

# The Mason-Dixon Astronomer



## February Meeting:

- Wed., Feb. 12<sup>th</sup> – 7:30 pm  
Bear Branch Nature Center
- **Dr. Marc Swisdak**  
“The Voyager Mission and the Edge of the Solar System”

## St\*r Points

### Venus is February's Morning Star

February 2014 – Curt Roelle

Early risers this month are greeted by the brilliant beacon planet Venus brightly shining in the morning twilight. After a great performance in December's evening sky, the planet passed through inferior conjunction – passing between the earth and sun – in January and is currently entering a morning apparition that will be its best in 2014.

With sunrise on the February 2nd “cross quarter day” (midpoint of winter) occurring at 07:15 a.m. a person doesn't necessarily have to rise all that early to catch Venus. Venus is so bright that it may still be visible in a clear sky at 07:00 a.m., but try 30 minutes before sunrise just to be certain. The luckiest observers will have a toasty bed located next to window facing south or east that they won't even have to crawl out of in order to see it.

Venus will be the brightest thing in the sky, 20 degrees or higher over the southeastern horizon – depending on the time of observation. The later you observe the lower Venus is in the sky.

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## Dinner With Our Speaker!

- Wed., Feb. 12<sup>th</sup> – 6pm.
- Harry's Main Street Grill  
65 W Main Street  
Westminster, MD 21157

## President's Message

February 2014 – Tony Falletta

Greetings Fellow Astronomers!

February is here and I have no doubt we are eagerly looking forward to the warmer temps of spring.

Our annual officer elections were held at the annual January business meeting. Congratulations to the officers elected to serve with me. The 2014 WASI Officers are:

President – Tony Falletta  
1st Vice President – Christian Ready  
2nd Vice President – Jim Reynolds  
Treasurer – Vanessa Thomas  
Secretary – Steve Conard

Vanessa takes the treasurer reins over from Wayne “Skip” Bird. Skip has served as our treasurer for many years. I personally, and I'm sure many of my fellow club members thank Skip for his tireless performance as treasurer. Skip truly is one of WASI's bedrock members who has been a true asset to the club. Although Skip is no longer treasurer, he remains our Outreach Coordinator. As everyone is probably aware, the words, “Outreach” and “Skip” are synonymous in WASI. Talk to someone who has attended a WASI sponsored Outreach event (and there are many!) and they would likely say, “I met some guy named Skip there, what a great guy!” Outreach is one of the things that WASI is known for due in very large part to Skip Bird.

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## February Meeting – Guest Speaker



Dr. Marc Swisdak (University of Maryland)

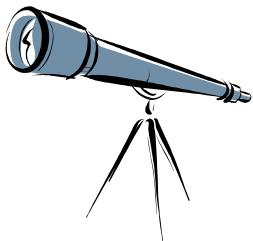
*"The Voyager Mission and the Edge of the Solar System"*

During the summer of 2012 the Voyager 1 spacecraft passed the heliopause, the boundary separating our solar system from interstellar space, and marked yet another in a long line of firsts for the Voyager program since the launches of the twin spacecraft in 1977. Along with their famous planetary discoveries, the Voyagers have upended our understanding of the outer solar system. I'll describe what was thought before the missions, how data from the spacecraft tested those theories, what we now believe to be the case, and what the future holds for the farthest man-made object from Earth.

### Bio:

Dr. Marc Swisdak received his Ph.D. in astrophysics from the University of Colorado at Boulder. After post-doctoral positions at the University of Maryland and the Naval Research Laboratory he became a research scientist at the University of Maryland. His research interests include the outer heliosphere, solar flares, and the Earth's magnetosphere.

## Upcoming Events From Our Calendars



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

## 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>

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

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For those who do brave the cold and take a telescope outside, Venus will exhibit a small crescent shape reminiscent of the moon. Venus' thick clouds are generally featureless but persistent observers should notice the crescent slowly fattening from day to day until it appears half full in late March. By then Venus will be rising two hours before the sun.

Although Venus is one of the five classical planets known since antiquity, Pythagoras is sometimes given at least some credit in its discovery. This is because he deduced that the planets known as the "morning star" and "evening star" were one and the same. The ancient Babylonians have also been credited with making this discovery a thousand years earlier.

Venus is the second planet from the sun and is therefore much hotter than third planet, earth. How much hotter? Think of an oven boiler and add a few hundred more degrees. Venus' average temperature is around 865°F. The atmospheric pressure on Venus is also a crushing 90 times that of Earth's.

That's above the operating temperature of most devices which is why Venus is a difficult and harsh environment for visiting spacecraft. Here's a brief history of landing missions to the surface of Venus.

Eight Venus landers from the Soviet Union's Venera series transmitted data for a combined total of under 10 hours from the planet's surface. Venera 7 (1970) landed and transmitted a weak signal for 23 minutes. Venera 8 (1972) landed and transmitted for 50 minutes. Veneras 9 and 10 (1975) operated on the surface for 53 and at least 65 minutes, respectively. Veneras 11 and 12 (1978) landed and operated for at least 95 and 110 minutes, respectively. Veneras 13 and 14 (1981) landed and survived for 127 and 57 minutes, respectively.

In 1985 two more landers from the Soviet Union touched down on Venus. The redundant Vegas 1 and 2 transmitted data from the surface for 56 and 57 minutes, respectively.

No other countries have attempted to soft land spacecraft on Venus.

## WASI CafePress 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](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!



## President's Message

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My fellow officers and I are eager and ready to move the club forward into the 2014 year. There are some exciting events occurring on our horizon. The long awaited Observatory Project is coming to fruition. The Roelke Family has donated a 3 meter Ash- brand steel dome and a 14" Celestron computer controlled Schmidt-Cassegrain telescope which is planned to be placed at BBNC. WASI, Frank Roelke, and Carroll County are working diligently to have the observatory operating by this summer. Once installed, it will be named the "Blaine Roelke Observatory" in honor of Frank's father.

As you know WASI had planned to have a roll off roof observatory. WASI has spent many years raising funds to make this happen. When Frank Roelke informed us of his family's desires and generous gift, we just couldn't say no. Nothing says "astronomy" like a domed observatory and having one installed at our home at BBNC is truly a dream come true. As we pursued this new path to the stars, we assumed a roll off roof observatory would never come to be. But wait! Member Erich Bender approached the observatory committee and informed us of Taneytown's desire to have an observatory in their town. We are currently in discussion with Taneytown officials to make this happen. As it stands now, there is an excellent chance that WASI will have access to not one but two observatories. Just imagine yourself wanting to do some observing with a large telescope and simply driving to BBNC or Taneytown to do it!

Our meetings will continue on the same format as this past year. Curt (Roelle) will be setting up speakers for our upcoming meetings.

Our February meeting will have Dr. Marc Swisdak of the University of Maryland as the featured speaker. The title of Dr. Swisdak's talk is, "The Voyager Mission and the Edge of the Solar System."

The meetings will conclude promptly at 9pm so we can spend some time observing (assuming the skies cooperate!). When you come to the meetings, bring your telescope to set up. If you prefer, just bring your binoculars. Stargazing is always more fun when done as a group. Visitors come to our meetings every month because they have a genuine interest in astronomy, like to hear our speaker's talks, perhaps get some equipment advice and hope to do some stargazing. Stargazing after the meetings is not only fun but a great way to reach out to our visitors. Many times people join our club simply due to a friendly handshake, some good conversation and a peek through an eyepiece.

The newly renovated Planetarium is up and running and 2nd VP Jim Reynolds remains our Planetarium Director. If you haven't been to the planetarium lately you're in for a real treat. The renovations include a new computerized system and some extremely comfortable seats. If you would like to help Jim out with the planetarium program, just let him know.

We will be continuing our member observing events this year. Secretary Steve Conard and member Paul Henze revived this last year and have done a great job. Look for an article by Steve and Paul for details.

On the subject of observing, I would like to encourage all of our members to take those clear sky moments to look overhead. In the cold of winter, it's difficult to set up a telescope and gear but what I have done is keep my 10x50 binoculars handy. The winter sky can be beautifully clear and I hate to pass up those opportunities. I spent quite a few nights in January enjoying all that Orion offers, the Hyades in Taurus and of course, the Pleiades. Binocular astronomy is a great way to stay engaged on the fly.

As I look at our upcoming club year, I see WASI as a vibrant, growing club whose home at BBNC has good night skies, a fully equipped and functional observatory, a very cool planetarium and ,of course, a great group of amateur astronomers. I truly believe that together, WASI and BBNC make for a true treasure and great asset to Carroll County. I'm proud to be a member and honored to be your President and hope to serve you well.

Clear Skies

Tony Falletta

## Meet the 2014 WASI Officers...

### President: Tony Falletta



Tony joined WASI in 2007. In order to support his astronomy habit he is an airline pilot (captain) for Southwest Airlines. When not flying or observing, Tony enjoys camping, sailing, and biking.

When asked why he joined WASI, his response was "I've always loved looking up into space and decided I wanted to share my passion with other amateur astronomers to enjoy the camaraderie that stargazing brings."

Tony's primary goals for next year include making the observatory a reality and trying to grow the membership.

One thing you may not know about Tony? "I once went skydiving. As I left the plane, I actually said to myself, "Now why did you just jump out of a perfectly good airplane?!"

### 1<sup>st</sup> Vice President: Christian Ready



Christian joined WASI in 2012 but due to his high level of involvement most of us feel he has been with us much longer.

He has been working in and around astronomy since the age of 13 when he started working at the Sproul Observatory at Swarthmore College. He continued to pursue this passion through college at Villanova University, working at the Space Telescope Science Institute, and NASA's Goddard Spaceflight Center.

He is currently an instructor at the Launch Pad Astronomy Workshop where he helps teach writers, editors, filmmakers, and other creative professionals about astronomy. He comments... "It's my opportunity to combine my loves of astronomy, teaching, and science fiction into one."

Christian's love of sharing our hobby began early at the Sproul Observatory public nights. He continued this public outreach throughout his career and now has his own blog which can be found at <http://www.christianrady.com/>.

### 2<sup>nd</sup> Vice President: Jim Reynolds



Jim has been a member of WASI since 2007. He works as a college instructor and is currently a lab instructor at the Community College of Baltimore County in Essex.

He found WASI when he began teaching astronomy at Carroll Community College. "My interest in astronomy had been rekindled, plus I wanted to learn more about stargazing and astronomy." Jim quickly became involved in the club serving two terms as President and now runs the club's planetarium.

His goal for the club, in 2014, is seeing the completion of the dome observatory at Bear Branch Nature Center.

When not working or observing, Jim restored a 1977 Corvette that he continues to improve. He also has a passion for classic movies..."especially Doris Day flicks."

A little known fact about Jim? "As a child, I was on the "Bozo the Clown" show on Channel 20 (Washington, DC), & I got to meet John Banner, who played "Sgt. Shultz" on Hogan's Heroes."

## Meet the 2014 WASI Officers...

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### Treasurer: Vanessa Thomas



Vanessa joined the club in 2008 and has stepped right into a leadership role. She most recently served as President and will be taking over this very demanding office of treasurer (last held for as long as anyone can remember by Skip).

Vanessa works as a science writer. She is currently writing for the Office of Public Outreach at the Space Telescope Science Institute.

As with many of the officers this year, her primary goal in 2014 is to help get a WASI's observatory established. I am sensing a theme here!

She found our club when she moved to Maryland. WASI was the closest club to her home and..." After attending a couple meetings, I stuck around for the friendly people, the interesting presentations, and the public outreach (which I enjoy)."

If you have been reading her President's messages, over the last year, you know that Vanessa's interests are varied. Beyond astronomy she lists traveling, roller coasters, motorcycling, electric vehicles, baseball, college football, and drum & bugle corps as interests. Yikes...and I thought I had a lot of hobbies!

Vanessa also told us "I've been lucky enough to ride the ultimate roller coaster, experiencing "weightlessness" (microgravity) on NASA's KC-135 ("Vomit Comet") airplane. It's probably the closest I'll get to my dream of flying in space!"

Vanessa in pre-flight hypoxia training in NASA's hyperbaric chamber in Houston.



### Secretary: Steve Conard



Steve joined WASI in 2006. He has served the club in official and un-official ways since he first joined. Most recently he has been organizing the club's observing events. Steve has, very quietly, guided the club in many decisions and directions over the past 7 years. He continues to count, getting the observatory constructed at Bear Branch Nature Center, as his primary goal for 2014.

When he got back into astronomy, after a long hiatus, he began searching for a local astronomy club. Since WASI was close, he decided to give it a shot. We are glad he did.

Steve works as an optical systems engineer for Johns Hopkins-Applied Physics Laboratory in Laurel. Among other tasks, he is lead engineer for the LORRI (LOng-Range Reconnaissance Imager) instrument on the New Horizons mission to Pluto and the Kuiper Belt. Steve is going to be very busy over the next year or so!

When not working or observing, Steve enjoys kayaking, bicycling, and minor league baseball. He is also the Education and Outreach Coordinator for the Metropolitan Guinea Pig Rescue.



## Surprising Young Stars in the Oldest Places in the Universe

By Dr. Ethan Siegel

Littered among the stars in our night sky are the famed deep-sky objects. These range from extended spiral and elliptical galaxies millions or even billions of light years away to the star clusters, nebulae, and stellar remnants strewn throughout our own galaxy. But there's an intermediate class of objects, too: the globular star clusters, self-contained clusters of stars found in spherically-distributed halos around each galaxy.

Back before there were any stars or galaxies in the universe, it was an expanding, cooling sea of matter and radiation containing regions where the matter was slightly more dense in some places than others. While gravity worked to pull more and more matter into these places, the pressure from radiation pushed back, preventing the gravitational collapse of gas clouds below a certain mass. In the young universe, this meant no clouds smaller than around a few hundred thousand times the mass of our Sun could collapse. This coincides with a globular cluster's typical mass, and their stars are some of the oldest in the universe!

These compact, spherical collections of stars are all less than 100 light-years in radius, but typically have around 100,000 stars inside them, making them nearly 100 times denser than our neighborhood of the Milky Way! The vast majority of globular clusters have extremely few heavy elements (heavier than helium), as little as 1% of what we find in our Sun. There's a good reason for this: our Sun is only 4.5 billion years old and has seen many generations of stars live-and-die, while globular clusters (and the stars inside of them) are often over 13 billion years old, or more than 90% the age of the universe! When you look inside one of these cosmic collections, you're looking at some of the oldest stellar swarms in the known universe.

Yet when you look at a high-resolution image of these relics from the early universe, you'll find a sprinkling of hot, massive, apparently young blue stars! Is there a stellar fountain of youth inside? Kind of! These massive stellar swarms are so dense -- especially towards the center -- that mergers, mass siphoning and collisions between stars are quite common. When two long-lived, low-mass stars interact in these ways, they produce a hotter, bluer star that will be much shorter lived, known as a blue straggler star. First discovered by Allan Sandage in 1953, these young-looking stars arise thanks to stellar cannibalism. So enjoy the brightest and bluest stars in these globular clusters, found right alongside the oldest known stars in the universe!

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Globular Cluster NGC 6397. Credit: ESA & Francesco Ferraro (Bologna Astronomical Observatory) / NASA, Hubble Space Telescope, WFPC2.

Learn about a recent globular cluster discovery here: <http://www.nasa.gov/press/2013/september/hubble-uncovers-largest-known-group-of-star-clusters-clues-to-dark-matter>.

Kids can learn more about how stars work by listening to The Space Place's own Dr. Marc:  
<http://spaceplace.nasa.gov/podcasts/en/#stars>.