

Pegasus

The BCAAS Newsletter

Berks County Amateur Astronomical Society



President's Message

Hi everyone. After a slow start, summer is finally here. Thank you to those who attended the July program with Dr. Lucy McFadden. If you couldn't make it, you missed a terrific program. About 120 people attended. By the way, Dr. McFadden is one of the editors of the book "The Encyclopedia of the Solar System", which is published by Academic Press.

Mike and I recently went to the Franklin Institute to see the Galileo exhibit. We were both very impressed. Some of the instruments on display are works of art as much as they are scientific instruments. This is the first and only time this exhibit has been shown outside of Italy, so I highly recommend going to see it before it ends in September. If you are into science fiction, you can also see the Star Trek exhibit, which is also there until September. It was fun. You can find out more on the Franklin Institute website, www.fi.edu.

One of the cornerstone projects of the International Year of Astronomy is the Galileoscope. This is an inexpensive 2" refractor (\$15 plus s&h) that you assemble. The purpose is to enable people, schools or other organizations to afford a decent quality telescope. Mine just arrived in the mail and I will bring it to the picnic and club star watch if you want to check it out. For more information, go to the website www.galileoscope.org.

We have scheduled our annual picnic for Thursday, August 13, which is our regular meeting night. We will start at 5:30 pm at Dave Brown's farm, and plan to eat at 6. We decided to have it Thursday night instead of Saturday as

the Perseid meteor shower will still be going on, and Dave has invited those who want to stay up to watch from his dark skies. The peak is actually Wednesday night, but there should still be plenty zooming by on Thursday. Dave has also offered to have a hayride again.

Please bring a covered dish to share. I would also like to have a club star watch on Saturday, August 15 at the Flying Field. Of course, now that I say that it is sure to rain that night! Anyway, if it's clear I want to arrive around 7:30 to get set up as I want to try to catch Saturn and Mercury before they set. You don't need a telescope to attend – members with telescopes will be glad to let you look through theirs. If you need help with a telescope, bring it along and someone should be able to help you with it.

Directions to both Dave's farm and the Flying Field are on the website. If you need additional help, give me a call at 610-775-8925. One important note though – when you come to the Flying Field, please drive around the edge of the field – not through the middle. The field is used by the Berks Barnstormers for flying their radio controlled airplanes, and tire tracks make for rough landings!

We also have some public events coming up. See the schedule in this newsletter. All club members are invited to attend, and if you can bring a telescope to share, that would be appreciated.

I hope to see you soon!
Barb



Summer 2009

Volume 35, Issue 2

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SARSAT to the Rescue from NASA Space Place

If a plane crashes in the woods and nobody hears it, does it make a sound?

Never mind contemplating this scenario as a philosophical riddle. This can be a real life or death question. And the answer most of the time is that, even if no people are nearby, *something* is indeed listening high above.

That something is a network of satellites orbiting about 450 miles overhead. The “sound” they hear isn’t the crash itself, but a distress signal from a radio beacon carried by many modern ships, aircraft, and even individual people venturing into remote wildernesses.

In the last 25 years, more than 25,000 lives have been saved using the satellite response system called Search and Rescue Satellite-aided Tracking (SARSAT). So what *are* these life-saving superhero satellites? Why they are mild-mannered weather satellites.

“These satellites do double duty,” says Mickey Fitzmaurice, a National Oceanic and Atmospheric Administration (NOAA) systems engineer for SARSAT. “Their primary purpose is to gather continuous weather data, of course. But while they’re up there, they might as well be listening for distress signals too.”

In February, NASA launched the newest of these Polar-orbiting Operational Environmental Satellites (or POES) into orbit. This new satellite, called N-Prime at launch and now dubbed NOAA-19, prevents a gap in this satellite network as another, aging NOAA satellite reached the end of its operational life.

“The launch of N-Prime was a big deal for us,” Fitzmaurice says. With N-Prime/NOAA-19 in place, there are now six satellites in this network. Amongst them, they pass over every place on Earth, on average, about once an hour.

To pinpoint the location of an injured explorer, a sinking ship, or a downed plane, POES use the same Doppler effect that causes a car horn to sound higher-pitched when the car is moving toward you than it sounds after it passes by.

In a similar way, POES “hear” a higher frequency when they’re moving toward the source of the distress signal, and a lower frequency when they’ve already passed overhead. It takes only three distress-signal bursts — each about 50 seconds apart — to determine the source’s location.

Complementing the POES are the Geostationary Operational Environmental Satellites (GOES), which, besides providing weather data, continuously monitor the Western Hemisphere for distress signals. Since their geostationary orbit leaves them motionless with respect to Earth below, there is no Doppler effect to pinpoint location. However, they do provide near instantaneous notification of distress signals.

In the future, the network will be expanded by putting receivers on new Global Positioning System (GPS) satellites, Fitzmaurice says. "We want to be able to locate you after just one burst." With GPS, GOES will also be able to provide the location of the transmitter. Philosophers beware: SARSAT is making "silent crashes" a thing of the past.

Download a two-page summary of NOAA-19 at www.osd.noaa.gov/POES/NOAA-NP_Fact_Sheet.pdf. The Space Place gives kids a chance to rescue stranded skiers using their emergency rescue beacons. The Wild Weather Adventure game awaits them at spaceplace.nasa.gov/en/kids/goes/wwa.

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

NOAA's polar-orbiting and geostationary satellites, along with Russia's Cospas spacecraft, are part of the sophisticated, international Search and Rescue Satellite-Aided Tracking System.



For those of you with Facebook pages, we just created a page for NASA's Space Place Web site, <http://spaceplace.nasa.gov>. The Space Place an extensive, content-rich Web site for upper elementary age kids, their teachers, parents, and anyone else who likes a simple, readable, fun presentation of a wide range of space and Earth science and technology topics. Most of the site is great for kids to explore on their own, with interactive games, hands-on projects, and fun facts. But it also has lots of stuff for teachers. Teachers especially appreciate the bi-monthly Space Place Newsletter for educators, which has lots of suggestions for how to use the resources of this Web site in the classroom. See the "Teacher's Corner" at <http://spaceplace.nasa.gov/en/educators>.

Check out "**NASA's The Space Place**" new page on Facebook, where you will also find exclusive content only for our Facebook fans! Become a fan, and we'll also let you know whenever we add a new game, animation, cartoon "talk show," fun fact, or any other interesting stuff. It's a great way to explore space!

Apollo 11 Submitted by Dan Brown

We Choose the Moon

To celebrate the 40th anniversary of the Apollo 11 mission to the moon, the JFK Presidential Library and Museum has sponsored and launched a website which will re-broadcast original footage and audio of the Apollo 11 mission in real time.

The interactive website contains images, statistics and information about the historic moon landing, as well as a mission tracker to follow the progress of the mission. The "live" (-40 years) broadcast will culminate in the July 20th landing.

To watch this historic event unfold in real time, visit :

<http://www.wechoosethemoon.org>

What is the 365 Days of Astronomy podcast?

The 365 Days of Astronomy Podcast is a project that will publish one podcast per day, 5 to 10 minutes in duration, for all 365 days of 2009. The podcast will be made available through an RSS feed.

The podcast episodes will be written, recorded and produced by people around the world. Each day will have a specific topic or theme based on The 365 Days of Astronomy Calendar, a daily calendar of astronomical events, themes and ideas created by the IYA. Although all the episodes will have a common intro and outro that ties into the overall theme, each episode will be completely different.

<http://365daysofastronomy.org/>

Night Sky Network News Submitted By Barb Geigle

1. Our next Night Sky Network Teleconference will be Thursday, August 27, at 9 pm. The speaker will be Brian Day, and he will be discussing the current LCROSS mission. To join in call the toll-free conference call line: 1-888-455-9236 between 8:45 - 9:00pm. An operator will answer and:
2. You will be asked for the passcode: NIGHT SKY NETWORK
3. You will be asked to give your NAME and the CLUB you belong to, and number of people listening with you.

http://nightsky.jpl.nasa.gov/download-view.cfm?Doc_ID=384

New IYA Cornerstone Project

On October 23rd and 24th, there will be a new series of events entitled Galilean Nights. The focus of the project is sidewalk observations of the gas giant Jupiter and its moons, as well as allowing members of the public to observe the Sun, our own Moon and many more celestial marvels.

Read all about it:

<http://www.astronomy2009.org/news/updates/348/>

If anyone is interested in learning more about the Night Sky Network, please contact me.

2010 Astronomy Wall Calendars—contact Linda Sensenig

Hard to believe that it is time to order the 2010 Astronomy wall calendars again! I usually send off the first order, which is our BIG order, after the September meeting, but if you know you want one, let me know as soon as possible so you don't forget it. The price has not gone up! It is still \$6.50. This is a 50% discount from the retail price. Again it will be a deep space calendar.

The images for 2010 are: Horsehead Nebula, Galaxy Cluster CL 0024-17, Mars' Moon Phobos, The Milky Way Core in Infrared Light, Globular Cluster Omega Centauri, Spiral Galaxy M81, Cat's Paw Nebula, Tadpole Galaxy, Star-Forming Region NGC 3603, Elephant Trunk Nebula, Barred Spiral Galaxy NGC 1672, Orion Nebula. Since our July meeting really isn't a meeting and we won't have an opportunity to do business, please call me at 610-375-9062 evenings or e-mail me at Ljsbach@cs.com. You can either send your money to me in the mail or pay me at one of the club meetings. Our next BCAAS business meeting actually will be the September meeting.

- Linda Sensenig

**Berks County Amateur
Astronomical Society**

c/o Linda Sensenig
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Hotline: 610-921-0173
Call us for all the
latest event details!

Visit us today at
www.berksastronomy.org

2009 Events Calendar

Aug 13—Club Picnic, 5:30 pm, Dave Brown's farm. Perseid meteor observing

Aug 15—Club Star Watch at the Flying Field, 7:30 pm

Aug 22—Kaercher Creek Park, 8 pm (rd 8/28)

Aug 29—Blue Marsh Lake, Dry Brooks Day Use Area, dusk

Sep 10—Club Meeting – Ginny McSwain, Stellar Disks

Sep 26—Nolde Forest, 7:30 pm – Talk by Dave Brown and observing

Sep 27—Berks County Heritage Center, 2 pm (rain or shine) Solar talk by Barb Geigle and Solar Observing if weather permits

Oct 9—Joint program with Museum instead of regular meeting - TBD

Nov 12—Club Meeting - TBD

Dec 10—Club Meeting – Election of Officers and Holiday Party

2009 Regional Star Parties

Aug 13-16 Stellafane, Springfield, VT
***Special Guest astronaut Capt. Alan Bean, 4th man to walk on the Moon, will be attending the Stellafane convention this year and will be giving the Key Note address. To help pay for Capt. Bean's speaking fees the Springfield Telescope Makers is holding a special dinner with Capt. Bean. For details, visit www.stellafane.org. ***

Aug 21-23 LVAAS MegaMeet, Pulpit Rock, Hamburg, PA

Aug 22 - 25 Almost Heaven Star Party, Spruce Knob, WV

Sept 17-20 Delmarva Stargaze No Frills Star Party, Queen Anne, MD

Sept 18-20 Black Forest Star Party, Cherry Springs State Park

Oct 16-18 Mason-Dixon Fall Star Party Wellsville, PA

Oct 16-18 Stella Della Valley Star Party, Ottsville, PA
