CONSTELLATION

the official publication of Bucks-Mont Astronomical Association, Inc

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BMAA Website Update

- by Gary Sprague

Late in August, the modifications to the BMAA website were completed and it was migrated to replace the existing website. The web "address" still remains **bma2.org** but the look, feel and operation of the website has changed completely. Content can now be updated and added by members, timely "alerts" can be issued and photos by members can be showcased.

The new website was the collaborative work of a small group within BMAA but all the development work was done by John Neyer, a professional website designer. We were extremely fortunate to have John involved with this work; it would not have been done without him.

Dwight Dulsky and Gary Sprague thank Joh Neyer for his work on the new BMAA website.

The website has and will continue to be an important outreach and communication tool for BMAA. The original website was the work of James Moyer and it served the needs of BMAA for many years and we are indebted to Jim's work and support over the years. Because members can update the new website directly, Jim can take a much deserved break from the routine support that was previously required of him.

Take a look at our new website **bma2.org** !

- BMAA president Gary Sprague provided this article [-ed]

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We had a great night with our Perseid Meteor/StarWatch at Nockamixon State Park, August 13. We began the evening with a club picnic followed by the celestial fireworks of the Perseids. Most of our 100+ visitors saw a couple of meteors during the night along with Saturn, and other objects under the nice dark skies of the park. I counted 10-12 nice bright meteor streaks between 9:30 and midnight. Thank you Nockamixon for hosting this event next to the beautiful lake.

Thanks to all the members who came not only to the picnic, but also to share with the public, pretty cool to have so many scopes on the field. ***- Dwight Dulsky***

2015 BMAA Officers:
Gary Sprague, President
Dwight Dulsky, Vice President
John Urbanchuk, Secretary
Ed Radomski, Treasurer
info@bma2.org

BucksMont Astronomical Association, Inc

Minutes September 2, 2015

The September 2015 BMAA meeting was held on Wednesday September 2, 2015 at the Upper Dublin Lutheran Church. 27 members and guests were in attendance.

President Gary Sprague led off the meeting at 7:30p with an overview of Club activities in August and upcoming events for the remainder of 2015. The keynote Club event in August was a successful Meteor/Star Watch and summer family picnic at Nockamixon State Park on August 13. The event was well attended and the Perseids cooperated!

Gary led a discussion of the upcoming lunar eclipse, which will happen on September 27 and reminded the membership that BMAA will hold a Lunar Eclipse observation session at Tyler State Park.

Gary introduced the newly renovated Website and publically thanked the developer John Neyer for his hard work on the new site, and Jim Moyer for his years working on the original site.

The feature presentation of the evening was an outstanding lecture on eyepieces by Bob Black of Skies Unlimited. Bob discussed eyepieces and their impact on our visual observing experience. He covered the fundamentals of eyepiece design and use, and drew on his extensive experience to introduce the concepts of scaled designs (Kelners, Orthos, and Plossls) vs the more modern proprietary designs and why that matters when selecting and updating your eyepiece collection. Bob brought in and circulated several examples of eyepieces and set up a scope to compare eyepiece design.

The next meeting will be on Wednesday October 7 and will feature a presentation on Black Holes by Kelli Spangler.

The meeting concluded at 9:00p.

Respectfully submitted,
John Urbanchuk, Secretary

The CONSTELLATION is the official publication of the Bucks-Mont Astronomical Association, Inc, a 501(c)(3) non-profit organization incorporated in the Commonwealth of Pennsylvania and exists for the exchange of ideas, news, information and publicity among the BMAA membership, as well as the amateur astronomy community at large. The views expressed are not necessarily those of BMAA, but of the contributors and are edited to fit within the format and confines of the publication. Unsolicited articles relevant to astronomy are welcomed and may be submitted to the Editor. Reprints of articles, or complete issues of the CONSTELLATION, may be available by contacting the Editor at the address listed below, and portions may be reproduced with permission, providing proper acknowledgment is made and a copy of that publication is sent to the Editor. Contents of this publication, and format (hard copy or electronic) are copyright ©2015 BMAA, Inc. Submission deadline for articles is the 15th of the month prior to quarterly publication.

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Observing Report

September 15, 2015 - Coyle Field

– ***by Igor Peshenko***

On Thursday night, Sept 15, 2015, four BMAA/CFA members, Rodney, Terry, Bob and myself, went to Coyle Field, NJ. Unfortunately, the sky conditions were far from being perfect that night. The sky was crystal clear all day long but as soon as we arrived at Coyle very thin clouds, which appeared as bright as the Milky Way, covered the sky and they stayed until we left the field around 2 am. My astro imaging equipment behaved very well which was rather unusual. I kept taking more and more sub frames hoping that their quantity would compensate for their mediocre quality, thanks to poor sky conditions. This way I managed to take as many as 37 x 5 min images of cave Nebula, more than I had planned. Alas, Terry was less fortunate that night running into one issue after another with his equipment. Yet, I think he managed to overcome most of the problems and took a few shots of Cocoon nebula eventually. Rodney, another dedicated astrophotographer was also taking images using his setup... which was actually over a hundred miles away at BMVO remotely controlled via Internet. It was really amusing to watch Rodney sending commands to his telescope and camera and receiving images on his laptop right at Coyle field. At the same time he explored the night sky through his new 8" Edge HD. Bob also observed countless number of various objects through the rare clearings in the clouds with his 10" dob... They both kindly let me to peek through their scopes at various objects. As always, I had my 70x11 binoculars which I used to spot Uranus and Neptune just before we left.

This is the image of Cave Nebula I took on that night through thin clouds. The Cave Nebula (Sh2-155 or Caldwell 9) is a dim and very diffuse bright nebula within a larger nebula complex containing emission, reflection, and dark nebulosity. It is located in the constellation Cepheus.

Orion ED80T CF Triplet Apochromatic Refractor with Astro-Tech AT2FF field flattener on Celestron advanced VX mount, guided - 50 mm finderscope, f3.2/ QHY 5L-II; Canon 1100D, full spectrum, cooled - EXIF temperature -4 to -6C, 2" Qrion Sky Glow Astrophotography Filter, ISO 800, 37 x 5 min
Processing: IRIS v. 5.59 and Photoshop CS2

– ***BMAA member Igor Peshenko provides Observing Reports [-ed]***

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Total Eclipse of the Moon: September 27, 2015

- by Igor Peshenko

Lunar Eclipse ***- photo by Igor Peshenko***

This is one of the images I managed to take during our unfortunate Lunar Eclipse watch at Tyler Park in Newtown on September 27, 2015. The image captures the moment when the Moon almost entered the Earth's shadow. A few stars are seen in the background. This is a single 10 sec exposure taken at ISO100 through 80 mm refractor and ... some clouds.

Orion ED80T CF Triplet Apochromatic Refractor with Astro-Tech AT2FF field flattener; Celestron advanced VX mount, Canon 1100D, full mod, cooled - EXIF temperature -4 to -6C, 10 sec at ISO 100
Processing: IRIS v. 5.59 and Photoshop CS2

– ***BMAA member Igor Peshenko provides Observing Reports [-ed]***

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StarWatch Report

Lunar Eclipse at Tyler Park

– by Dwight Dulsky

Yes, September 27 was an odd night waiting for the clouds to part. But it actually was nice just sitting and chatting with the folks who ventured out for this event. There were a surprisingly decent number of people who came hoping, like we were, that the Moon would just give us a fantastic show. But, that was not to be for our neck of the woods. If you were east or to the north things were better.

I think those of us who were looking over Igor's shoulder at Tyler can really appreciate that he was able to get anything at all given the conditions. It was certainly a challenge as there was nothing visible to align on. The Moon would tease us all night by just showing itself now and then for a few seconds. Focusing was a major challenge as even the best moments were still shrouded in some clouds.

But, give the telescopes and binoculars credit for taking what our eyes could barely see and pulling in the extra photons to something visible. So this is a great pic under extraordinary poor conditions.

We did meet a lot of nice people and all enjoyed the warm night talking about space and the stars.

Also, prior to the Tyler event Gary and Robert did an outreach event at Temple Judea in Furlong (near Doylestown). Although they too were clouded out, they both did a presentation to the attendees about the eclipse and their astronomical equipment. Thanks gentlemen for taking the time to do that and then coming down to Tyler.

A friend of mine Jeff Chopick in upstate PA, who is not an astrophotographer was able to get these pics with a 500mm telephoto lens in clear skies:

- photo by Jeff Chopick

- photo by Jeff Chopick

– BMAA vice-president Dwight Dulsky provided this article [-ed]

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Space Place

Measure the moon's size and distance during a lunar eclipse

- by Ethan Siegel

The moon represents perhaps the first great paradox of the night sky in all of human history. While its angular size is easy to measure with the unaided eye from any location on Earth, ranging from 29.38 arc-minutes (0.4897°) to 33.53 arc-minutes (0.5588°) as it orbits our world in an ellipse, that doesn't tell us its physical size. From its angular size alone, the moon could just as easily be close and small as it could be distant and enormous.

But we know a few other things, even relying only on naked-eye observations. We know its phases are caused by its geometric configuration with the sun and Earth. We know that the sun must be farther away (and hence, larger) than the moon from the phenomenon of solar eclipses, where the moon passes in front of the sun, blocking its disk as seen from Earth. And we know it undergoes lunar eclipses, where the sun's light is blocked from the moon by Earth.

Lunar eclipses provided the first evidence that Earth was round; the shape of the portion of the shadow that falls on the moon during its partial phase is an arc of a circle. In fact, once we measured the radius of Earth (first accomplished in the 3rd century B.C.E.), now known to be 6,371 km, all it takes is one assumption—that the physical size of Earth's shadow as it falls on the moon is approximately the physical size of Earth—and we can use lunar eclipses to measure both the size of and the distance to the moon!

Simply by knowing Earth's physical size and measuring the ratios of the angular size of its shadow and the angular size of the moon, we can determine the moon's physical size relative to Earth. During a lunar eclipse, Earth's shadow is about 3.5 times larger than the moon, with some slight variations dependent on the moon's point in its orbit. Simply divide Earth's radius by your measurement to figure out the moon's radius!

Even with this primitive method, it's straightforward to get a measurement for the moon's radius that's accurate to within 15% of the actual value: 1,738 km. Now that you've determined its physical size and its angular size, geometry alone enables you to determine how far away it is from Earth. A lunar eclipse is coming up on September 28th, and this supermoon eclipse will last for hours. Use the partial phases to measure the size of and distance to the moon, and see how close you can get!

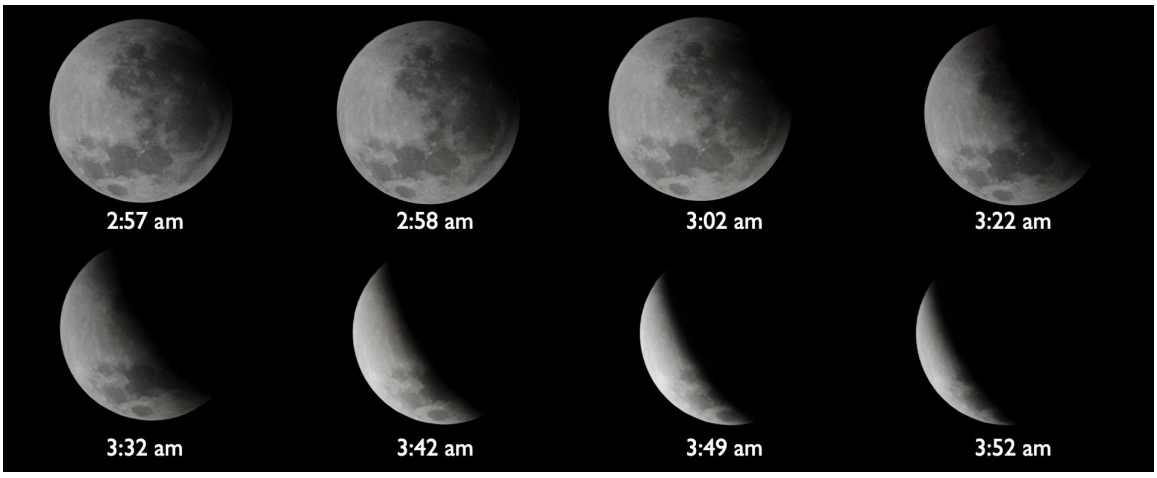

Image credit: Daniel Munizaga (NOAO South/CTIO EPO), using the Cerro Tololo Inter-American Observatory, of an eight-image sequence of the partial phase of a total lunar eclipse.

– ***Space Place is provided to astronomy clubs by NASA [-ed]***

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BMAA Member Registration Form

☐ Renewal

☐ New Member

Name _____

_____

Address _____

_____

_____

Telephone

Home _____

Cell _____

E-Mail _____

Dues are **$30.00** for an individual or **$40.00** for a family membership (more than one person at same address).

Make check payable to **BMAA and send to:**

BMAA
c/o Ed Radomski
36 Far View Road
Chalfont PA 18914

If you would prefer to register and pay using **PayPal** do not use this form**.** On the **PayPal** website send your payment to treas@bma2.org . Send it as a "purchase of goods" so that I receive your address. In the email section make the subject "Dues", include your telephone number and your preferred email address in the message area.

All BMAA meetings are open to the general public. We share observing highlights (including aurora sightings), astrophotographs and experiences. Meetings begin at 7:30p at Upper Dublin Lutheran Church, 411 Susquehanna Ave, Ambler PA 19002. Look for black and yellow BMA2 signs.

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