

Pegasus

The BCAAS Newsletter

Berks County Amateur Astronomical Society



President's Message

Well, another year has come and gone. For a lot of people, the beginning of a new year leads to reminiscing about the past. I am thinking back over the years since I joined BCAAS. After buying my first telescope, I wanted to learn more about astronomy and to meet people who shared my love of the night sky. A flyer my husband brought home from Earth Day led me to the club, and here I am eight years later, writing my first President's Message.

The journey has been much more than that to me, though. My involvement with the club has helped me to grow. I have found public outreach to be immensely rewarding. Like many people, I have never been comfortable standing in front of a crowd giving a talk, and it is certainly not one of my strong points (but I keep trying).

However, when I am at my telescope giving someone their first look at Saturn and hear that "ooh" or "wow" it reminds me of the first time I saw Saturn through a telescope and the excitement is infectious!

There have been some adventures, and misadventures, along the way. But the most important part of the journey has been the friendships I have made. Sharing a common interest makes it all the more enjoyable. I hope to get to know more of you during the coming year.

The beginning of a new year can also mean making resolutions. Most resolutions tend to fall by the wayside. With our busy lives, it can be hard to find time to meet your goals.

However, because we are so busy, I feel it is also important to make a little time for ourselves. As the saying goes, stop to smell the roses along the way. So for the New Year, I would like everyone to try to take a few minutes here and there to do something just for you. Whether it is spending a few minutes observing or sharing the night sky, or reading about astronomy or cosmology, or participating in any other interest you may have, just make the time. (Your blood pressure will thank you!) I hope attending a club meeting, star watch, or one of our public programs will be on your agenda.

The start of 2009 also marks the start of another exciting event – the International Year of Astronomy 2009 (IYA2009), which commemorates the 400th anniversary of the first scientific use of a telescope by Galileo Galilei. More than 135 countries are participating in the year-long event, which has been endorsed by the United Nations, UNESCO (the United Nations Educational, Scientific and Cultural Organization), and the US Congress. If you have access to the internet, check out the 365 Days of Astronomy podcast (www.365daysofastronomy.org) to get started! This is a daily, short audio presentation that you can listen to right from your computer. We will keep you posted with additional details.

I am wishing everyone a healthy and prosperous New Year. More importantly, I am wishing everyone a Happy New Year! See you soon.

Barb Geigle



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Mira: A Real Shooting Star from NASA Space Place

Jet planes are really fast. They leave long, skinny clouds across the sky like fat chalk lines. These “clouds” are called contrails. Contrails form from the jet engines’ exhaust. The exhaust contains water, which quickly freezes into sparkling ice crystals trailing behind the plane.

Well, scientists were surprised to discover recently that a really fast star can leave a sort of contrail too. Mira (MY-rah) is a star that scientists have studied for 400 years. But NASA’s Galaxy Evolution Explorer telescope captured a very surprising

image of Mira. It showed for the first time that Mira has a long tail of dust and gas—13 light-years long! That is 20,000 times longer than the average distance from the Sun to Pluto!

A star’s life has a beginning, middle, and end, just like ours. Only a star’s life is much, much longer. Mira is a red giant star near the end of its life. It is blowing off much of its mass in the form of gas and dust. It has already flung out enough material to construct at least 3,000 Earth-sized planets!

Mira is moving at 291,000 miles per hour! This is much faster than the other stars in our part of the Milky Way galaxy. This speed and the huge amount of material coming off Mira have created its contrail-like tail.

Now the light our eyes can see is only a teensy part of all the light that exists. Mira’s tail is visible only in ultraviolet light, which our eyes cannot see. But the Galaxy Evolution Explorer can. The Explorer is a space telescope whose job is to survey the universe in ultraviolet light. As you can see from Mira, this special telescope is helping scientists make new discoveries about the universe.

Mira, with its 13-light-year-long tail, zips through the galaxy at 291,000 miles per hour! This image was made from several Galaxy Evolution Explorer images put together like a mosaic.



Night Sky Network News Submitted By Barb Geigle

Thursday, January 15th is just around the corner. Get ready for the Telecon!

We want you to enjoy our exciting IYA 2009 telecon series given by Dr. Mark Showalter a SETI Institute planetary astronomer. Dr. Showalter will speak about our Solar System.

Join the Teleconference on Thursday, January 15th at 6:00 pm PT (9:00 pm Eastern).

Dr. Showalter is a specialist in the moons and rings of our Solar System and has even discovered a few moons himself.

To log into the Telecon on Thursday, January 15th, between 5:45 - 6:00pm (Pacific Time):

Use the toll-free conference call line: 1-888-455-9236. An operator will answer and:

- You will be asked for the passcode: NIGHT SKY NETWORK
- ? You will be asked to give your NAME and the CLUB you belong to, and number of people listening with you.

The PowerPoint will be available a few days before the telecon at:

http://nightsky.jpl.nasa.gov/download-view.cfm?Doc_ID=359

Mark your calendars for **Thursday, February 19th** for the February telecon with Dr. Connie Walker on Dark Sky Awareness: <http://www.darks skiesawareness.org/>

[BCAAS January Meeting Speaker Bio—Ryan M. Hannahoe](#)

Ryan is a recent honor's graduate from New Mexico State University and is working towards a BS in Education at Montana State. At MSU, Ryan works for the Montana Space Grant Consortium presenting lectures on astronomy to school aged children. He is also a remote telescope technician with an observatory in Australia. There, Ryan enjoys supporting various telescope projects while photographing the many wonders of the Universe. Some of Ryan's astronomical photographs have appeared in Astronomy Magazine and university lab manuals.

BCAAS Membership Survey—Barb Geigle

Although I have been elected as your president, please remember that this is YOUR club. I would like to know what would make the club more enjoyable for you. Please take a few minutes to complete this survey and return it to me. You can bring it to a meeting, drop me an email (blgeigle@comcast.net), or send it to Linda with your dues. If I have your email address, you will also be getting a copy of this via email. Some of the questions are just to make sure we have your most current information. ***We will not give out or publish any of this information without your permission.*** Thank you.

Name:

Address:

Phone number:

Email address:

What topics would you like to learn about?

Are there any particular speakers you would like to hear?

Are there any activities you would like to have?

What would encourage you to come to a meeting?

We are planning some joint programs with the museum this year. Would we have your permission to give your email address to the museum so that you could receive information about the programs from them? They will not give your information to anyone else, and you would be able to opt out.

Any other comments or suggestions:

THANK YOU FOR SUPPORTING BCAAS!!!!

Superstar Hide and Seek by Dr. Tony Phillips

It sounds like an impossible task: Take a star a hundred times larger in diameter and millions of times more luminous than the Sun and hide it in our own galaxy where the most powerful optical telescopes on Earth cannot find it.

But it is not impossible. In fact, there could be dozens to hundreds of such stars hiding in the Milky Way right now. Furiously burning their inner stores of hydrogen, these hidden superstars are like ticking bombs poised to 'go supernova' at any moment, possibly unleashing powerful gamma-ray bursts. No wonder astronomers are hunting for them.

Earlier this year, they found one.

"It's called the Peony nebula star," says Lidia Oskinova of Potsdam University in Germany. "It shines like 3.2 million suns and weighs in at about 90 solar masses."

The star lies behind a dense veil of dust near the center of the Milky Way galaxy. Starlight traveling through the dust is attenuated so much that the Peony star, at first glance, looks rather dim and ordinary. Oskinova's team set the record straight using NASA's Spitzer Space Telescope. Clouds of dust can hide a star from visible-light telescopes, but Spitzer is an infrared telescope able to penetrate the dusty gloom.

"Using data from Spitzer, along with infrared observations from the ESO's New Technology Telescope in Chile, we calculated the Peony star's true luminosity," she explains. "In the Milky Way galaxy, it is second only to another known superstar, Eta Carina, which shines like 4.7 million suns."

Oskinova believes this is just the tip of the iceberg. Theoretical models of star formation suggest that one Peony-type star is born in our galaxy every 10,000 years. Given that the lifetime of such a star is about one million years, there should be 100 of them in the Milky Way at any given moment.

Could that be a hundred deadly gamma-ray bursts waiting to happen? Oskinova is not worried.

"There's no threat to Earth," she believes. "Gamma-ray bursts produce tightly focused jets of radiation and we would be extremely unlucky to be in the way of one. Furthermore, there don't appear to be any supermassive stars within a thousand light years of our planet."

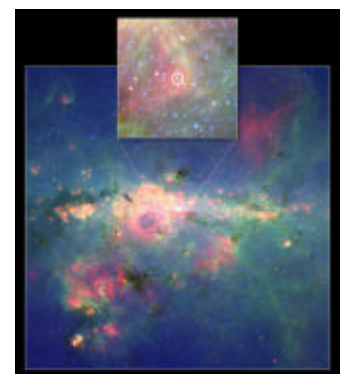
Nevertheless, the hunt continues. Mapping and studying supermassive stars will help researchers understand the inner workings of extreme star formation and, moreover, identify stars on the brink of supernova. One day, astronomers monitoring a Peony-type star could witness with their own eyes one of the biggest explosions since the Big Bang itself.

Now *that* might be hard to hide.

Find out the latest news on discoveries using the Spitzer at www.spitzer.caltech.edu. Kids (of all ages) can read about "Lucy's Planet Hunt" using the Spitzer Space Telescope at spaceplace.nasa.gov/en/kids/spitzer/lucy.

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

The "Peony Nebula" star is the second-brightest found in the Milky Way Galaxy, after Eta Carina. The Peony star blazes with the light of 3.2 million suns.



**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



2009 Events Calendar

**Thursday, January 8th
at 7:30pm:**

General Meeting at the Reading Museum. Our speaker tonight will be past BCAAS member Ryan M. Hannahoe from Montana State University's Space Public Outreach Team. He will present a lecture entitled, "Listening to the Universe."

The talk will cover basic gravitational wave astronomy principals and will also include

several practical demonstrations. Children from 5th grade on up are highly encouraged to attend this event.

**Thursday, February 8th
at 7:30pm:**

General Meeting at the Reading Museum. Program to be announced.

Keep a close eye on our website for updates on programs and observing events coming up in the Springtime!!!