

# The Mason-Dixon Astronomer



## August Meeting:

- Wed., August 14<sup>th</sup> – 7:30pm  
Bear Branch Nature Center
- **Planetarium Upgrade**  
*Presentation and Tour by Jim Reynolds*

## Pre-Meeting Dinner

- Wed., August 14<sup>th</sup> – 6pm.  
  
Harry's Main Street Grill -  
65 W Main Street  
Westminster, MD 21157

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## St\*r Points

### Summer's Best Meteor Shower

August 2013 – Curt Roelle

The Carroll County 4H and Future Farmers of America Fair in Westminster is winding up this weekend. From the tractor pulls and combine demolition derby to funnel cakes and ice cream, the fair was quite an attraction for thousands of people who attended.

Between the sawdust track where pigs and ducks held daily races and the Clydesdale horse tent, there is a booth run by members of the Westminster Astronomical Society. Outside day and night, weather permitting, was an array of telescopes through which they shared views of heavenly celestial bodies with passersby.

During the day, telescopes equipped with “white light” filters allow fair goers to safely view the sun’s otherwise blindingly brilliant photosphere and to see sunspots on the bespeckled face of old Sol, our nearest star.

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## President's Message

August 2013 - Vanessa Thomas

Dear WASIans,

At our upcoming meeting, we'll be having a tech & gadget night, during which we'll share tips with each other about observing tools, astronomy apps, techniques for collimating a telescope, and things like that. If you have any tips, tricks, or resources that might be of interest to the rest of us, please come to the meeting and share them!

While we greatly enjoy our professional guest speakers, it's always wonderful to have presentations from our members as well. If you ever have an idea for a presentation, or want to report on an observing experience or a star party you've attended, I invite you to share your idea with me or with Curt, who coordinates our schedule of speakers each month. It's also a great way for us to get to know each other and our interests.

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## August Meeting – TOPIC

### *2013 Planetarium Upgrade*

This summer the old Goto star ball projector was replaced with a new state-of-the-art digital projector, plus new comfortable seating. Planetarium director Jim Reynolds will give an overview and test drive of the new facility.

The new projector is a Cannon WUX10 Mark II Multimedia Projector that uses a spherical mirror to project images onto the dome of the planetarium. The workstation is an Apple iMac. The seating capacity has been reduced to 29, but each seat is much more comfortable and angled slightly towards the dome.



### 2013 WASI Picnic...

#### When:

Saturday evening, August 17<sup>th</sup> beginning at 6:00pm.

#### Where:

Bear Branch Nature Center (BBNC). In the picnic pavilion down the hill from the back of the parking lot. There is handicapped access with permission.

#### Who:

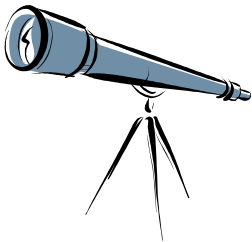
Club members, their friends and family.

#### What:

A pot-luck picnic to get together and enjoy the company. If the weather is nice, there might even be some observing after the picnic. The club will provide drinks, ice, plates, cups, napkins, and plastic-ware. The club will also provide an open charcoal grill. You should bring your own meat or equivalent for grilling (just for you) and a side dish/dessert (to share).

## Upcoming Events From Our Calendars

- ❖ **Planetarium Show** August 10<sup>th</sup>, 7:30 p.m., at Bear Branch Nature Center (BBNC) – Your first chance to see the new projector in action!!!
- ❖ **Soldiers Delight Public Stargazing** August 10<sup>th</sup>, 8 p.m., at Soldiers Delight Natural Environment Area in Owings Mills
- ❖ **Monthly Meeting** August 14<sup>th</sup>, 7:30 p.m., at Bear Branch Nature Center (BBNC)
- ❖ **2013 WASI Picnic** August 17<sup>th</sup>, 6:00 p.m., at Bear Branch Nature Center (BBNC) – Picnic area beyond nature center parking lot.



## St\*r Points for August...

Continued from Page 1

Other telescopes equipped with “hydrogen alpha” filters literally take observers to a higher level. These telescopes reveal the magnetic storms on the sun. They are most visible around the sun’s edge where streaming plumes of hydrogen gas – the “prominences” – protrude into space. They resemble feathers or little trees and sometimes become detached, floating alongside of the sun.

Although they may look small, solar prominences are tens of thousands of miles across and therefore dwarf our own planet.

In the evening, fair goers were treated to the sights of this season’s planets. Brilliant Venus appeared in the deepening evening twilight like burning magnesium before setting into the trees. Saturn, with its beautiful set of rings was a genuine crowd pleaser as it shyly darted from behind one tree to another.

Fair closes on August 3rd, so get out there and catch an authentic peek of what’s genuinely up there.

The big news for this month is the Perseid meteor shower. This month’s shower is expected to peak on the afternoon of August 12. For us it means we split the difference between the nights of August 11-12 and 12-13. Of course a few shower members will be visible in the days leading up to and following the event.

This year is special because there will be no interference from the glare of moonlight. This means that fainter shower members, normally washed out by a brightly shining moon, may also be visible from a dark country site.

The Perseids consist of dust particles or “meteoroids” given off by the comet known as 109P/Swift-Tuttle. Streams of meteoroids from previous passes of the comet orbiting the sun are encountered by the earth this time of year during its annual trip around the sun. The comet itself won’t be making a visit for another 109 years.

## 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.**

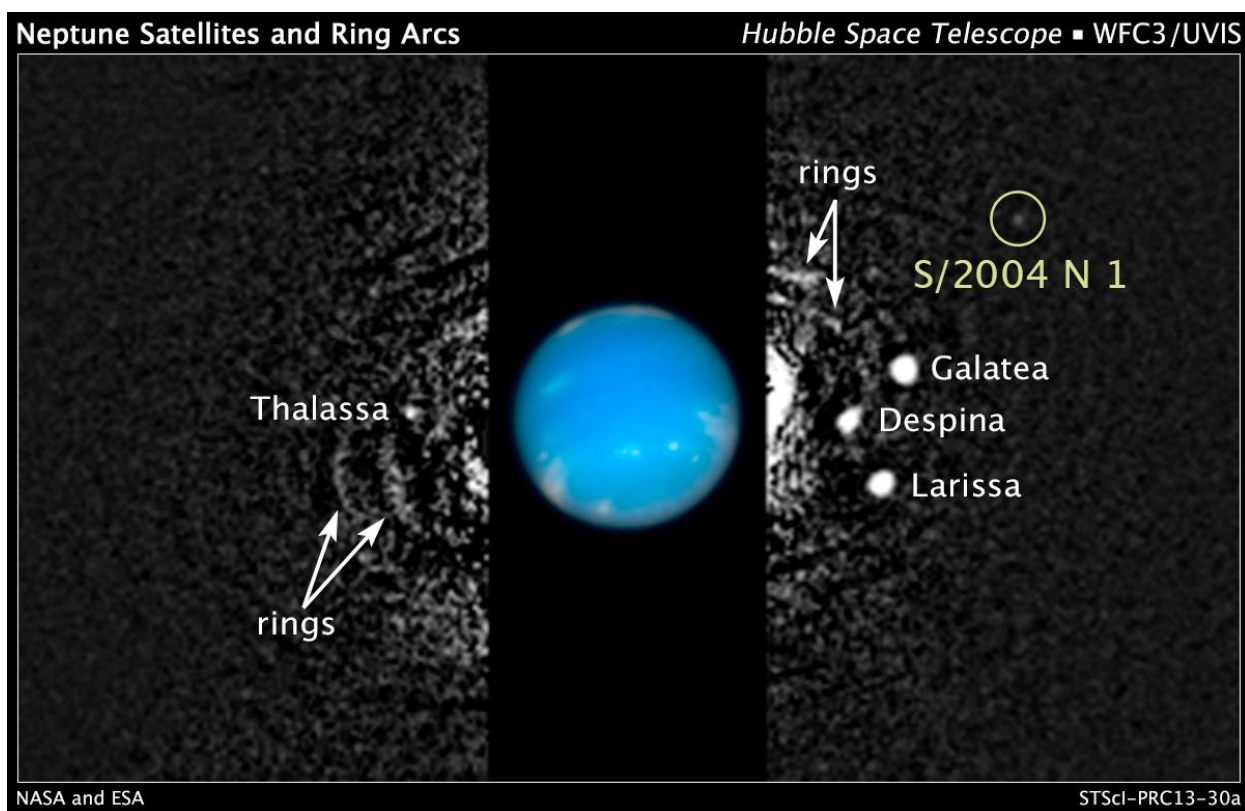
<http://www.westminsterastro.org>

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## President's Message

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One of my astronomy-related interests is the moons of the solar system. There are *so* many diverse and fascinating worlds orbiting the planets (and even orbiting more minor objects, such as asteroids). Well, last month, the known family of moons got a little bigger. While examining archived Hubble Space Telescope images of Neptune's faint rings, planetary scientist Mark Showalter spotted a new moon around Neptune. It's been a decade since someone last found a moon orbiting that planet, which now has 14 known moons. Temporarily designated S/2004 N1 (until it gets a "real" name), the moon is estimated to be only 12 miles wide at most.



Finally, I'd like to leave you with a reminder that we'll be having our annual picnic on August 17 (around 6 p.m.) at Bear Branch Nature Center. It's a potluck, so if you can attend, please bring a dish to share. We'll provide some drinks, and we'll have a grill if you want to bring burgers, hot dogs, or other grill-worthy foods. Family members are welcome, too! If you want more information about the picnic, feel free to ask us at the next club meeting on August 14, or email the officers at [wasi\\_officers@yahoo.com](mailto:wasi_officers@yahoo.com). I hope to see you there!

Vanessa

## Gadget Night – Coming Soon...

Do you have a gadget or gizmo that you love to use during your observing sessions? Is there a tool that use to plan or record those sessions? Is there something you can't live without while you are involved in this hobby we all love? Then this is your chance to share!

One of WASI's upcoming meetings will be dedicated to items that make astronomy more fun...or more efficient...or more....well....geeky! This is a night to see (and hear about) all the astronomy related gadgets that members have bought, built, or acquired.

If you have a gadget you would like to share, please contact Curt Roelle to be included.

## Launch Pad 2013 Review

Christian Ready – Reprinted, with permission from <http://christianready.com/2013/07/24/launchpad-2013-review/>

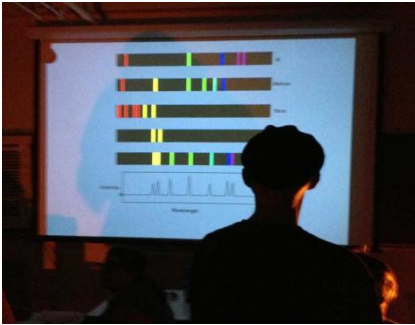


The class of 2013 from left to right: Jennifer Campbell-Hicks, Claudine Griggs, Douglas Dechow, Jay O'Connel, Jennifer Marie Brissett, Brenda Clough, Jamie Todd Rubin, Liz Argall, Andy Romine, Caren Gussoff, Chaz Brenchley, Jeri Smith-Ready, Anna Leahy, Doug Farren. Kneeling in front: Andria Schwartz, Me, Mike Brotherton

Over the weekend, we said goodbye to 14 newfound friends from the [Launchpad Astronomy Workshop](#) for Writers. It was a long, fun, and challenging week but by far the hardest challenge was realizing that had come to an end. Here's why:

## Launch Pad 2013 Review

Christian Ready – Continued from page 5.



Chaz Brenchley having a go at identifying elements from their emission spectra.



The 2.3-meter Wyoming Infrared Observatory (WIRO) telescope atop Jelm Mountain.



Launchpad is essentially astronomy 101 crammed into a one-week crash-course tailored for science fiction & fantasy writers, editors, filmmakers, and other creative professionals. It's held on the campus of the University of Wyoming where my friend [Mike Brotherton](#) is an Associate Professor of Astronomy. Last year, he invited me to be a guest instructor and as much as I enjoyed myself then, I had a much better experience this second time around for several reasons.

For one thing, I had a much better idea of what to expect this year, and was able to prepare my lectures accordingly. Mike had me teach the same topics as last year, plus asked me to teach some new topics, including binary stars and exoplanets. In fact, I have [a post on my slides from launchpad](#) you can peruse, though it may not make as much sense without me explaining them. In any case, the great preparation and coordination with Mike and fellow instructor [Andria Schwartz](#) meant that I wasn't staying up as late preparing for my talk the next day. I did, of course, stay up just as late talking with Mike about all sorts of nonsense.

As much as I enjoyed giving and watching the lectures, getting the attendees out of the classroom and into the lab was even better. Attendees got to try their hand at identifying elements from their spectra, detecting exoplanets from Kepler data, and processing Hubble images.

Even better, we were able to get up to the Wyoming Infrared Observatory (WIRO) on Jelm Mountain on Wednesday night. It's always a treat to come face-to-face with a 2.3-meter telescope. Even better, the students were taking spectra of a binary star system, which is a topic that is always near and dear to my heart 😊.

As much fun as it was, it was a lot of hard work so taking a break with a hike in Vedauwoo national park was a nice change of pace, even if 1/3 of our group fell at some point.



But my favorite part of this year's Launchpad was that my wife joined me this time. Jeri is a pretty good writer in her own right and it was great being in an environment where she could talk shop with fellow writers as well as geek out on astronomy. As much as she already knew about astronomy, this was her best exposure to it yet. Besides, we like being together.

As much fun as it was, it was a lot of work, especially for us instructors. And yet, we're already thinking about next year!

For others' perspectives on this year's launchpad, check out my listing of everyone's blog posts and recaps. And once again, a huge thank-you to our funders this year, without whom, none of this would have happened!



## **Inventing Astrophotography: Capturing Light Over Time**

By Dr. Ethan Siegel

We know that it's a vast Universe out there, with our Milky Way representing just one drop in a cosmic ocean filled with hundreds of billions of galaxies. Yet if you've ever looked through a telescope with your own eyes, unless that telescope was many feet in diameter, you've probably never seen a galaxy's spiral structure for yourself. In fact, the very closest large galaxy to us—Andromeda, M31—wasn't discovered to be a spiral until 1888, despite being clearly visible to the naked eye! This crucial discovery wasn't made at one of the world's great observatories, with a world-class telescope, or even by a professional astronomer; it was made by a humble amateur to whom we all owe a great scientific debt.

Beginning in 1845, with the unveiling of Lord Rosse's 6-foot (1.8 m) aperture telescope, several of the nebulae catalogued by Messier, Herschel and others were discovered to contain an internal spiral structure. The extreme light-gathering power afforded by this new telescope allowed us, for the first time, to see these hitherto undiscovered cosmic constructions. But there was another possible path to such a discovery: rather than collecting vast amounts of light through a giant aperture, you could collect it *over time*, through the newly developed technology of photography. During the latter half of the 19<sup>th</sup> Century, the application of photography to astronomy allowed us to better understand the Sun's corona, the spectra of stars, and to discover stellar and nebulous features too faint to be seen with the human eye.

Working initially with a 7-inch refractor that was later upgraded to a 20-inch reflector, amateur astronomer Isaac Roberts pioneered a number of astrophotography techniques in the early 1880s, including "piggybacking," where his camera/lens system was attached to a larger, equatorially-mounted guide scope, allowing for longer exposure times than ever before. By mounting photographic plates directly at the reflector's prime focus, he was able to completely avoid the light-loss inherent with secondary mirrors. His first photographs were displayed in 1886, showing vast extensions to the known reaches of nebulosity in the Pleiades star cluster and the Orion Nebula.

But his greatest achievement was this 1888 photograph of the Great Nebula in Andromeda, which we now know to be the first-ever photograph of another galaxy, and the first spiral ever discovered that was oriented closer to edge-on (as opposed to face-on) with respect to us. Over a century later, Andromeda looks practically identical, a testament to the tremendous scales involved when considering galaxies. If you can photograph it, you'll see for yourself!

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Astrophotography has come a long way, as apparent in the Space Place collection of NASA stars and galaxies posters at <http://spaceplace.nasa.gov/posters/#stars>.



Great Nebula in Andromeda, the first-ever photograph of another galaxy. Image credit: Isaac Roberts, taken December 29, 1888, published in *A Selection of Photographs of Stars, Star-clusters and Nebulae*, Volume II, The Universal Press, London, 1899.