climate change is real, and will present challenges to us as we seek to adapt to the changing environments that will result from our warming world. Windows to the Universe has an entire section on [Climate and Global Change](#) that provides detailed information on our current understanding of these topics and the processes behind them. In addition, we have numerous [classroom activities](#) on the site that address this topic (which we provide training on at NSTA and other venues). Please feel free to check out these resources!



Randy's Corner

What's up in space? Well, there's been a lot going on around the Solar System of late. The latest mission to the Red Planet, called the [Mars Reconnaissance Orbiter](#) (MRO), recently swung into orbit around Mars and has begun a 6-month series of aerobraking maneuvers that will slow it down and lower it into a better orbit for observing the planet.

Further afield, the Cassini spacecraft that is orbiting Saturn has apparently discovered ice geysers spewing forth from the fractured terrain around the southern pole of [Enceladus](#), the sixth-largest moon of the ringed planet. If confirmed, the geysers would make Enceladus one of only four volcanically active (including cryovolcanism!) bodies yet found in our Solar System.

Back home on Earth, scientists studying the comet dust samples returned to Earth from Comet Wild-2 by the [Stardust spacecraft](#) were in for a surprise. They discovered minerals, including olivine, that form under high temperature conditions. That is NOT what they expected to discover in samples from those giant iceballs we call comets. The scientists now have a puzzle on

Marina's Corner

APRIL brings along a new [season](#) that invites all to go out and enjoy the marvelous weather! This month's full moon is on April 13th. But this is not just any full moon, this one is special. April's full moon is the first full moon after the vernal [equinox](#) (spring equinox in the Northern Hemisphere, fall in the Southern). It is known as [Full Pink Moon](#), a Native American Indian reference to the profusion of pink wildflowers that appeared at this time each year! Also, in the Northern Hemisphere, this month brings along the gentlest warmer winds of SPRING coming from the West and there is a [Greek God to honor them!](#)



Julia's Corner

Our last newsletter talked a lot about [the MILAGRO campaign](#) and "Postcards from the field" that we were hoping to get from scientists and teachers participating in this campaign. By the end of the campaign we had 34 great [postcards](#) from 7 participants. Read them for a glimpse of the everyday excitement of a field campaign, even including a few of the participants' weekend trips!



Michigan Earth Science Teachers Association 2006 Summer Field Conference

The Michigan Earth Science Teachers Association will hold their field conference from August 6-12, 2006 on the Upper Peninsula of Michigan. This geological field experience is designed for science teachers or science-teacher candidates. Two hours of graduate credit will be available through Michigan State University. Information about this opportunity is available through this

Introduction to Milagro - Mozilla Firefox

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http://www.windows.ucar.edu/tour/link=/milagro/milagro_intro.html

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Studying air pollutants in Mexico City, the world's second largest city.

MILAGRO MILAGRO

Megacity Initiative: Local and Global Research Observations

Spanish English

About MILAGRO Air Pollution Effects on US People Field Reports Research Results Kids! Educators Links Gallery

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Introduction to Milagro



This image shows the location of the country of Mexico and its capital, Mexico City. Mexico City is where the MILAGRO campaign will take place. Click on image for full size (437 Kb)

MILAGRO stands for Megacity Initiative: Local and Global Research Observations. What that really means is that a team of researchers from around the world is in Mexico City to study the atmosphere there. The MILAGRO field campaign started in March 2006.

During MILAGRO, the scientists are using [airplanes](#), radars, weather balloons, computers, and dozens of scientific [instruments](#) to study [the atmosphere](#) in and around Mexico City. Their purpose is to learn more about the [air pollution](#) that is given off by very large cities called [megacities](#).

Air pollution affects visibility, human health, agriculture, and [ecosystems](#). As cities around the world grow bigger than ever before, scientists are discovering that urban air pollution is powerful enough to affect Earth's [weather](#) and [climate](#).

The MILAGRO team is focusing on how the air pollution [particles](#) released inside Mexico City change as the [wind blows them](#) downwind of the city. They also want to understand how [chemistry in the atmosphere](#) changes the pollution as it moves away from the city.

The researchers hope they can apply what they learn in Mexico City to other megacities around the world. They chose to hold MILAGRO in Mexico City because it ranks among the world's top three largest cities and has very polluted air.

Many people aren't familiar with field campaigns like MILAGRO. A field campaign is when a team of researchers—usually scientists, technicians, engineers and more—undertakes a large scientific research project in a certain location. Field campaigns can be large, lasting for weeks and involving many different people and different scientific instruments. After the campaign, the researchers often spend months and even years analyzing the data they got during the project.

Studying air pollutants in Mexico City, the world's second largest city.

MILAGRO
Megacity Initiative: Local and Global Research Observations

Spanish English

About MILAGRO Air Pollution Effects on Us People Field Reports Research Results Kids! Educators Links Gallery

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Postcards from the Field

MILAGRO

Dr. Dara Salcedo



From: Dara Salcedo
TO, March 20, 2006



Map of Mexico City

Here is a map of the Valley of Mexico, where Mexico City is situated. As you can see, Mexico City is surrounded by mountains in the south, east and west, which is very unfortunate because the mountains make it very difficult for the [wind](#) to vent the city. Hence, all the emissions from cars and industries are trapped within the valley and [air pollution](#) can reach very high levels.

Towards the south, on the other side of the mountains, is Cuernavaca, where I live.

[Air Pollution Sources](#)

GLOBE at Night

Home Learn Observe! Report Map

For Students For Teachers For Parents

Thank you for joining this Star-Hunting Party!

Students and families participated in this worldwide campaign on March 22-31, 2006 to observe and record the magnitude of visible stars as a means of measuring light pollution in a given location. Download the GLOBE at Night [Family Activity Packet](#) (English or Spanish). The online [reporting](#) form will be active through April 7, 2006. Please report your observations!

[Subscribe](#) to the GLOBE at Night mailing list to receive updates and results of this campaign!

The final count of observations reported will be announced on April 10th, 2006. Currently, there are:

What does your nighttime sky look like? Are you observing light pollution in your sky?*

Now in [Spanish](#).

Drag the Magnitude slider left and right to make more (left) or less (right) light pollution. Drag the Latitude slider up and down to change the view of Orion to match the sky as seen from your location on Earth.

How does the amount of background light pollution affect your ability to see the fainter stars in the constellation Orion?

Magnitude limit = 4

Observation count: 4067

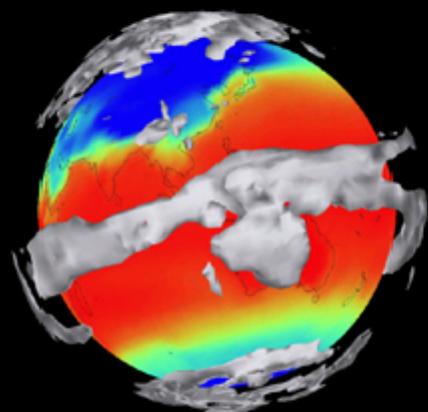
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CLIMATE AND GLOBAL CHANGE



[What Is Climate?](#)



[What Controls the Climate System?](#)



[Climates of the Past \(Paleoclimates\)](#)



[Effects of Climate Changes Today](#)



[Modeling the Future](#)



[Atmospheric Missions](#)



[Climate News](#)

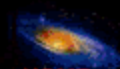


[Climate Images](#)



[Climate Web](#)

Warm near that equator and cold at the poles, our planet is able to support a variety of ecosystems because of its diverse climates. Earth's climates have changed incredibly during its 4.6 billion year history. Today, the changes are happening more quickly as natural processes are combined with the affects of human actions.



Search

Kids



Sun



Venus



Mars



Jupiter

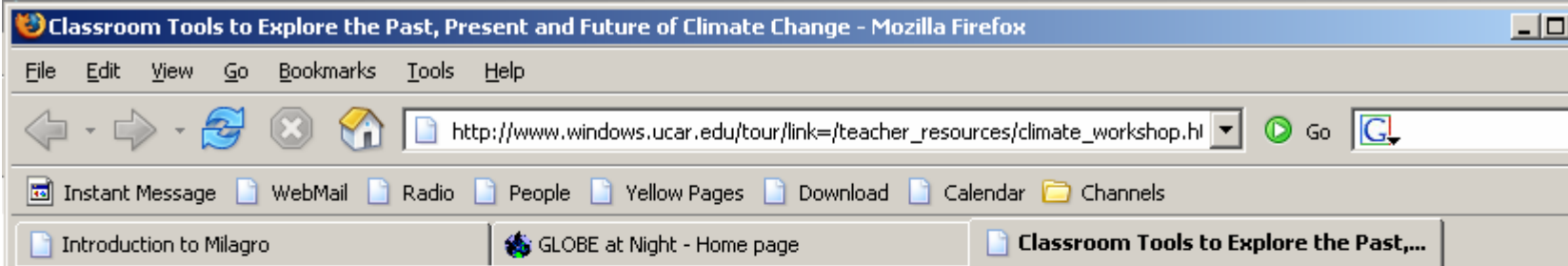


Uranus



Pluto





Windows to the Universe

[Beginner](#)[Intermediate](#)[Advanced](#)[Educators:](#)[Help us help you!](#)

Classroom Tools to Explore the Past, Present and Future of Climate Change



Workshop participants!
Click on image for full size (37 Kb)
Windows

Welcome to the online resources for our ever-popular NSTA workshop! This web portal is intended to provide the web links and additional information to those who attended our workshop at a recent NSTA convention.

Workshop Resources

[Presentation \(powerpoint\)](#)

Activities:

[CO2 Sources and Sinks](#)

[Paleoclimates and Pollen](#)

[Thermal Expansion and Sea Level Rise](#)

[Mapping Ancient Coastlines](#)

Additional Resources

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http://www.windows.ucar.edu/tour/link=/teacher_resources/teach_CO2.html

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WINDOWS TO
THE UNIVERSE

Teacher Resources
Lesson Plans and Activities for the Classroom
www.windows.ucar.edu



Title:	Carbon Dioxide - Sources and Sinks
Summary:	Students will use a chemical indicator (BTB) to detect the presence of carbon dioxide.
Source:	<i>Adapted from Global Climates - Past, Present, and Future. EPA Report No. EPA/600/R-93/126</i>
Grade level:	7 - 10
Time:	<p>This activity requires careful preparation including some set-up the previous day. It is recommend that the directions be read carefully before beginning this activity.</p> <ul style="list-style-type: none"> • Materials preparation: 40 minutes • Class time: 40 minutes • Discussion & review: 30 minutes
Student Learning Outcomes:	<ul style="list-style-type: none"> • Students will be able to explain the concept of 'sources' and 'sinks' as they relate to carbon dioxide. • Students will understand the use of an indicator solution (BTB) to reveal the presence of carbon dioxide. • Students will understand the qualitative differences between animal and fossil fuel sources of global carbon dioxide.
Lesson format:	Laboratory Experiment
National	5-8 Content Standard D: Structure of the Earth Systems

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Educators:

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Mars Reconnaissance Orbiter



The Mars Reconnaissance Orbiter (MRO) might look like this as it orbits Mars.

**Click on image for full size
(60 Kb JPEG)**

Image courtesy NASA/JPL-Caltech.

Mars Reconnaissance Orbiter (MRO) is a robot spacecraft that is orbiting [Mars](#). It will study Mars from orbit. It will take lots of pictures and gather lots of data about Mars.

MRO is a big spacecraft. It is [bigger than other Mars orbiters](#) that went to Mars before MRO. MRO also has never flown on mission to another planet. That camera is called HiRISE (High Resolution Imaging Science Experiment). [Earlier Mars orbiters](#) could spot objects on Mars the size of a dinner table. HiRISE will zoom in to spot a golf ball.

MRO has two other cameras. One of those cameras, plus an instrument called a radiometer, will study Mars' surface. MRO also carries another instrument called a spectrometer. The spectrometer will make a map of the [minerals](#) on Mars. MRO also has a radar that will search for [ice underground](#) on Mars.

MRO will make better maps of Mars. It will help scientists decide where future missions to Mars should go. It will also help decide where the first people who go to Mars should land!

Full Moon Names - Mozilla Firefox

File Edit View Go Bookmarks Tools Help

http://www.windows.ucar.edu/tour/link=/earth/moon/full_moon_names.html

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Introductio... GLOBE at Ni... Classroom ... Windows to... Seasons The Vernal ... Full Moon N... Full Moon ...

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The Many Names for the Full Moon



The Full Moon in January is called the Wolf Moon. It is named after the hungry packs of wolves that howled at night. Click on image for full size (60K JPEG) Windows to the Universe original artwork by Randy Russell.

Sometimes, in the fall, you may hear people call a [Full Moon](#) the "Harvest Moon". That's because farmers can stay in their fields late, after sunset, harvesting their crops by the bright light of a Full Moon. Did you know that there are special names for the Full Moon during each month of the year?

The names for the Full Moon were made up by the Algonquian tribes of Native Americans. Most of the Algonquian people hunted and fished to get food, but some also grew crops. The names they had for the Moon are related to nature & the [seasons](#), hunting & fishing, and farming. The Algonquian people lived all over the northern and eastern parts of North America. When settlers from Europe met up with them, some of the settlers started using most of the same names for the Full [Moon](#).

The table below lists the names the Algonquian people used for the [Full Moon](#) during different months of the year.

Month	Moon name	Why that name?
January	Wolf Moon	Hungry wolf packs howled at night

New Features

- Adding opportunity for sharing curriculum activities, lessons learned, etc within community through newsletter
- Happy to highlight events and opportunities associated with your programs in your countries, and/or global to the community as well
 - Be in touch!



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general meeting questions

amsmtgs@ametsoc.org

technical questions about submitting abstracts

ams@confex2.com**Abstract Deadline:**
28 February 2006**Call for Papers****Online Submission of Abstracts****Online Registration****Paper Pre-Registration Form** (PDF)**Program****General Information** (PDF)**Author Instructions** (PDF)**Conference Site Information** (PDF)**Registration Information** (PDF)**Accommodation Information** (PDF)**Local Area Information** (PDF)**Transportation Information** (PDF)

Seventh International Conference on School and Popular Meteorological and Oceanographic Education

3-7 July 2006, Boulder, Colorado, USA

The Seventh International Conference on School and Popular Meteorological and Oceanographic Education (EWOC 2006) will be hosted by the University Corporation for Atmospheric Research and co-sponsored by the American Meteorological Society, the Australian Meteorological and Oceanographic Society, the European Meteorological Society, the Royal Meteorological Society, the World Meteorological Organization and other meteorological and oceanographic societies from around the globe.



* EWOC = Education: Weather, Oceans, Climate

The focus of this conference will be on education and outreach initiatives pertaining to weather, ocean and climate. Possible topics for sessions include:

- The role of learned societies in educational outreach
- Enhancing public awareness of meteorology and oceanography through the media
- Teacher training
- Business and education partnerships for meteorology and oceanography
- Student-centered educational programs
- Cyberinfrastructure and computer-based learning for meteorology and oceanography
- Science, society and schools
- Education and outreach for the coastal and marine environment
- Indigenous perspectives of weather, climate and oceans
- Promoting diversity and enhancing the involvement of under-represented groups in meteorology and oceanography
- Informal education for meteorology and oceanography
- International education programs and collaborations.

Workshops and demonstrations on meteorological and oceanographic topics which

For more information:

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