

The Mason-Dixon Astronomer



November Meeting:

- Wed., November 12th – 7:30 pm
Bear Branch Nature Center
- **Gary Hand**
“Telescope Buyers Workshop”
Hands on Optics

Dinner With Our Speaker!

- Wed., November 12th – 6pm.
- Harry's Main Street Grill
65 W Main Street
Westminster, MD 21157

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St*r Points

Telescope Buying Advice in November

November 2014 – Curt Roelle

If you've been considering purchasing a telescope for yourself or a loved one, then this may be the month for you to finally make a commitment. We'll get back to finding out about telescopes after a brief wrap up of events from October.

During the last week of October NASA attempted to launch a rocket filled with supplies destined for the International Space Station (ISS). The Antares rocket was launched from the Mid-Atlantic Regional Spaceport located on Wallops Island, near Chincoteague, Virginia. Seconds after lifting off the pad the rocket lost power, fell back onto the pad and exploded in a stupendous twilight fireball.

It would have been a spectacle to behold, like the 4th of July in October. Instead, I was at home 144 miles from the launch pad standing on the hill in the back yard. Wallops launches are visible from Carroll County and I've observed them both at night and during the day. The launch time came and went with no visible rocket plume rising in the southeast. I waited for the 10 minute “launch window” to close before heading inside. I assume the launch had been scrubbed for the night but learned about the disaster from online coverage.



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Image by WASI Member Slava Murygin

President's Message

November 2014 – Tony Falletta

Greetings Fellow Astronomers!

November is here upon us. Fall is definitely in the air with still warm days and colder nights. With each passing day I see the daily temps take that slow slide down the thermometer. At home I haven't had any morning frost. The overnight temperatures are still above freezing but not by much! I know winter is coming but I'm not ready for snow yet! The colder nighttime temps have not dampened my stargazing spirits. With each day closer to winter, when I'm at home and find myself with a nice clear night, I grab one of my telescopes or binoculars to look around the heavens. When I'm at work, I work A.M. flights. This is the time of year when I'm up at the cruise level altitudes to enjoy colorful morning twilight skies to the east and greet my old friend Orion in the west.

I hope you had the chance to check out the eclipse this past month. October 8th showcased a beautiful early morning full moon eclipse in the western sky (of course). It was a great way to start the day. October 23rd featured a partial solar eclipse. A partial eclipse is always special to me because you are able to clearly realize the Moon in front of part of the solar disk. As an added treat, the Sun had a few quite noticeable sunspots. October also had Comet Siding Spring zip past Mars on the 18th. I wasn't able to see it due to it being quite low in the southern sky.

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November Meeting – Guest Speaker

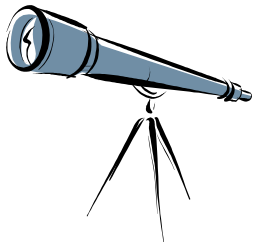
Gary Hand (Owner – Hands-On-Optics)

“Telescope Buyers Workshop ”

Once again, WASI is proud to present the annual November Telescope Buyers’ Workshop (TBW). Again this year, we are pleased to have Mr. Gary Hand from Hands-on-Optics in Damascus leading the discussion. Topics will include tips on the smart way to select a telescope as well as news about the latest breakthroughs in telescope technology, as well as insider gossip from one of the nation’s leading telescope dealers.

Upcoming Events From Our Calendars

- ❖ **Soldiers Delight Public Stargazing** November 8th, 8 p.m., at Soldiers Delight Natural Environment Area in Owings Mills
- ❖ **Monthly Meeting** November 12th, 7:30 p.m., at Bear Branch Nature Center (BBNC)
- ❖ **Planetarium Show** December 6th, 7:30 p.m., at Bear Branch Nature Center (BBNC)



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.

Adult Membership is still only \$25 per year.

NEW THIS YEAR – JUNIOR MEMBERSHIP

NEW

Yearly Membership For Anyone Under 18 Is Now Just \$5!
(YES...JUST FIVE DOLLARS!)

NEW

<http://www.westminsterastro.org>

St*r Points for November...

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One week earlier we had a partial solar eclipse that occurred at sunset. From New Windsor there were low clouds near the horizon obscuring the sun. Only glimpses of the solar disk were visible through breaks in the clouds using proper filtration. But even these short peeks revealed the sun's dented right side where the darkened moon was passing in front of it. Westminster Astronomical Society (WASI) member Slava Murygin posted a time-lapse video on his blog that documents the sun's peek-a-boo game (slavaastro.blogspot.com).

Skies were a little clearer farther south. Alin Tolea saw the partial eclipse clearly from Georgetown in Washington.

The October encounter between Mars and Comet C/2013 A1 (Siding Spring) went off without a hitch. NASA put out some photo shopped images of the two together. They were a difficult pair to image because of their brightness difference. Either Mars would be overexposed to make the comet look good, or the comet would be excessively faint to make Mars look good. Thus it was necessary for NASA to employ the darkroom to make them both shine.

In early October there was a sunrise lunar eclipse. The night before brought heavy rain to the area, so it was a surprise waking up at 5 a.m. to a full moon in a clear sky. The moon slowly slipped into the earth's shadow as morning twilight increased. Near the end, shortly before sunrise, the totally eclipsed moon set beautifully into a colorful cloudbank.

I've posted a few photos taken at both eclipses on the Starpoints web site (starpoints.org). Scroll down to the "Features" section and look for "images of lunar and solar eclipses in Carroll County during 2014." The images of the lunar eclipse were shot through a telescope loaned by WASI.

You heard that right: WASI has telescopes that its members may borrow. It's a good way to get some hands on experience with a telescope so that you can try before you buy. For membership information, visit their web site at WestminsterAstro.org.

Another good way of learning about telescopes before buying is by attending WASI's annual Telescope Buyers' Workshop (TBW) at Bear Branch Nature Center at 7:30 p.m. on Wednesday, November 12. Gary Hand of the Hands-On-Optics telescope store in Damascus will be on hand to share buying tips for first time telescope buyers and talk about what's new for current telescope owners. No matter what experience level you are, he has plenty of useful advice and will answer all of your questions.

If you're a Santa Claus looking for a telescope for Christmas, this is your chance to do it right. It doesn't matter who you're buying it for or where you're buying it from. The important thing is that you learn as much as you can before parting with your hard earned money. But be careful – you may end up with the telescope you need instead of the one you want.

President's Message

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Here at our home at the Bear Branch Nature Center, work continues on the Blaine Roelke Observatory. It is currently in the final stages of the construction. The club will be furnishing the interior with all the necessities once the finishing touches are complete from the installation and construction. Those of you who attended last month's meeting saw the Celestron C-14 telescope to be installed. During the meeting, one of our members asked about Observatory Rules. As a reminder, the Observatory Committee has a draft out for review and comment. I encourage all of our members to give input to this document. The Blaine Roelke Observatory will be owned by the County when it becomes operational but the agreement we have in place grants the WASI membership access and operation of the Dome so it is imperative that the Rules put in place assure this access

In Taneytown, member Erich Bender continues to lead our efforts to get an agreement in place with the City of Taneytown for our planned Roll-Off Roof Observatory. The City's Parks Department and the Council have a few questions about the project and there are some site visits and plans they would like to see. I want to take this moment to thank Erich for his tireless efforts to keep this project on track.

For November, "Tony's Astronomy Target" is Cassiopeia. This constellation is on Meridian November 20th. Cassiopeia is one of the circumpolar constellations that can be seen year round. Cassiopeia, our club logo, looks like a "W" in the sky. The "W" of Cassiopeia is made up from five stars. From the left, they are Segin (Epsilon Cas), Ksora (Delta Cas), Navi (Gamma Cas), Shedar (Alpha Cas) and Caph (Beta Cas). Shedar is a double star with the primary star a bright yellow with its companion a faint blue. When looking at Cassiopeia, this star points the way the M31, the Andromeda Galaxy. Another pretty double is Eta Cassiopeia. This star lies between Alpha and Gamma but closer to Alpha. Eta is a double that splits easily and shows a yellowish primary star and reddish companion star. This double has magnitudes of 3.5 and 7.4. A few other objects to spot is M103, M52, NGC 7635, NGC 457 and NGC 129 with DL Cassiopeia. M103 is a faint, small open cluster with magnitude of about 7.5 sitting near Ksora. It will show about 20 bright stars and many more faint ones. M103 looks like a fuzzy patch. M52 is another open cluster which lies a little further away. To spot it, strike a line from Shedar to Caph. Keep going about the same distance in that line and you'll see it. M52 shines at about 7th magnitude. It's a beautiful open cluster of bright stars and has a bright red star to mark its place in the heavens. Very close to M52 is NGC 7635, the Bubble Nebula. You'll need a larger telescope to see this. NGC 457 is known as the Owl Cluster. This pretty cluster is composed of about 100 stars that form the shape of an owl. In this cluster is Phi Cas, a bright double star made up of a 5th magnitude yellow and a 7th magnitude blue which are the owl's eyes. To find the Owl, strike a line from Segin to Ksora and go little further and you should spot this 6.5 magnitude beauty. The last object I want to point out is DL Cassiopeia. Strike a line from Navi to Caph. Stop halfway and you'll find NGC 129, a faint open cluster containing DL Cassiopeia. DL is a pulsating yellow giant star varying in magnitude from 8.6 to 9.3. This target can be a challenge to find but I encourage you to try. Cassiopeia is a wonderful constellation that never leaves our stargazing skies and is one of my favorites. Visit this ancient queen for a nice evening out.

Clear Skies

Tony Falletta

Launch Information

You see the discussions on the WASI Astronomy Groups. You see information in the newspaper or hear about it on the radio. But where does the information about launches come from?

Here are some resources for launches that can, potentially, be seen from our area:

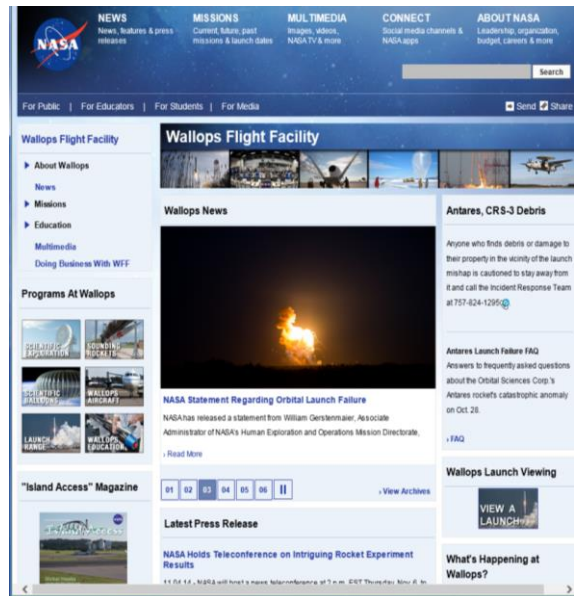
NASA's Wallops Island Facility:

<http://www.nasa.gov/centers/wallops/home/>

This site will provide all the information you need for launches at this facility. They even provide good viewing locations and other helpful information.

In addition, if you keep an eye out, you can grab opportunities to get press credentials or VIP tours of the facility.

Finally, there are links to social media sites. Why is this important? This is a very good way to keep up to date on launch activities from the field without chewing up a lot of data on your smart phone.



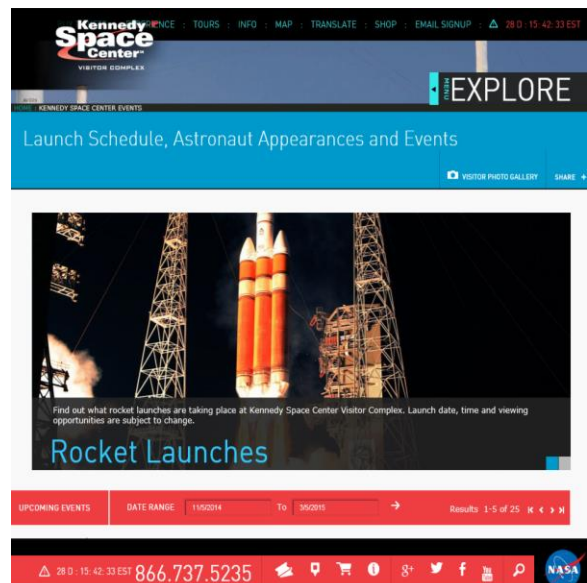
Kennedy Space Center

<https://www.kennedyspacecenter.com/events.aspx>

This site is geared a little more toward the space center experience but still provides very useful launch information.

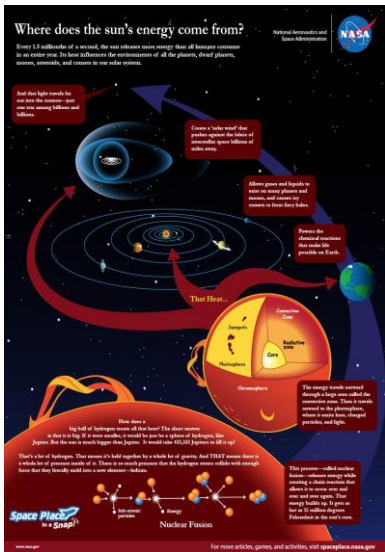
If you happen to be in the area, they also have schedules for astronaut appearances and other special events happening at the complex.

Again, there are links to social media sites. Social media is gaining speed as a quick way to get time sensitive information. NASA has gotten very good at sending out timely and informative tweets and Facebook posts. You can also follow other NASA programs via this avenue...did you know that the Mars Rover Opportunity has its own Facebook page?



NASA Space Place ...

Heliophysics



Heliophysics

The sun is really, really hot. Every 1.5 millionths of second, it releases more energy than all humans consume in an entire year. But where does all that energy come from? Space Place's animated series "Space Place in a Snap" tackles this important question in its latest episode. Even better, it comes with a sweet poster, too! Check it out at:

<http://spaceplace.nasa.gov/sun-heat>.

WASI Café Press Store...

Ever wonder where all that great, WASI logo, gear comes from? Well...wonder no more!

Visit our CafePress store http://www.cafepress.com/wasi_store and find dozens of items with our logo. Items such as hats, shirts, mugs, baby clothes, dog clothes, clocks, cell phone cases, license plate frames, and much, much more.

A portion of each sale comes back to the club. So help the club and get some really cool things for yourself or your loved ones!



James Webb Space Telescope Sun Shield

Quick foreword by Dave Gede

Recently, I got a chance to tour the Northrop Grumman facilities in Redondo Beach, CA. Part of that tour included a chance to see the JWST integration room and the sun shield test facility. Before the tour I was much more excited to see the integration room, but as it turned out the tour of the sun shield was much more interesting.

I was in the room that you see in the picture and was actually sitting on the floor, under the shield, just past the green ladder. Jim Flynn was our tour guide and was a fascinating person to meet. The engineering that goes into this, seemingly secondary, piece of equipment is amazing. It was a thrill to be here and even more fun to see in on the NASA web site.

NASA Article:

James Webb Space Telescope Sunshield Test Unfolds Seamlessly

A major test of the sunshield for NASA's [James Webb Space Telescope](#) was conducted recently by Northrop Grumman in Redondo Beach, California. For the first time, the five sunshield test layers were unfolded and separated; unveiling important insights for the engineers and technicians as to how the deployment will take place when the telescope launches into space.

"These tests are critical and allow us to see how our modeling works and learn about any modifications we may need to make in our design as we move into sunshield flight production," said Jim Flynn, Webb sunshield manager.

The three-day test took place in July, taking seven engineers and six technicians about 20 hours to complete. On orbit, the sunshield will take several days to unfold.

"Tests on the ground are a little bit tricky because we have to account for gravity," says Flynn. "Webb won't face those same challenges in space. To overcome challenges on the ground, our technicians came up with the idea to rest the layers on a structure of metal beams covered by plastic."

The tennis court-sized sunshield, which is the largest part of the observatory, will be folded up around the Webb telescope's mirrors and instruments during launch. As the telescope travels to its orbit one million miles from Earth, it will receive a command to unfold and separate the sunshield's five layers into their precisely stacked arrangement with its kite-like shape.

The sunshield separates the observatory into a warm, sun-facing side (reaching temperatures close to 400 degrees Fahrenheit), and a cold side (185 degrees below zero) where the sunlight is blocked from interfering with the sensitive telescope instruments. It provides the instruments with an effective sun protection factor, or SPF, of one million.

The sunshield's membrane layers, each as thin as a human hair, are made of Kapton, a tough, high-performance plastic coated with a reflective metal. On orbit, the observatory will be pointed so that the sun, Earth and moon are always on one side, with the sunshield acting as an umbrella to shade the telescope mirrors and instruments from the warmer spacecraft electronics and the sun.

Northrop Grumman subcontractor NeXolve is currently manufacturing the flight sunshield layers at their facilities in Huntsville, Ala. The five flight layers will be delivered to Northrop Grumman in 2016, when extensive testing will continue, followed by integration with the entire observatory.

James Webb Space Telescope Sunshield Test Unfolds Seamlessly

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For more information on the James Webb Space Telescope, please visit:

<http://www.jwst.nasa.gov/>



Image Credit: Northrop Grumman/Alex Evers

NASA's Space Place article for this month was only the poster that can be found by clicking on the link in the ad for Heliosphere on page 6. I am hoping that they will return to full articles next month. If not, we will begin exploring new resources for our spotlight article of the month.