

Pegasus

The BCAAS Newsletter

Berks County Amateur Astronomical Society



President's Message

Spring is here! Time to get out and enjoy the great outdoors. Be sure to save some energy from gardening and lawn work to get out on a warm evening to look at the sky.

Spring time in this hemisphere has the Milky Way galaxy we live in tilting towards the horizon, so the thinnest part of the galaxy disc is now directly overhead, allowing us to look beyond our home galaxy better and glimpse our neighboring galaxies.

Take a pair of binoculars, aim them towards the bowl of the Big Dipper in the north, and you may see some of our "neighbors", M81 and M82, are bright enough for bino's, and looking high in the southern sky about 10 pm in the constellation of Virgo will reveal many "faint fuzzies". Several HUNDRED are visible in Virgo with the right telescope.

If these elude you, come join us at a club star watch this spring or summer and we will help you find them. This part of our

hobby, of "virtual" discovery, can be very exciting and enjoyable. It is many times the reason folks stay in the hobby as long as they do. Don't miss it!

If you like to interact with the public, who may have little knowledge of the sky, join us at the Heritage center on May 9th for a public event. Bring any equipment you have, and don't feel embarrassed to ask questions about using a telescope or how to find things in the sky. You will probably be surrounded by folks who know less than you do, so no question is a "dumb" question.

Dave Brown, President

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Tracking Wildlife From Space

by Patrick L. Barry

It's 10 o'clock, and do you know where your Oriental Honey Buzzard is?

Tracking the whereabouts of birds and other migrating wildlife across thousands of miles of land, air, and sea is no easy feat. Yet to protect the habitats of endangered species, scientists need to know where these roving animals go during their seasonal travels.

Rather than chasing these animals around the globe, a growing number of scientists are leveraging the bird's-eye view of orbiting satellites to easily monitor animals' movements anywhere in the world.

The system piggybacks on weather satellites called Polar Operational Environmental Satellites, which are operated by the National Oceanic and Atmospheric Administration (NOAA), as well as a European satellite called MetOp. Sensors aboard these satellites pick up signals beamed from portable transmitters on the Earth's surface, 850 kilometers below. NOAA began the project—called Argos—in cooperation with NASA and the French space agency (CNES) in 1974. At that time, scientists placed these transmitters primarily on buoys and balloons to study the oceans and atmosphere. As electronics shrank and new satellites' sensors became more sensitive, the transmitters became small and light enough by the 1990s that scientists could mount them safely on animals. Yes, even on birds like the Oriental Honey Buzzard.

"Scientists just never had the capability of doing this before," says Christopher O'Connors, Program Manager for Argos at NOAA.

Today, transmitters weigh as little as 1/20th of a pound and require a fraction of a watt of power. The satellites can detect these feeble signals in part because the transmitters broadcast at frequencies between 401 and 403 MHz, a part of the spectrum reserved for environmental uses. That way there's very little interference from other sources of radio noise.

"Argos is being used more and more for animal tracking," O'Connors says. More than 17,000 transmitters are currently being tracked by Argos, and almost 4,000 of them are on wildlife. "The animal research has been the most interesting area in terms of innovative science."

For example, researchers in Japan used Argos to track endangered Grey-faced Buzzards and Oriental Honey Buzzards for thousands of kilometers along the birds' migrations through Japan and Southeast Asia. Scientists have also mapped the movements of loggerhead sea turtles off the west coast of Africa. Other studies have documented migrations of wood storks, Malaysian elephants, porcupine caribou, right whales, and walrus, to name a few.

Argos data is available online at www.argos-system.org, so every evening, scientists can check the whereabouts of all their herds, schools, and flocks. Kids can learn about some of these endangered species and play a memory game with them at spaceplace.nasa.gov/en/kids/poes_tracking.

This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.

The ARGOS program tracks the whereabouts of endangered migrating animals via miniature transmitters on the animals and the POES satellites in orbit.



Spotlight on the “Projects” Section of The Space Place

Easy experiments to demonstrate concepts such as atmospheric pressure, stereoscopic vision, and ionization are some of the hands-on activities in the “**Projects**” category on The Space Place.

There are also art projects to express the beauty of the planets—including Earth—the stars, and the galaxies. Know a child who likes to build models? How about a balloon-powered Asteroid Nanorover? Or how about hanging out in the kitchen and making (then eating) Asteroid Potatoes, El Niño Pudding, or a Tortilla Spacecraft?

Our most popular project is the Star Finder. Star Finders are “dressed up” star maps, one for each month, that kids print, cut out, and fold into the familiar “fortune teller” shape and use to play a constellation-finding game.

All these projects and more are accompanied by short, readable explanations, with lots of colorful and compelling illustrations of the concepts modeled in the activity.

May 10, 2008:

National Astronomy Day

Meet Michelle Thaller, enthusiastic astronomer, on Space Place Live! —a cartoon “talk show” guest starring scientists and engineers, who talk about their work and why they love it.

May 14, 1804:

Lewis and Clark began their journey of exploration.

If only they had a satellite’s view of North America, it would have saved them a lot of trouble.

May 18, 1980:

Mt. St. Helens erupted, blowing off its whole top.

May 29, 1917:

John F. Kennedy was born.

It was President Kennedy who, on May 25, 1961, set the goal of putting an American on the Moon before the end of the 1960s.

New and improved
NASA Space Place features—
check them out today!

An E-mail to the Editor

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My full name is Tom Dehel, I have been an amateur astronomer for years, have been lucky enough to study the ionosphere for my job, and I have been published at COSPAR and NewScientist - see <http://space.newscientist.com/channel/astronomy/astrobiology/dn9601> if you are interested - that's why I really think that there should be life on Mars.)

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As you may know, Phoenix is scheduled to land on Mars May 25th. Although the event is not receiving much attention in the public, I think there is a real chance that it will happen upon an obvious sign of bacteria or similar life on Mars. This would be truly an historic day for mankind. (Reasons are in the book "Imminent Discovery" - mostly the observations of pre-1965 astronomers like Earl Slipher, and the many decades of evidence that bacteria can survive well on Mars.)

I'd like to collect the thoughts and expectations from amateur astronomers, space scientists, and the general public before May 25th (what I think will be discovery day, but if not then, shortly after). I hope this will be the final collection of the thoughts of mankind on the prospects of life on other planets *before* that discovery is actually made. If you would care to leave your thoughts on whether you expect Phoenix to find life, or whether you think there is life on Mars, or any related comments, you could go to the blog site: <http://blog.gomarsgo.com/>

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You don't need to enter email addresses or names or anything - initials would be fine - but insert your club name).

Whichever club returns the most comments will get two free signed copies of "Imminent Discovery".

Competition ends when one club returns 10 comments (from 10 different persons), or May 24th. Currently Brevard Astronomical Society is in the lead.

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This image, from Crabtree & Company, celebrates the 50th anniversary of NASA.

“Over the next year, NASA will celebrate 50 years of scientific and technological excellence. NASA has powered us into the 21st century through signature accomplishments that are enduring icons of human achievement. Among those accomplishments are technological innovations and scientific discoveries that have improved and shaped our lives on Earth in a myriad of ways. Please join us as we celebrate the past and look forward to a promising new era of inspiration, innovation, and discovery.”

Take a moment to surf on over to <http://www.nasa.gov/50th/home/index.html> and join NASA in celebrating their 50th year.

View a historical timeline, browse through the NASA images of the day, or play fun learning games with your children at NASA Kid’s Club!

There are special events, new features, contests, and much more! Happy 50th, NASA!



Get Your Gummy Greenhouse Gases!

Making science edible--and sweet--is a reliable way to attracts kids' interest. The new "Gummy Greenhouse Gases" activity on The Space Place web site makes it fun and easy to learn a bit of chemistry and to find out why too many of these kinds of molecules in the air are likely to cause Earth to get warmer.

At <http://spaceplace.nasa.gov/en/kids/tes/gumdrops>, kids use gumdrops and toothpicks to make simple molecules of ozone, nitrous oxide, carbon dioxide, water vapor, and methane.

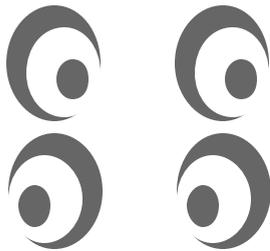
The curious can go on to <http://spaceplace.nasa.gov/en/kids/tes/gases> to learn more about the greenhouse effect and about the "good and bad" roles of ozone. A short video shows how new space technology can literally paint a 3-D picture of these gases all around the globe. Afterwards, the ghastly gases can be consumed (mind the toothpicks!), thus helping the environment.

Berks County Amateur Astronomical Society

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Hotline: 610-921-0173
Call us for all the
latest event details!

Visit us today at
www.berksastronomy.org



2008 Events Calendar

Thursday, May 8 at 7:30pm

BCAAS General Monthly
Meeting at the Reading Museum Auditorium. Program TBA.

Friday, May 9 at dusk

Public Starwatch at Berks
Heritage Center



Raindate: Saturday, May 11

This is also National
Astronomy Day!

Friday May 16 at 8:30pm
Star Watch for Wyomissing
Hills Elementary Students
hosted by Club member
Keith Minnich.



There will be many students and parents
attending this event. Club members wish-
ing to help, please bring your scope,
binoculars or knowledge to share.

Monday, May 26

Happy Memorial Day!



Thursday, June 12 at 7:30pm

BCAAS General Monthly
Meeting at the Reading
Museum Auditorium.
Program TBA.



Friday, June 20 at 7:59pm
Summer Solstice!!!