

The Mason-Dixon Astronomer



July Meeting:

- Wed., July 10th –
7:30pm
Bear Branch Nature
Center
- **Observatory
Committee**
“Overview of the
WASI Observatory
Project”

Pre-Meeting Dinner

- Wed., July 10th –
6pm.

Harry's Main Street
Grill -
65 W Main Street
Westminster, MD 21157

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St*r Points

Planets and a Meteor Shower

July 2013 – Curt Roelle

Having passed the Summer Solstice in June, July finds us heading toward Winter Solstice next December as each night grows a little bit longer than the one preceding it. In Westminster by month's end, the sun rises 22 minutes later and sets 18 minutes earlier than it did on the 1st. Our night and the opportunity to observe the sky swells by 30 minutes.

Venus remains visible low in the west-northwest as twilight fades in early July. It may just be coming into view around 8:45 p.m. 15 degrees above the horizon. Halfway up to the zenith is 45 degrees, so estimate about 1/3 of that angular distance.

Around 30 minutes later, in darker skies, the ringed planet Saturn becomes visible. It forms an interesting triangle with two naked-eye stars. Appearing high overhead is the bright star Arcturus. As you are facing south look for fainter Saturn below Arcturus and the similarly bright star Spica to its lower right.

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President's Message

July 2013 - Vanessa Thomas

Happy summer everyone! I absolutely love the warm weather and the long days of summer. I know that makes for short nights and less time under the stars. But personally, I enjoy stargazing so much more on these warm nights than when I'm bundled up and shivering.

Summer is also a good season for star parties. If you've never been to one, I highly recommend trying to make it to one sometime — especially if you own a telescope, but even if you don't. For me, there's nothing like watching the patchy band of the Milky Way materialize overhead as the sky grows dark after sunset. Living in the Baltimore suburbs, I usually don't get to see that unless I'm at a star party. Many times at a star party, I'll just find myself staring upward in awe. No telescope necessary. But I do also relish the experience of dedicating myself to exploring the night sky with my binoculars and my telescope, for hours on end, with no distractions and nowhere else to rush off to.

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July Meeting – Observatory Committee Members

“Overview of the WASI Observatory Project”

An overview of the WASI Observatory Project will be shared with members. Many newer members may be unaware of the history and timeline of the program and the Observatory Committee will bring everyone up to date. We have the instruments, raised funds, and are considering two building sites. Please come and bring your questions with you.

Coming Soon...

A few things to keep on your calendar

Gadget Night Returns!!!

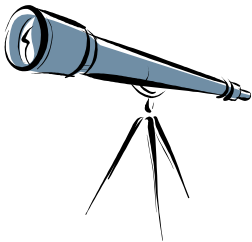
It's back by popular demand! WASI Gadget Night is coming this Fall. Gadget night is when members share their favorite home built or commercial gadgets, software, tools, or anything that can be used, learned, built, downloaded, or bought by others to make observing easier. So start thinking about what item you might want to spend 5-10 minutes demonstrating during the meeting. More details will appear later in these pages.



2013 WASI Picnic

Mark Saturday evening, August 17, on your calendar for the annual WASI summer picnic at Bear Branch Nature Center. The picnic will begin at 6 p.m. in the usual location -- the picnic pavilion down the hill from the parking log. More information will be provided in the August MDA.

Upcoming Events From Our Calendars



- ❖ **Monthly Meeting** July 10th, 7:30 p.m., at Bear Branch Nature Center (BBNC)
- ❖ **Soldiers Delight Public Stargazing** July 13th 8 p.m., at Soldiers Delight Natural Environment Area in Owings Mills
- ❖ **Member's Observing** July 27th (Tentative), About 9 p.m., at Bear Branch Nature Center (BBNC)
- ❖ **Planetarium Show** NO Planetarium Show in July – Sorry!

St*r Points for July...

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You may confirm Saturn with almost any sized telescope. Even a low magnification will reveal its rings.

To me, Antares appears yellow-orange, and there's a very good reason for that. Arcturus is an orange giant star with about 1,700 times the volume of our sun and a surface temperature of over 7,000 degrees Fahrenheit. Arcturus is located 37 light-years from earth in the direction of the constellation Boötes the herdsman.

Spica seems white to my eye. It's a type of star called a sub giant, 10 times as massive as sun, whose surface temperature is almost 40,000 degrees Fahrenheit. Spica is located 260 light-years away toward the constellation Virgo.

For early risers looking up to the morning sky, Mars and Jupiter will be less than one degree apart on the morning of Monday, July 22. They should both fit within the same low power eyepiece field for most any telescope. Look for brighter Jupiter at 5:30 a.m. about 14 degrees above the horizon in the eastern sky. The two planets will be fairly close on the previous and following mornings as well making a good binocular target.

What better time is there than summer to enjoy a meteor shower? In January this column mentioned July's upcoming Delta Aquarid meteor shower expected to peak on the night of Sunday, July 28-29. The best time for viewing is between midnight and dawn.

This is a shower that may be visible most of the night with a waning 41% illuminated crescent moon that won't seriously interfere. The shower might not have a sharp peak and so could extend over the previous or following night.

Set up a lawn chair or a reclining folding chair and get comfortable. Have a blanket or sleeping bag handy to maintain comfort and to help ward off any dew. Keep a binocular handy for observing any lasting glowing "trains" left by particularly bright meteors. According to the *Astronomical Calendar 2013* "around 5-10% leave persistent trains." If you see one, study it with binoculars and watch how it rapidly twists in the high altitude winds high above the earth's surface. Although meteors may appear anywhere, you may prefer to be facing in the direction of the shower's "radiant" in the constellation Aquarius, just below the "great square" of Pegasus. The radiant is the point in the sky where the meteors appear to radiate from. If you're not familiar with these constellations, just face south and you'll do all right.

Join The Westminster Astronomical Society...

Joining WASI gives you a great opportunity to meet fellow astronomers and provides group memberships to the [Astronomical League](#) and the [International Dark-Sky Association](#). Additionally, benefits include access to our [Library](#) (over 500 astronomy-related books), the ability to borrow [club scopes](#), a subscription to the Astronomical League's *Reflector*, access to members-only observing sessions and sites, and club discounts on astronomical magazine subscriptions.

Membership is still only \$25 per year.

<http://www.westminsterastro.org>

President's Message

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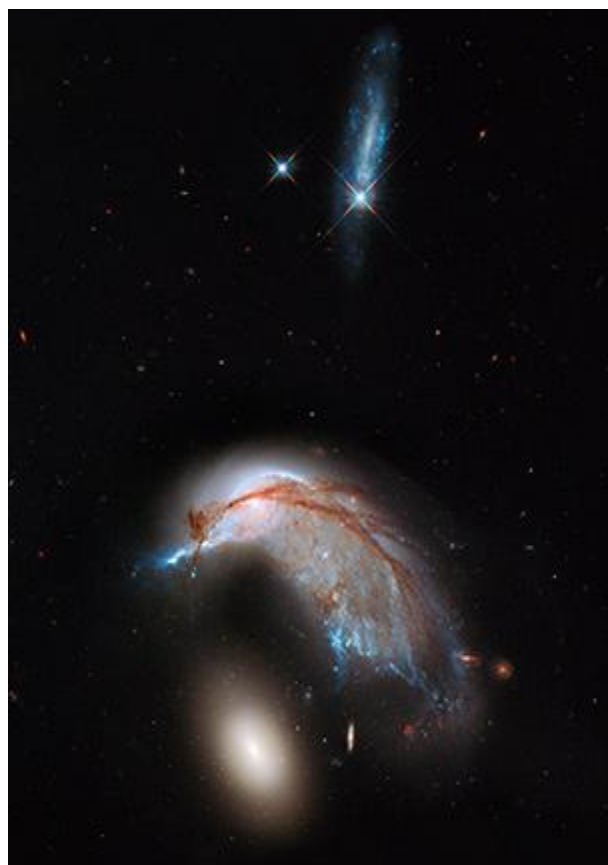
Even if you're not hunting for celestial gems yourself, you can wander from telescope to telescope and find out what other observers have discovered. In my experience, most people are delighted and proud to show you whatever faint fuzzy they just successfully hunted down. Plus, most star parties will have interesting and educational talks during the daytime as well as vendors with all sorts of tantalizing astronomy-related products (books, clothes, telescope accessories, jewelry, and so on). Even if you don't like camping, don't let that stop you, either. Many star parties will have hotels not too far away or other on-site accommodations available. If you have any questions about attending a star party, please ask! Many of your fellow WASI members are experienced star partiers.

Coming up later this month, the local Mason-Dixon Star Party will be held outside York, Pennsylvania, from July 10–14. The Green Bank Star Quest will happen the same weekend under the beautiful skies of West Virginia. If you're up for a longer road trip, this year's Nebraska star party is slated for August 4–9, and the famous Stellafane Convention will take place in Vermont from August 8–11. Don't want to drive quite so far but still want the dark skies? The Almost Heaven Star Party in West Virginia is scheduled for September 6–10, and one of my favorites, the Black Forest Star Party in northern Pennsylvania will be that weekend as well, September 6–8. But these are just a few of the many options. There are star parties practically year-round and all over the country (and Canada, too).

If you like your armchair astronomy, though, I've got a nice new Hubble picture to share with you. It was released last month by the Hubble Heritage Team at STScI in Baltimore, where I work. Before the image was released, we debated whether this disturbed galaxy looks like a jumping porpoise, a penguin protecting an egg, or a hummingbird hovering over the egg. We still don't agree. What do you think?

Anyway, I hope you are enjoying your summer so far, whether it's spent under the stars or somewhere else. And I hope you'll choose to spend a small portion of your summertime with us at Bear Branch during our next meeting on July 10!

Vanessa



Member's Observing Notes:

Steve Conard

Because of weather and personal commitments, Paul and I haven't been able to attend a club observing session in a couple of months. For July, we are going to change things up a bit, and try video astronomy. We'll set-up a moderate sized go-to telescope, install an integrating video camera on it, and project the images onto the "big screen". I don't believe that WASI has ever tried this before, but I've heard of several other clubs doing this and it was a big success. We'll also try to video tape some highlights that we can show at a future general meeting.

For this session, the only thing you'll need to bring is a lawn chair, drinks, and snack (we'll of course provide some sort of junk food). Be warned that if you do bring a telescope, we'll be using a projector to show the video images--you may have issues with staying dark adapted. Since this is our first try at this, be aware that technical issues may arise, but we'll try to test as much as we can in advance to minimize the chance for disappointment!

This session will tentatively be on July 27th--we'll confirm the date at the July meeting. Sunset is at 8:25 and twilight should end around an hour later. Moonrise is at about 11:15, giving us about 2 hours of good observing--we'll plan on packing up around then.

We'll see the big name summer planetary and gaseous nebulae (of course) but If you have any favorite summer targets, bring a list with you to the session and we'll try to get to them.

WASI at the Carroll County 4H Fair

The club will be setting up a booth at the CC 4H fair this year. Consider coming out to help WASI spread awareness of the wonders of the night sky and have some fun in the process. The booth will run from noon to 10pm each day but will be most busy from 5pm on. We will have telescopes set up and I am sure Skip will be spinning some grand tales throughout the day.

The fair runs from July 27th through August 2nd. It is held on the grounds of the Carroll County Agriculture Center in Westminster, MD. Below is a short blurb from their web site:

This year we will be celebrating our 117th year where we are known for a traditional Country Fair experience. We are proud of our exhibitors, entertainment, animal shows, food, and, exhibits. We want to continue this tradition by bringing a wide variety of old traditions but bring you some new ones. Back by popular demand this year you will see the Antique Dancing Tractors, along with Racing Pigs, Combine Demolition Derby, Wild West Night, Car Demolition Derby, Lawn Mower Racing, Tractor Pull, Chain Saw Carver, and much more. New to see this year will be the Sutter Post Clydesdales!

For more information about volunteering at the booth come out to the July meeting or contact Skip.



**ALCON
2013
ATLANTA**

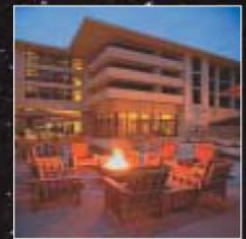
**Summer Skies, Southern Hospitality
July 24-27, 2013 • Atlanta, Georgia**

Location: Fernbank Science Center
Host Organizations: Atlanta Astronomy Club, Astronomical League
Partnering Organization: Association of Lunar and Planetary Observers (ALPO) • This year, ALPO presentations will be mainstreamed with League talks

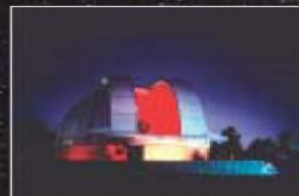


Accommodations...

- Emory Conference Center Hotel
- Shuttle service between hotel and presentations at Fernbank Science Center and Agnes Scott College Bradley Observatory for those without transportation
 - Be sure to ask for the Astronomical League rate.
1-800-933-6679, emoryconferencecenter.com/index.cfm
 - Saturday night's Awards Banquet



- Primary Venue:** Fernbank Science Center
- Talks held in 70 foot planetarium
 - Evening shows with Zeiss Mark V projector coupled with various special effects projector
 - 0.9 meter Cassegrain reflector in the Ralph Buice Memorial Observatory
 - Vendor displays



- Atlanta Attractions**
- World of Coca-Cola
 - Georgia Aquarium
 - Zoo Atlanta
 - Inside CNN
 - Atlanta Botanical Garden
 - Olympic Games venues



Conference Speakers...

Chris Hetlage, Deerlick Astronomy Village, a distinctive dark sky community.
Tim Puckett, Supernovae Research



Saturday night's Awards Banquet Keynote Speaker:
Charles Wood, Sky and Telescope Lunar 100 creator



Star BQ, Friday, July 26, Agnes Scott College Bradley Observatory:
 Bradley Observatory Tour; 30-inch Beck Cassegrain; Planetarium Presentation

Other ALCon 2013 Excursions

- Atlanta Astronomy Club's Villa Rica Observatory; Full size roll-off roof observatory with 20-inch Newtonian reflector
- Atlanta Astronomy Club's observing site at the Deerlick Astronomy Village



Check www.ALCon2013.astroleague.org for more information as it becomes available.





High-energy Spy

By Dr. Martin C. Weisskopf

The idea for the Chandra X-Ray Observatory was born only one year after Riccardo Giacconi discovered the first celestial X-ray source other than the Sun. In 1962, he used a sounding rocket to place the experiment above the atmosphere for a few minutes. The sounding rocket was necessary because the atmosphere blocks X-rays. If you want to look at X-ray emissions from objects like stars, galaxies, and clusters of galaxies, your instrument must get above the atmosphere.

Giacconi's idea was to launch a large diameter (about 1 meter) telescope to bring X-rays to a focus. He wanted to investigate the hazy glow of X-rays that could be seen from all directions throughout the sounding rocket flight. He wanted to find out whether this glow was, in fact, made up of many point-like objects. That is, was the glow actually from millions of X-ray sources in the Universe. Except for the brightest sources from nearby neighbors, the rocket instrument could not distinguish objects within the glow.

Giacconi's vision and the promise and importance of X-ray astronomy was borne out by many sounding rocket flights and, later satellite experiments, all of which provided years-, as opposed to minutes-, worth of data.

By 1980, we knew that X-ray sources exist within all classes of astronomical objects. In many cases, this discovery was completely unexpected. For example, that first source turned out to be a very small star in a binary system with a more normal star. The vast amount of energy needed to produce the X-rays was provided by gravity, which, because of the small star's mass (about equal to the Sun's) and compactness (about 10 km in diameter) would accelerate particles transferred from the normal star to X-ray emitting energies. In 1962, who knew such compact stars (in this case a neutron star) even existed, much less this energy transfer mechanism?

X-ray astronomy grew in importance to the fields of astronomy and astrophysics. The National Academy of Sciences, as part of its "Decadal Survey" released in 1981, recommended as its number one priority for large missions an X-ray observatory along the lines that Giacconi outlined in 1963. This observatory was eventually realized as the Chandra X-Ray Observatory, which launched in 1999.

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The Chandra Project is built around a high-resolution X-ray telescope capable of sharply focusing X-rays onto two different X-ray-sensitive cameras. The focusing ability is of the caliber such that one could resolve an X-ray emitting dime at a distance of about 5 kilometers!

The building of this major scientific observatory has many stories.

Learn more about Chandra at www.science.nasa.gov/missions/chandra . Take kids on a “Trip to the Land of the Magic Windows” and see the universe in X-rays and other invisible wavelengths of light at spaceplace.nasa.gov/magic-windows.

Dr. Weisskopf is project scientist for NASA's Chandra X-ray Observatory. This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.



Composite image of DEM L50, a so-called superbubble found in the Large Magellanic Cloud. X-ray data from Chandra is pink, while optical data is red, green, and blue. Superbubbles are created by winds from massive stars and the shock waves produced when the stars explode as supernovas.