# CONSTELLATION

**An Official Publication of the Bucks-Mont Astronomical Association, Inc.**

| VOLUME 22, Issue No. 3. | July/August/September 2007 | Chris Sommers and Scott Petersen, Editors |
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## BMAA News

On Saturday, September 15th BMAA members Dwight Dulsky, Ed Radomski, and Chris Sommers donned their fine clothes and attended the opening ceremonies for the Montgomery County Community College Advanced Technology Center's Observatory. The facility boasts a 16 inch Meade Schmidt-Cassegrain Telescope and networked computers to aide in teaching elementary classes in astronomy. BMAA, DVAA, and CMAA volunteers set up telescopes for hundreds of guests to observe the Moon, Jupiter, and a variety of Deep Sky Objects. Thank you to Dr. Peter Bachmann and Prof. Kelli Spangler of MCCC for including BMAA as part of their excellent program.

Ed Radomski introduced two new honorary members of BMAA from Montgomery Astronomy Group (Monty Sky Watchers) from Wales, Great Britain. We have made Roy Marthews and Tony Nash honorary BMAA members and their names have been added to the yahoogroup list. In exchange they have offered to make any BMAA member who desires an honorary Monty Sky Watcher. Please try to use proper Queen's English when sending yahoogroup messages from now on (ya here that yas knuckleheads?). The link for Monty Sky Watchers is: http://www.montyskywatchers.co.uk

BMAA members have also been asked to give lectures on basic observing and astronomy at Church Valley Nature Center this fall. The details of this are still being worked out.

We have been pretty busy the last three months with our outreach programs.

### BMAA Gophers

| Position | Name |
|---|---|
| President | Bernie Kosher |
| Vice President | Dwight Dulsky |
| Treasurer | Ed Radomski |
| Secretary | Herb Borteck |
| Star Watch Coordinator | George Reagan |
| Constellation Editors | Chris Sommers and Scott Petersen |
| Webmaster | Jim Moyer |

**For More Information About BMAA Go to www.bma2.org.**

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## Spectrum Scientifics To Open In Philly

An email (edited) from Matt Kriebel of Spectrum Scientifics:

I am writing to you to let you know that I will be opening a telescope & science store in the Manayunk section of Philadelphia on or about November 1st. This store will be in the tradition of the now closed Edmund Scientific store in Barrington and will carry telescopes, binoculars, science instruments, science toys, and much more.

The stores name will be Spectrum Scientifics, and will be located at 4403 Main St. in Manayunk..

I am hoping to work closely with local astronomy clubs and would like to know what I can do to enhance a relationship between store and society. For a little background about me: My name is Matt Kriebel, I have a degree in Physics and worked for the Franklin Institute for most of the 90's. I them went on to work for Edmund Scientific for the last years before that division was sold. From there I went on to work for Orion Telescopes in California for a few years before that company was sold. I have now returned to Philadelphia and have decided to use my skills to open a store to help fill the limited number of science & telescope stores in the region. I look forward to talking with you.

Matt Kriebel

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## From the Earth to the Moon (s). The Possibility of Bacterial Transfer from the Earth to Europa.

➢ **By Christopher Sommers**

Back in May (2006) I gave a talk "EuropaDope-From the Earth to the Moon (s)" at the BMAA General Meeting and promised to write an article for the *CONSTELLATION*. It seems my talk was ahead of its time as Astronomy featured an article titled "Is the Earth Contagious" in its December 2006 Issue. I also gave the talk at the Franklin Institute at the invitation of the Rittenhouse Astronomical Society in January of 2007, and will be giving a similar talk at SDV this October. The talk reviewed the probability that life forms could travel between planets and moons within our solar system. Specifically, it focused on the possibility that life could travel to a water rich environment such as Jupiter's moon Europa and survive.

The theory that life forms, primarily bacteria, could travel through deep space is not a new one. It has been reviewed in many popular and scientific journal articles. Many of you know that I am a scientist with a background in radiation biology, and how living organisms repair their DNA following exposure to chemicals and radiation. This particular article is written in general terms for non-biologists and chemists, and is very generalized for BMAA members and other interested readers.

The popular television show *Battlestar Galactica* starts off with "life here began out there". Sorry, as a Sci-Fi junkie I couldn't resist that quote. Of course, the converse could also be true "Life out there could have begun here", at least as applies to our solar system. There are number of things which would be required to be possible for that to happen. These include: (1) There must be a vehicle to transfer life between solar system bodies; (2) The life form attached to such a vehicle must be able to survive the heat, cold, radiation, chemicals, and the vacuum of space; and (3) the vehicle must land on a solar system that is capable of supporting life. In writing this article I have attempted to provide readers with basic information from popular websites, as scientific journals with articles that are written for professionals within their fields of study are not suitable for novices, which includes scientists such as myself, working in other fields.

Let's take a look at the possibility that we would have a vehicle for the transfer of life within the solar system. We know that planets and moons are continuously bombarded by meteorites, asteroids and comets. All we have to do is look up at the night sky and look at the pock-marked surface of the moon to realize this. Amateur astronomers have captured meteorites striking the moon by astroimaging as has been shown on popular websites including www.spaceweather.com. And who can forget the images of comet Shoemaker-Levy 9 crashing into Jupiter in 1994. There is an extensive cataloging of impact craters on earth which may be found at www.unb.ca/passc/ImpactDatabase/.

Of course, we have the extinction of the dinosaurs at the KT Boundary when an asteroid at least 10 km in diameter that slammed into Mexico's Yucatan Peninsula 65 million years ago. Let's remember that physical reactions result in an equal and opposite reaction, so the pieces of the Earth were almost certainly ejected into space by such an impact. Rocks purported to be from our Moon, Mars, and Mercury have been found on the Earth. The possibility and probability that rocks and other matter could make their ways between bodies within the solar system has been studied extensively. Comets travel in their elliptical orbits, around the sun and out towards the Oort Cloud, possibly picking up organic matter as they travel.

Now it is time to address the second requirement. Much of the focus on microorganisms that could possibly survive the rigors of space travel and harsh new environments has been on a family of bacteria called *Deinococcaceae*. This family of bacteria is one of many that can survive in extreme environments, or *EXTREMOPHILES*. *Deinococcus radiodurans* was discovered in 1956 following experiments on food irradiation and is a non-pathogenic (does not cause illness) type of bacteria that survived in food that was supposedly sterilized by irradiation. A radiation dose of 350 rads is sufficient to kill most people. It takes 1 million times that to get rid of *D. radiodurans.* Since that time various types of *Deinococcacea* have been discovered including those living in the high deserts of Chile, the Antarctic, and in hot springs. In addition to surviving high doses of gamma radiation, they are also very resistant to ultraviolet light and can survive in high concentrations of acids and oxidizing agents such as hydrogen peroxide. One really amazing thing about these bacteria is they store the element manganese. This metal, like iron, can loose and accept electrons, which is the basic reaction or rust. Manganese ions, which usually exist as part of an enzyme, can accept electrons that float around in cells that are produced by exposing cellular water to radiation fields and oxidizers that would normally "rust" the bacteria's chromosome and other cellular structures. These bacteria collect and store their own rust proofing, how cool is that!!!

Unlike many types of bacteria such as *Salmonella* or *E.coli*, which have one copy of its chromosome, *Deinococcacea* have 6-8. That mans that when one or more chromosomes are damaged, *D. radiodurans* will use the others as a template to repair itself. The average bacterium has a couple of thousand genes. Think of a gene as a computer file in the operating system. If a gene is corrupted, the computer (the bacteria) malfunctions. Think of a network with 8 computers that could automatically repair its operating system files, or genes, on the individual hard drives. That's a computer net, or bacterial cell, that is hard to kill. *D. radiodurans* typically lives as a group of 4 cells (tetracocci), which means all 4 cells have to be killed in order to kill the group and these bacteria typically live in colonies that include millions of tetracocci. In other words, what if the computer network mentioned above is really connected to four other networks, which are connected to millions of others?

*D. radiodurans* survives in vacuum (such as space), and it is very efficient in the repair of its chromosomes in zero gravity. The bacteria's cell wall (outer covering) is several layers thick of proteins and polysaccharides (complex sugars). *D. radiodurans* actually means "radiation hardened ball". In other words, it is the Abrams tank of bacteria. What is REALLY AMAZING is that we now know that there are types of bacteria that could survive the radiation and vacuum of space and can proliferate in extreme environments.

Now, what about the third requirement? Is Europa capable of supporting life? Unlike other icy moons of Jupiter such as Callisto or Ganymede, Europa is believed to have liquid water beneath the frozen surface anywhere from 5-20 km thick. The frozen surface of Europa is exchanged with the liquid inner portion of the moon through a tectonic activity known as gardening. The high radiation environment of the Europa's surface, about 1000 times what would kill a human, would not kill many types of *EXTREMOPHILES*. The radiation would do things like reduce water to various hydrogen and oxygen radicals which could ultimately form $O_2$. In fact, Europa does contain a thin atmosphere that contains oxygen. The other benefit of the radiation field is the potential breakdown of other substances following prolonged exposure to radiation. Remember that Europa is a dirty snowball, with carbon, nitrogen, iron, sulfur, hydrogen, oxygen, etc. and that has been deposited over the eons. When these compounds are exposed to radiation or heat, they can form primitive organic compounds including rudimentary amino acids, sugars, polycyclic aromatic hydrocarbons (see NASA Space Place below) and nucleosides. In other words-food, fuel, and bricks.

There is no doubt the transfer and survival of life from the Earth to Europa is theoretically possible. The building blocks of life are also present on Europa, and life could evolve with no help from Earth. The bottom line is we won't have a clue until we send some equipment there.

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# NASA Space Place
# Cosmic Cockroaches

➢ **By Dr. Tony Phillips**

Cockroaches are supposed to be tough, able to survive anything from a good stomping to a nuclear blast. But roaches are wimps compared to a little molecule that has recently caught the eye of biologists and astronomers—the polycyclic aromatic hydrocarbon.

Polycyclic aromatic hydrocarbons (PAHs for short) are ring-shaped molecules made of carbon and hydrogen. "They're all around us," says Achim Tappe of the Harvard Center for Astrophysics. "PAHs are present in mineral oils, coal, tar, tobacco smoke and automobile exhaust." Aromatic, ring-shaped molecules structurally akin to PAHs are found in DNA itself!

That's why Tappe's recent discovery may be so important. "PAHs are so tough, they can survive a supernova."

The story begins a few thousand years ago when a massive star in the Large Magellanic Cloud exploded, blasting nearby star systems and interstellar clouds with hot gas and deadly radiation. The expanding shell, still visible from Earth after all these years and catalogued by astronomers as "N132D," spans 80 light years and has swept up some 600 Suns worth of mass.

Last year "we observed N132D using NASA's Spitzer Space Telescope," says Tappe. Spitzer is an infrared (IR) telescope, and it has a spectrometer onboard sensitive to the IR emissions of PAHs. One look at N132D revealed "PAHs all around the supernova's expanding shell. They appear to be swept up by a shock wave of 8 million degree gas. This is causing some damage to the molecules, but many of the PAHs are surviving."

Astronomers have long known that PAHs are abundant not only on Earth but throughout the cosmos—they've been found in comet dust, meteorites and many cold interstellar clouds—but who knew they were so tough? "This is our first evidence that PAHs can withstand a supernova blast," he says.

Their ability to survive may be key to life on Earth. Many astronomers are convinced that a supernova exploded in our corner of the galaxy 4-to-5 billion years ago just as the solar system was coalescing from primitive interstellar gas. In one scenario of life's origins, PAHs survived and made their way to our planet. It turns out that stacks of PAHs can form in water—think, primordial seas—and provide a scaffold for nucleic acids with architectural properties akin to RNA and DNA. PAHs may be just tough enough for genesis.

Cockroaches, eat your hearts out.

Find out about other Spitzer discoveries at www.spitzer.caltech.edu.

Caption: *Using the IR spectrometer on the Spitzer Space Telescope, scientists found organic molecules in supernova remnant N132D.*

*This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration*

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# What I Did On My Fall Vacation.

➢ **By Christopher Sommers**

My wife and I moved from the Denver, CO area to the Philadelphia area 8 years ago. An hour outside of Denver you can't see your hand in front of your face on a new moon evening. Luckily, I did not have a telescope back then.

Despite our years out west my wife and I never went to the Grand Canyon. This October we spent a week near the south rim of the Canyon and stayed in the town of Tusayan, AZ which is approximately a mile outside the Grand Canyon National Park south entrance. We did a good deal of hiking and took helicopter, plane, jeep and boat tours. You can easily fill 5 or 6 days with activities. On one of these days we took a day and evening road trip.

After breakfast we took RTE 64N and then 64E to the town of Cameron and then north on 89A (30 miles) to Dinosaur Tracks. The site is on the Navajo Reservation, and a nice young Navajo guy named Mike gave us a tour in the middle of a sandstorm that resulted from the 40-50 mph winds which were blowing that day. Pterodactyl, Velociraptor, and Allosaurus tracks were abundant. We also saw a petrified Velociraptor claw, nest, and eggs. Piles of petrified dinosaur poop (copalite) dot the landscape. Guess what the picture is of!!!!!!! What a pile of … ! We then took RTE 89A south to Sunset Volcano and Anasazi Indian Ruins, which were on a 40 mile loop off of 89A. Sunset Volcano erupted approximately 1064 AD. The cinder cones and ash fields are clearly visible, well preserved, and quite amazing.

One of the highlights of the entire trip for me was the visit to the Arizona Meteor Crater. The crater is located approximately 30 miles west of Flagstaff off of I-40, then six miles on Meteor Crater Road, which is paved. Many roads in Arizona are not. The site is privately owned and is not part of the National Park system. There was a $15 per person fee. The staff was polite and professional. The crater was formed approximately 50,000 years ago, which predates the estimated human presence in the area. The nickel-iron meteor was estimated to be 150 ft in diameter. The crater is 550 ft deep, 4,000 ft across, and 2.4 miles in circumference and is a truly spectacular site. Viewing the site was well worth the extra drive and the $15 fee. There is a small museum, an Apollo training capsule, a short presentation and a movie that take approximately 30 minutes. There is a Subway for food and a gift shop. Pass this up and you will surely kick yourself at a later date. This is a MUST stop.

Following the Meteor Crater we made our way over to Lowell Observatory in Flagstaff. The traffic in Flagstaff was atrocious and we didn't arrive until 4:30 pm. The facility closed at 5:00 pm but then open at 5:30 for the evening star watching. The staff wouldn't give me a ticket to see the "Pluto" scope even though it was only a two minute walk away and it was supposed to be open until 5:00 pm (I was very nice to them, so it wasn't tell the rude person no syndrome). My wife and I went out for dinner and came back for the evening program that included a 7 minute video in their mini-theater, a 30 minute night sky talk, and then observing. The staff at the ticket counter/gift shop, I am

guessing high school and college kids, were generally snippy and did not want to answer questions about the night's programs for the visitors. Due to the high wind (just my luck) the 24 inch Clark refractor was not available for observing, although we could see it through the door of the observatory. They used a 16 inch Cassegrain, which appeared to need some collimation, to view Albireo for their star watching. The stars had a double vision quality as observed by my wife and me. Even though Flagstaff is a "dark sky" city the light from the excessive traffic was noticeable. If you want to observe, get away from the city. This was a disappointing stop. I did purchase a tee-shirt at the gift shop because it was the "Lowell Observatory". Be prepared to pay $6.00 fee for a 30 minute presentation and the opportunity to be treated rudely by high school and college kids. I should have tried for the U.S. Naval Observatory instead. We then took I-40 back to RTE 64 to get back to Tusayan in the evening.

One of the highlights of the entire trip was the chance to observe at the Grand Canyon using my Celestron 15 x 70 binoculars. Tusayan is a small town, but has a lot of lights. I drove to the Park half an hour after sunset, and the ranger at the gate recommended Yavapai Point for observing. There are two lights in the parking lot and an inside light from the small building on the point. They are fully shielded if you walk 30 feet along the rim trail. There are restrooms at Yavapai Point. Please note the stone walls along the trail are thigh height. It is a remote area, and it is coyote and mountain lion country. We saw both coyotes and bull elk while visiting. Some of the coyotes are fed by people for pictures and have no fear of humans. Getting trampled by a bull elk during their mating season would not be a good thing. Our cave-drawing tour ran across what was left of a deer-kill/carcass and some old tracks that could have been of a big cat. (Is that cave drawing a lunar calendar??? PS-they did not draw fish). The Canyon area is the wild-west, so be prepared. The Milky Way stretched from horizon to horizon, and looked like it was a photograph. The summer triangle was hidden within the brightness of the Milky Way. There were so many stars I had trouble finding some of the constellations. The view to the south (Sagittarius, Pisces, Capricornus, Aquarius, Scorpius), all the stuff I can't see from our area, was fantastic. I found all of the Messier Objects that I haven't been able to locate here. M31 took the entire binocular field of view, and M32 and M110 were clearly visible. M33 was the best I have ever seen, M81 and M82 stood out as I have never seen even though Ursa Major was low in the sky. The transparency and seeing were the best I have seen since I have owned a telescope. While the folks in West Virginia or Cherry Springs have a reason to be proud of their night skies, there is no comparison between eastern and western skies. High altitude and low humidity!

There is plenty to do for the amateur observer in northern Arizona. Be certain to pack your binoculars or small telescope. Unfortunately my digital camera has no good night exposure settings for taking deep sky or constellation pictures, otherwise I would have brought back a few. I'll have to manipulate my wife into wanting a new camera, or resort to groveling, which is more realistic.

Have a great time in the wild-wild-west.

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# NASA- Space Place
# Chew on This

The Mars robotic rovers, Spirit and Opportunity, are equipped with RATs, or Rock Abrasion Tools. Their purpose is to abrade the surface patina off the Mars rocks so that the alpha x-ray spectrometer can analyze the minerals inside the rocks, rather than just on the surface.

But future robotic missions to Mars will be asked to go even further below the surface. Scrapers and corers will gather rock samples of substantial size, that, in order to be analyzed by a spectrometer, will need to be crushed into a fine powder.

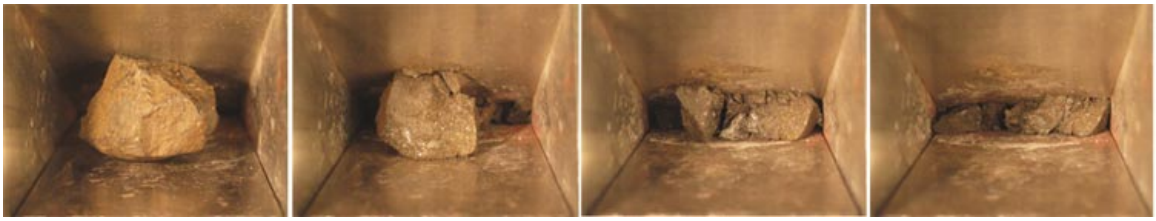
Crushing rocks on Mars? Now there's a problem that brings to mind a multitude of possible approaches: Whack them with a large hammer? Squeeze them until they explode? How about just chewing them up? It was with this latter metaphor that the planetary instrument engineers struck pay dirt—so to speak.

Thanks to NASA's Planetary Instrument Definition and Development Program, a small group of NASA engineers came up with the Mars Rock Crusher. Only six inches tall, it can chew the hardest rocks into a powder.

The Mars Rock Crusher has two metal plates that work sort of like our jaws. One plate stays still, while the other plate moves. Rocks are dropped into the jaw between the two plates. As one plate moves in and out (like a lower jaw), rocks are crushed between the two plates. The jaw opening is larger toward the top and smaller towards the bottom. So when larger rocks are crushed near the top, the pieces fall down into the narrower part of the jaw, where they are crushed again. This process repeats until the rock particles are small enough to fall through a slit where the two plates are closest.

Engineers have tested the Mars Rock Crusher with Earth rocks similar to those expected to be found on Mars. One kind of rock is hematite. The rusted iron in hematite and other rocks help give Mars its nickname "The Red Planet." Another kind of rock is magnetite, so-called because it is magnetic. Rocks made by volcanoes are called basalts. Some of the volcanoes on Mars may have produced basalts with a lot of a mineral called olivine. We call those olivine basalts, and the Rock Crusher chews them up nicely too.

Visit www.jpl.nasa.gov/technology to read the latest about other NASA technologies for exploring other planets and improving life on this one.



Caption: *Looking down on the jaws of the Mars Rock Crusher, we see a magnetite rock get crushed into smaller and smaller particles.*

*This article was written by Diane K. Fisher and provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.*

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## Quarterly Meeting Minutes

**Bucks-Mont Astronomical Association, Inc.**
**General Meeting Minutes Peace Valley Nature Center, Doylestown PA**
**October 5, 2007**

Officers Present: Bernie Kosher, President; Dwight Dulsky, Vice President; Herb Borteck, Secretary; George Reagan, Star Watch Chairman. Attendance: 20 members President Bernie Kosher called the meeting to order at 8:13 pm. Ed Radomski, our esteemed treasurer, was not present and so there was no report.

Dwight Dulsky briefly told us that everything is ready. All of the vendors were contacted and letters were sent to the people surrounding Camp Onas advising them that they were welcome to visit and that their co-operation in keeping the outdoor lights off for the two days of Stella Della.

George Reagan needed one more volunteer and Sergio committed himself. George also announced the upcoming star watches for October.

The meeting was then opened for nominations of officers. Dwight Dulsky was nominated for President Bernie Kosher was nominated for Vice-President Ed Radomski [who was not there to defend himself] for Treasurer Herb Borteck was nominated for Secretary

The official vote will be taken at the next meeting, November 7. Bernie Kosher took the names of those who were interested in ordering The Observer's Handbook. He also passed around two meteorites which will be given as prizes at StellaDella. The one from the Gibeon Meteorite shows the Widmanstatten Crystallization.

Then the meeting, led by Bernie, discussed Auroras and other topics of interest.

The meeting ended at 9:04pm

Respectfully submitted,
Herb Borteck, Secretary.

**Bucks-Mont astronomical Association, Inc.**
**Executive Meeting Minutes**
**Churchville Nature Center**
**September 19, 2007**

Present at the meeting: Bernie Kosher, President; Dwight Dulsky, Vice President; Ed Radomski, Treasurer; Herb Borteck, Secretary; George Reagan, Star Watch Chairman; Chris Sommers, Constellation Editor; Bob Jackson; and Frank Schubert, Substitute Secretary (he remembered what was said.)The meeting was called to order at 7:30PM.

Ed Radomski gave the treasurer's summery report. The meeting was held in the parking lot (despite intermittent lighting.) for two reasons: 1-the weather was excellent; 2-someone forgot the key.

Discussions: Plans for Stella Della are proceeding apace. 38 people signed up, so far. To date: 38 registered 34 signed up for the Pizza party, 6 texas (?) An E-Mail was received from an Astronomy Group in England, probably in reference to the name "Buckingham" They will be added to our mailing list.

Submitted by:
Frank Schubert (Best secretary ever, Herb).

**Bucks-Mont Astronomical Association, Inc.**
**General Meeting Minutes**
**Peace Valley Nature Center, Doylestown PA**
**September 5, 2007**

Officers Present: Bernie Kosher, President; Dwight Dulsky, Vice President; Herb Borteck, Secretary; George Reagan, Star watch Chairman; Chris Sommers, Constellation. Attendance: 14 members. There was one new person at the meeting, Carl. I failed to get his surname. He brought his telescope with him in order to get advice. The President called the meeting to order at 8:12 pm.

Ed Radomski was not present but he sent this information. SDV XXI registrations are beginning to trickle in with 7 registered, 4 in the Texas building and 8 Pizza dinners with $365.00 received thus far.

Chris Sommers said that he was starting the new issue of the Constellation and requested information and articles from the members. Especially wants articles on buying scopes, eyepieces, etc. for this issue.

He reminded us that the "Evening Under the Stars" event at MCCC is on the 15th of September and tried to get an idea of who might attend. At the present time, there are five members who expect to show up. If there are any others, please call Chris or Ed so that the Montgomery County Community College may be notified in advance.

George Reagan gave a star watch report.

At this point dissolved into talks among the members of various interesting topics. Bernie ended the meeting at 9:18 and I think that I was the only one to notice as many of us, including myself, stayed longer to discuss the various topics of interest.

Respectfully submitted,
Herb Borteck, Secretary.

**Bucks-Mont astronomical Association, Inc.**
**Executive Meeting Minutes**
**Churchville Nature Center**
**August 15, 2007**

Present at the meeting: Bernie Kosher, President;Dwight Dulsky, Vice President; Ed Radomski, Treasurer; Herb Borteck, Secretary; Chris Sommers, Constellation; and Frank Schubert.

Dwight sent an e-mail message to all:"Also, thanks to Bernie, Herb, Ed, Frank and Chris for spending a good hour of their Wednesday night helping fold, address and stamp a couple of hundred mailers for Stella Della. If you have been a BMAA member or have been to Stella Della within the past 3 years look for your SDV registration mailer to arrive sometime next week"

Actually it was Dwight Dulsky who did all the legwork, and accomplished the task of having all the material needed present at the executive meeting.The rest of us merely helped finalize the material. And we had a delightful time talking and kidding as we followed through.

Therefore the minutes are hereby written to confirm what a lucky club we are to have Dwight Dulsky who has done so much for all of us.

Respectfully submitted,
Herb Borteck, Secretary

**Bucks-Mont Astronomical Association, Inc.**
**Executive Meeting Minutes**
**Churchville Nature Center**
**July 18, 2007**

Present at the meeting: Bernie Kosher, President;Dwight Dulsky, Vice President; Ed Radomski, Treasurer; Herb Borteck, Secretary; George Reagan, Star watchchairman; Chris Sommers, Constellation; Bob Jackson
The meeting was called to standing order at 7:45.

Ed Radomski gave us the Treasurer's Report. With the approval of the Executive Board, Ed has divided the Observatory and General accounts into two Checking accounts. At the present time we have 58 members in our club.

Herb Borteck reported that the club successfully delivered a 6 inch Newtonian telescope to Stephanie,the presiding executive at Honey Hollow Nature Center. Many thanks to Bernie Kosher, who prepared the scope and to Frank Schubert who repaired the mount. Herb and Frank explained to Stephanie how to use it and will be available to her when she has any questions regarding its use. Stephanie thanks the club and will be looking forward to the next star watch at Honey Hollow.

Dwight Dulsky went over a list covering all the problems and aspects of the up-coming Stella-Della. This took up the rest of the meeting as we discussed the various programs to be presented; the expenses and the rates to be charged; the necessity for signs and other such matters.

It was a good and fruitful meeting. Wish you were there to give us your views.

Respectively submitted,
Herb Borteck, Secretary

**Bucks-Mont Astronomical Association, Inc.**
**General Meeting Minutes**
**Peace Valley Nature Center, Doylestown PA**
**July 11, 2007**

Officers Present: Bernie Kosher, President; Dwight Dulsky, Vice President; Ed Radomski, Treasurer; Herb Borteck, Secretary; George Reagan, Star watch Chairman; Chris Sommers, Constellation. Meeting started at 8:10pm.
Attendance: 17 members

Ed Radomski gave the Treasurers Report. There are 58 members. Ed also reported that the Montgomery County Community College was having a fund raising dinner: Evening Under The Stars. They were inviting us to be there with telescopes, Sept. 15. This is a black tie affair and they asked us to be dressed appropriately. Ed also brought us refreshments for our Show and Tell meeting.
Thanks Ed.

George Reagan gave us a report on the past star watches. Out of the last 20 planned there were 11 successful meets. August:

Dwight Dulsky reported that there will be an increase of 2 dollars for StellaDella. And that the hard copy mailer will be sent on the 20th of Aug. Also he brought up the topic of presenting either pens or card magnifiers with our logo. The topic will be discussed later.

Chris Sommers reported that he had four speakers lined up for SDV.

Herb Borteck asked whether or not the object that he had seen Thursday at the edge of Jupiter was a moon or a star behind Jupiter. Ed showed some software that showed it to be a moon. Since then, Chris has confirmed and identified what looked like a moon and had confused Herb was actually "omega Ophiuchi" and that it WAS a moon at the edge of Jupiter.

Starting off in the Show and Tell, Dwight showed us how he cleverly attached a Coronado solar scope to his Meade refractor. Now when he is at a star watch, he can show the sun through his Meade and the Coronado at the same time and both will be on the same mount.

Bernie Kosher showed us half of a binocular that was open and we could see how it was put together. He explained the prismatic system.

Ed Radomski projected two pictures of the Milky way, taken in the Rocky Mountains. There then followed the usual and interesting discussion of what we could discern in the pictures.

Norman Remer showed us two spherometers, one being an antique and described the difficulties of using them.

Herb Borteck brought some samples of his paleontological treasures and displayed them after the meeting.

Of course there were many discussions brought up concerning astronomy and a good time was had by all.

The meeting adjourned at 9:30pm. Dwight and Herb stayed until 10:00 displaying and talking to anyone interested.

Respectfully submitted,
Herb Borteck, Secretary.

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## BMAA 2007 Calendar of Events
## (Check for Updates at www.bma2.org)

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| **October** | **3 Wed** | **8pm** | **BMAA General Meeting, Peace Valley Nature Center, Doylestown** |
| | **5 Fri** | **7:30pm** | **StarWatch, Pennypack Ecological Restoration Trust, Huntingdon Valley** |
| | **12-14 Fri-Sun** | | **STELLA-DELLA-VALLEY XXI, Camp Onas, Ottsville** |
| | **16 Tue** | **7:30pm** | **StarWatch, Lower Nike Park, Warrington** |
| | **19 Fri** | **7:30pm** | **StarWatch, Tamanend Park, Upper Southampton** |
| **November** | **01 Thu** | **7:30pm** | **StarWatch, Honey Hollow Environmental Education Center, Solebury** |
| | **7 Wed** | **8pm** | **BMAA General Meeting, Peace Valley Nature Center, Doylestown** |
| | **9 Fri** | **7:30pm** | **StarWatch, Covered Bridge Park, New Britain (Adjacent to the Covered Bridge)** |
| | **15 Thu** | **7:30pm** | **StarWatch, Willard Markey Centennial Park, Perkasie** |
| | **20 Tue** | **7:30pm** | **StarWatch, Peace Valley Nature Center, Doylestown** |
| **December** | **5 Wed** | **8pm** | **BMAA Holiday Meeting, Peace Valley Nature Center, Doylestown** |

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## Constellation-Instructions to Authors

You need to be a BMAA member to submit an article. Articles are typically ½ to 2 pages in length. They can vary in topic from reviews of books, star parties, observing, equipment, issues of general astronomical interest, etc. Go to the BMAA website and take a look at *CONSTELLATION* back issues and you will get the idea. Another good example for articles is on the Cloudy Nights web site (http://www.cloudynights.com).

As to the format for articles, please adhere to the following:
Word Processor: MS Word.
Font: Times New Roman
Margins: 1 inch all sides.
Title Font Size: 14 pt
Text Font Size: 10 pt
Spacing: Single Space
Original Figures: Gray scale or color, jpeg format, and please save the file as the size as it would appear in the article (about 2" x 3"). The figures should be original due to copyright issues.
The Editors will modify the article as needed to fit the format.
Email articles to: constellation@bma2.org

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# Bucks-Mont Astronomical Association
# Membership Application

**Name and address**

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_____

_____

**Telephone**

**Home**_____

**Cell**_____

**E-mail**_____

**Renewal( ) New Member( )**

**Renewal Dues are $25.00/year and are due starting in November**

**Dues for new members are:**

| | |
|---|---|
| January | $25.00 |
| February | $23.00 |
| March | $21.00 |
| April | $19.00 |
| May | $17.00 |
| June | $15.00 |
| July | $13.00 |
| August | $11.00 |
| September | $9.00 |
| October | $25.00 |
| November | $25.00 |
| December | $25.00 |

**Additional members from the same household are 1/2 price.**

**Your name, city of residence, telephone number and e-mail will be posted in the member's area of the website that can be viewed by using a club issued name and code word. The code is changed periodically and issued to club members only.**

**( ) Do not list my name or any personal information on the website.**

**The Association saves considerable money each year through electronic delivery of the Constellation. Printed copies will always be available at the meetings. You will receive the Constellation by being notified by E-mail when it is available on the website.**

**( ) Check here to receive the Constellation by Traditional mail.**

**Your e-mail address will be added to the e-group list and you will receive one e-mail a day containing all the mail that is sent to the group address by other members that day. This will allow you to be aware of current activities and discussions, and you may respond to any message by addressing your response to the e-group address. You must be a member to send to or receive messages from the e-group. You may cancel or change this option by contacting Jim Moyer, info[at]bma2.org.**

**BMAA Web site - http://www.bma2.org**

**Please return this form, with a check payable to BMAA, to:**
**Ed Radomski**
**36 Far View Rd.**
**Chalfont, PA 18914**