

# CONSTELLATION

the official publication of Bucks-Mont Astronomical Association, Inc

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Scott Petersen, editor

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## 2016 BMAA Year-End Update

*-by Gary Sprague*

A summary of our November and December monthly meetings:

Igor Peshenko gave us an excellent presentation in November about astrophotography, intermediate level. His presentation was filled with technical details and practical advice for anyone wanting to improve their astrophotography techniques. As is always the case with Igor, he also showed us some stunning examples of his work.

The December meeting was our annual show and tell meeting but we were also fortunate to have Ed Radomski give a presentation about star hopping with binoculars. He provided practical advice to improve your knowledge of the night sky, gained from his years of experience. He also provided advice about binocular selection and brought a number from his collection to show off.

In addition to Ed's presentation, Igor shared some of his recent photographs, Dwight gave a demonstration of a blue tooth speaker system used with his tablet and Chuck Spann showed off some of his meteorites and historical artifacts.



Mike and Sandy Bowdren examine some of the binoculars brought in by Ed Radomski

*- Gary Sprague, BMAA co-president, provided this article [-ed]*

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**Bucks-Mont Astronomical Association, Inc**  
**General Meeting Minutes**  
**November 2, 2016**

Location: Upper Dublin Lutheran Church, 411 Susquehanna Road, Ambler PA 19002

**Meeting called to order by Gary Sprague at 7:30p. In attendance: 20 members and guests**

Officers present: Gary Sprague (co-president), Lee Zagar (vice-president), Ed Radomski (treasurer), Robert Mittel-Carey (secretary)

- Gary shared photos of BMAA Nockamixon Community Day (Sept 16<sup>th</sup>)
- Upcoming outreach
  - Holland Elementary – “Astrofest” – Nov. 14<sup>th</sup>
  - Erdenheim Elementary – “Space Night”
- Bernie – Elections: All nominations by Dec. All incumbents nominated; seconded by Bernie.
- Other upcoming events
  - Nov. 14<sup>th</sup> – Montco Observatory Committee Meeting
  - Dec 7<sup>th</sup> – BMAA December Meeting “Show and Tell”
  - Jan 4<sup>th</sup> – BMAA January Meeting “Holiday Party”
- Reviewed November sky events
- Solar eclipse planning
  - Status of Trip?
  - Hand out cards
- Requests for 2017 star watches
  - Bowman’s Hill
  - Northampton
- Ed – Treasury report: current balance \$9,360

➤ **Main topic: Astrophotography: Intermediate Level Portable Set-Up – Igor Peshenko**

Igor gave a very detailed and informative presentation with some great photos on his portable set-up.

Respectfully submitted,  
Robert Mittel-Carey, secretary

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**Bucks-Mont Astronomical Association, Inc**  
**General Meeting Minutes**  
**December 7, 2016**

Location: Upper Dublin Lutheran Church, 411 Susquehanna Road, Ambler PA 19002

**Meeting called to order by Gary Sprague at 7:30p. In attendance: 25 members and guests**

Officers present: Gary Sprague and Dwight Dulskey (co-presidents), Lee Zagar (vice-president),  
Ed Radomski (treasurer), Robert Mittel-Carey (secretary)

- Gary distributed 2017 Observer's Handbooks to those who ordered them.
- Ed handed out 2017 membership cards to those who have renewed/joined.
- Montgomery County Community College Observatory review: all working well thus far with new Astrophysics 1600 mount.
- Reviewed 2017 star watch schedule draft
- Reviewed 2016 BMA2.org stats
- Elections: All incumbents re-elected
- January 4<sup>th</sup> meeting – "Holiday Meeting" trivia and pot luck
- Igor shared images from Blue Mountain vista and Coyle Field of several deep sky objects
- Donated to club – a "homemade" 6" Newtonian telescope
- Dwight presented how to use "OK Google" to answer astronomy related questions.

➤ **Main topic: Star Hopping With Binoculars – Ed Radomski**

Ed presented how he got interested in astronomy and learning to "star hop" with his family. He also gave some very good practical advice regarding binocular selection.

Respectfully submitted,  
Robert Mittel-Carey, secretary

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**2017 BMAA officers**  
**[info@bma2.org](mailto:info@bma2.org)**

**Gary Sprague**, co-president  
**Dwight Dulskey**, co-president  
**Lee Zagar**, vice-president  
**Robert Mittel-Carey**, secretary  
**Ed Radomski**, treasurer

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**Editor's Note**

The CONSTELLATION is your BMAA club newsletter and its success depends solely on your input. Please submit articles to me at: [constellation@bma2.org](mailto:constellation@bma2.org). I am trying to maintain a quarterly publication cycle, on or about the Solstices and Equinoxes with supplements as required. Thanks.

- Scott Petersen, editor

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# Capturing Venus in the Daytime

- by *Dwight Dulsky*

## Summary

Observing and photographing Venus in the daytime will be both challenging and fun providing you take precautions and do some preparation. Try photographing Venus monthly though out the year to watch it change phase. There are some stunning photo montages.

Venus is hard to miss as our “Morning Star” or “Evening Star”. She easily outshines her neighbors in the evening or dawn sky. For the most part in the evening, Venus is a point-n-shoot object, center her in the Telrad and away you go. However, tracking her down in daytime sky requires some unusual techniques and patience. But the rewards are very satisfying indeed. It’s definitely worth a try at your next solar event; your guests will be very surprised to see a view of a planet in broad daylight. The main problem of finding Venus or anything else in the daytime is a lack of familiar reference points.

## Precautions

Now the disclaimer - *Never look at the Sun naked eye or through any optical device (telescopes and binoculars) without proper solar filters. Permanent damage to both your eyes and equipment may occur. This technique is not recommended for children or inexperienced observers.*

In the daytime, Venus is likely to be tracking either ahead or behind the Sun by several degrees along the ecliptic. Realize that if Venus is just too close to the Sun, do not chance your eyes or equipment. Wait a few weeks till the planet moves a safe distance away. 1 hour of Right Ascension or 15 degrees gives you a little leeway. The best way to determine this is to verify Venus’s position with some planetarium software. Once you are sure Venus is at a safe distance proceed with caution. Children and persons not familiar with their equipment should never attempt this kind observation.

## Preparation

Prepare your scope for solar observing. Cap or cover all finder scopes and zero mag. finders. These are both useless and dangerous to leave uncovered. Put your solar filter in place right away. The bright light of the sun entering an unfiltered scope can generate so much heat that interior components can distort and begin melting. The first time I tried this technique I was unprepared for this close to Sun observing. Even though you are not looking directly at the Sun, it is in the vicinity. For your comfort and safety, set up a Sun shield. PST owners often employ these during their solar sessions. However, as they will tell you – in a breeze they will act like a sail catching the wind and set up image vibrations. You can construct inexpensive versions out of white foamboard from an art store. The devices will really help reduce sun glare. In addition, an old style photographers cloak over your head and eyepiece will help reduce daytime reflections on your eyepiece. I would avoid heavy black cloth as it will get mighty warm.

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### **A Needle in a Haystack**

Without the usual celestial signposts, locating Venus is like finding a needle in a haystack. Although you can get satisfying views of Venus anytime, you may experience poor seeing at mid-day due to atmospheric turbulence. Morning and late afternoon may yield a steadier image. Of course just after sunset and right before dawn are prime times as well, but this article's theme is daytime observing.

Probably the most difficult scope setup for this activity would be with dobsonian or Alt/Az type mounts. Not impossible, but definitely much more challenging. If you were to attempt this with that kind of equipment use the absolute lowest power eyepiece in your quest of Venus, you'll need it. An equatorial mounted or GoTo set up should get you in Venus's neighborhood much quicker. If you are adept with setting circles, you can use an equatorially mounted scope and R.A. / Dec. coordinates to locate the position of the planet. But, whether you are using the equatorial or GoTo set ups you need to Polar Align. Hmm, Polar Align in the daytime? How does that work? I'm strictly a portable observer with no permanent observatory. So, polar aligning is an every night affair. But, in the daytime you will need a compass and level. My CG-5 does not just turn on and know where it is. First, using the compass I roughly orient the tripod towards north. Next I level the tripod using an inexpensive bubble level from the construction stores. Now, I go and fine tune with my compass by compensating for magnetic declination for my area, which is roughly 11 degrees to the west. I want my tripod oriented as close to the celestial pole as possible. Magnetic north is too far off. I affix the mount, counterweights and scope next. Then I continue with the typical input of latitude, longitude and time. When it comes time for alignment, I choose Solar System Align and select the Sun as the target. On a CG-5 you will probably have to enable the scope to target the Sun in the **Utility menu**. They do this as a precaution so that inexperienced or unprepared observers don't accidentally aim an unfiltered scope at the Sun. My CG-5 gives me a warning about looking at the Sun without proper filters anyway and I take this as a good time just to check that the solar filter is indeed attached in front of my objective lens. Once I begin the process, the scope should slew to the Sun. Depending on how good your polar alignment is you may or may not nail it. I use my lowest powered 40mm eyepiece and start a methodical search.

There are some rather simple solar finder devices using a "**nomen**" (fancy word for perpendicular stick) that you may want to construct and try using. Usually, I can locate the Sun in my eyepiece fairly quickly. At this point, I align on the Sun. Now is, of course, a good time to check for elusive sunspots!

### **More precautions**

*Be careful and attentive during your observing session no matter what kind of setup you are using. An accidental mis-pressed key command could send your scope towards the Sun. Also, scopes that don't track could end up in the Sun's path if left alone for a period of time.*

If the scope seems to be tracking the Sun fairly well, you can use your keypad to slew to Venus. This should be just a short hop, skip and a jump. I always make sure the scope is well off the direct path of the Sun before taking the solar filter off. Be gentle when doing this so as to not knock your alignment off. Again using that low powered eyepiece, scan for Venus. With a little luck it should be there. Re-center as necessary and observe the tracking. Once you are satisfied that your scope is staying on target, you can try increasing the power.

- BMAA co-president Dwight Dulskey provided this article [-ed]

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January 2017

## Comet Campaign: Amateurs Wanted

*-by Marcus Woo*

In a cosmic coincidence, three comets will soon be approaching Earth - and astronomers want you to help study them. This global campaign, which will begin at the end of January when the first comet is bright enough, will enlist amateur astronomers to help researchers continuously monitor how the comets change over time and, ultimately, learn what these ancient ice chunks reveal about the origins of the solar system.

Over the last few years, spacecraft like NASA's Deep Impact/EPOXI or ESA's Rosetta (of which NASA played a part) discovered that comets are more dynamic than anyone realized. The missions found that dust and gas burst from a comet's nucleus every few days or weeks—fleeting phenomena that would have gone unnoticed if it weren't for the constant and nearby observations. But space missions are expensive, so for three upcoming cometary visits, researchers are instead recruiting the combined efforts of telescopes from around the world.

"This is a way that we hope can get the same sorts of observations: by harnessing the power of the masses from various amateurs," says Matthew Knight, an astronomer at the University of Maryland.

By observing the gas and dust in the coma (the comet's atmosphere of gas and dust), and tracking outbursts, amateurs will help professional researchers measure the properties of the comet's nucleus, such as its composition, rotation speed, and how well it holds together.

The observations may also help NASA scout out future destinations. The three targets are so-called Jupiter family comets, with relatively short periods just over five years—and orbits that are accessible to spacecraft. "The better understood a comet is," Knight says, "the better NASA can plan for a mission and figure out what the environment is going to be like, and what specifications the spacecraft will need to ensure that it will be successful."

The first comet to arrive is 41P/Tuttle-Giacobini-Kresak, whose prime window runs from the end of January to the end of July. Comet 45P/Honda-Mrkos-Pajdusakova will be most visible between mid-February and mid-March. The third target, comet 46P/Wirtanen won't arrive until 2018.

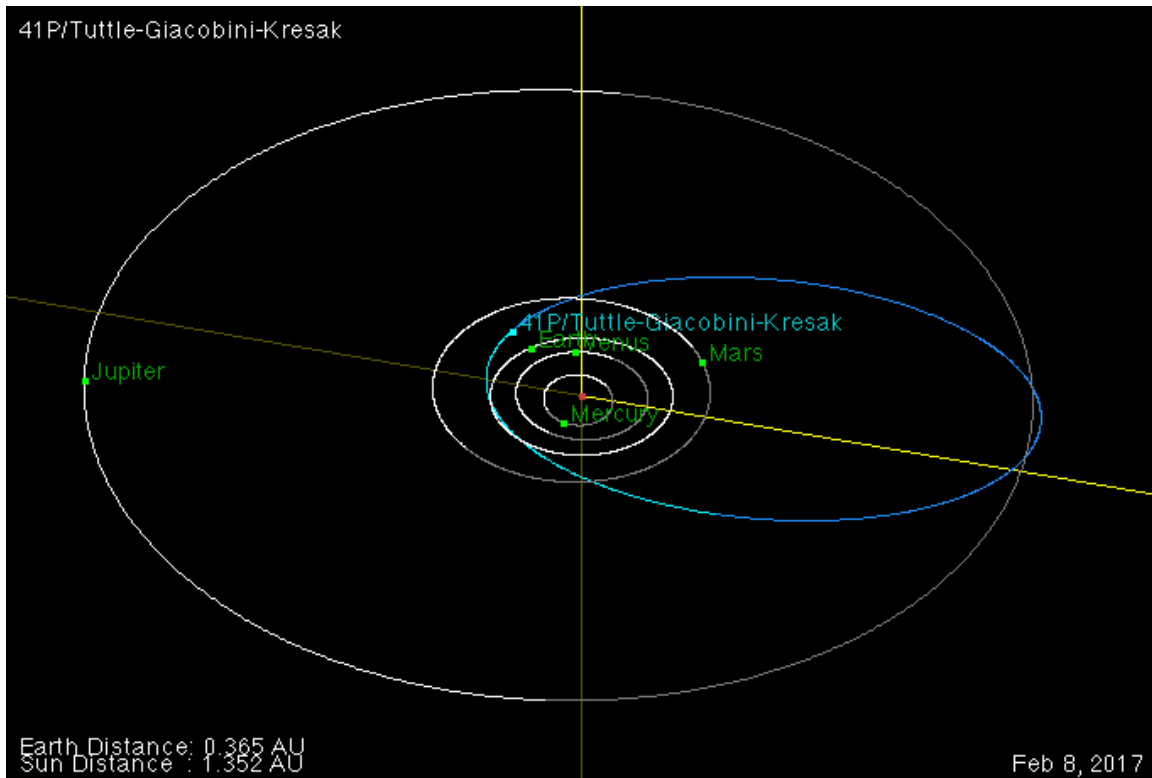
Still, the opportunity to observe three relatively bright comets within roughly 18 months is rare. "We're talking 20 or more years since we've had anything remotely resembling this," Knight says. "Telescope technology and our knowledge of comets are just totally different now than the last time any of these were good for observing."

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- Space Place, continued -

For more information about how to participate in the campaign, visit <http://www.psi.edu/41P45P46P>.

Want to teach kids about the anatomy of a comet? Go to the NASA Space Place and use Comet on a Stick activity! <http://spaceplace.nasa.gov/comet-stick/>



*An orbit diagram of comet 41P/Tuttle-Giacobini-Kresak on February 8, 2017—a day that falls during the comet's prime visibility window. The planets orbits are white curves and the comet's orbit is a blue curve. The brighter lines indicate the portion of the orbit that is above the ecliptic plane defined by Earth's orbital plane and the darker portions are below the ecliptic plane. This image was created with the Orbit Viewer applet, provided by the Osamu Ajiki (AstroArts) and modified by Ron Baalke (Solar System Dynamics group, JPL). <http://ssd.jpl.nasa.gov/sbdb.cgi?orb=1;sstr=41P>*

With articles, activities, crafts, games, and lesson plans, NASA Space Place encourages everyone to get excited about science and technology.

Visit [spaceplace.nasa.gov](http://spaceplace.nasa.gov) to explore Space and Earth science!

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

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# BMAA 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 Rd.  
Chalfont, PA 18914

If you would prefer to register and pay using **PayPal** do not use this form. On the [PayPal](https://www.paypal.com) website send your payment to [treas@bma2.org](mailto: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 # and your preferred Email address in the message area.