

CONSTELLATION

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

VOLUME 24, Issue No. 2	April/May/June 2009	Chris Sommers and Scott Petersen, Editors
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President's Message

With the Summer Solstice just happening a few days ago, it's hard to believe that we are already half way through 2009. Somewhere in my past I always remembered June as being a nice sunny month in the low 70's and not too much humidity. This year June was a tough one for both telescopes and observers. I can't remember when the last stretch of three sunny days in a row was. The last three StarWatches have all been partly cloudy with just fleeting glimpses of the stars. Unfortunately, this last week in June isn't looking all that great either. Hopefully the rest of the summer will be friendlier to astronomers.

Great Presentations



Traveling Telescopes
Preston Smith

Constellation:	Observer:	
Site:	Date:	
Transmittance:	Seeing:	telescope:
Comments:		
OBJECT:		
Power:	Exposure:	○
Dist:	Mag:	
Name:		
OBJECT:		
Power:	Exposure:	○
Dist:	Mag:	
Name:		

Observing Logs
Gary Sprague



Galileo's Neighbor ~ Luigi
Dwight Dulsky

Since the last newsletter we have continued to have interesting presentations at our regular monthly meetings. Preston Smith gave us some great tips and strategies of packing a small telescope for traveling, especially airline trips. Preston's experience in this area has resulted in some very innovative packing techniques. Another BMAA member, Gary Sprague showed us a number of ways to use observation logs and forms when out under the stars. We hope to have some forms you can download on our website soon. Gary pointed out how logging your sessions can be useful in a number of ways from a "astronomical diary" to a more scientific recording of your observations. In June, I took a turn at honoring Galileo by portraying not the man himself, but through the eyes of his next door neighbor, Luigi. We used an interview type format with George Reagan asking the questions and Luigi relating his memories of Galileo over his lifetime.

Facebook



BMAA is now on [Facebook](#). I know Facebook may be new to many of you, so I will try to explain a bit how this all works. Facebook exists solely on the web; there is nothing you download to your computer. There are two main aspects to Facebook, one is the creating of your own personal profile and the other is making a Facebook page that primarily represents a business or organization. BMAA has done the latter. Jim Moyer has made a direct link to our page off of our main www.bma2.org webpage – this is the easiest way to just VIEW our Facebook page. However, if you want to interact with our page you have to sign up and become a member of the Facebook community (this is FREE). To post information and participate in discussions you click on a link called “Become a Fan”. This will link your personal profile to the BMAA page. When information is updated on the BMAA page you will see it on your own page. As a fan you can also post announcements, comments and put your own 2 cents in on the Discussions page. I am being a bit conservative at this point and not allowing Fans to post photos. One nice thing about Facebook is you can make it just “push” information only to your fans or it can be wide open where anyone can put anything they want on your page. That’s a little too risky for me, so we’ve limited fan participation a bit at this point.

I would like to say that our main forms of digital communication will still be our webpage and YahooGroups. The Facebook community is over 225 million strong and still growing. I think it is a nice asset to communicate club activities to non-members and potential members. Please encourage your friends and neighbors to join as “fans”. Remember you can always “un-join” and cancel your account at any time.

Just a word about creating your own profile on Facebook. Like I mentioned before, you don’t have to be a member of Facebook just to look at our page if you click on the link Jim has put on the BMAA website (scroll down a bit and you’ll see it). But, creating a profile is easy. If you go to the main <http://www.facebook.com> page you simply give them your *real* name, email address, your sex and birthday. You have to be over 13 to become a Facebook member. Then you will go to a new page where you can input information about yourself, upload pictures, etc. Much of your personal information is optional and you can put as much or little about yourself as you wish. Only your “Friends” – which you approve, will see the profile page you created. Everything is always editable at all times. The fun part of Facebook is adding and finding friends to interact with. The fact that everyone uses their real names is helpful in that people can’t hide behind their pseudonym name and just post trash.

The search tools in Facebook are very powerful and finding old and new friends is easy. For example, if you tell Facebook the name of the school and year you graduated, it will search and let you know your classmates who are already on Facebook. Then you can send them a request to have them become your “friend”. When someone gets a friend request you have three choices, approve the request, not approve or ignore. If you approve the person, both of you will be able to see each other’s profile pages, write to each other, etc. You will occasionally get requests from people you don’t know. I always deny friend requests from people I don’t personally know. A lot of these are just insecure people who want to look like they have a lot of friends on Facebook. Some may legitimately want to connect with you because you have some common interest listed in your profile or maybe they just like your picture!

SDV planning underway



Bucks-Mont Astronomical Association

October 16-18.

Now that summer is here we’re busy planning another Stella Della Valley StarParty event. Guest speakers and door prizes are in the process of being procured. You can keep up to date on events with our BMAA webpage <http://www.bma2.org/Sdv.html> or Facebook page. We’ll also be sending out some information via email over the summer as well. Registration won’t open up until late August.

BMAA Gophers

Position	Name
President	Dwight Dulsky
Vice President	Bernie Kosher
Treasurer	Ed Radomski
Secretary	Cathy Ebert
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.

Deep Sky Ramblings

➤ By Bob Dudley, BMAA

Soon the summer skies will be dominated by the Milky Way with its myriads of star clouds, nebula and both open and globular star clusters. The constellation Sagittarius contains seven Messier globular clusters ranging from M 28, which rivals M 13, to a fairly non-descript M69 as well as a number of NGC globular clusters. Three of the lesser-known Messier globular clusters lie along the bottom of the 'teapot' on a line that can be drawn from ϵ (Kaus Australis) and ζ (Ascella) Sagittarii.

The first globular cluster that lies near the line drawn is M 69 which is located about 2.5° to the northeast of ϵ Sagittarii. There is a 5th magnitude star 5 degree to the south of the cluster. The cluster is small ($10'$) and relatively bright (Mag. 7.7). A 6 inch telescope may, under dark skies conditions show some resolution around the edge of the cluster. A smaller and dimmer cluster, NGC 6652, is ~ 1 degree to the southeast. NGC 6652 has a diameter of $3.5'$ and a visual magnitude of 8.9 and at low power may be easily overlooked as there is an approximately magnitude 6.9 star $6.5'$ to the northwest of the cluster.

The second cluster of the Messier trio is M 70, which lies midway between ϵ and ζ Sagittarii approximately 2.5° east of M 69. This is a small globular cluster ($8'$ diameter, Mag 7.8). In the telescope the cluster looks like a small fuzz ball that has a brighter core. It will require a 12" scope under dark skies to start to resolve the stars in this cluster.

The last of the Messier trio is another small globular cluster M 54. Of the three globular clusters this cluster is the most interesting. M 54 is located approximately 0.25° S and 1.5° W of ζ Sagittarii. M 54 has a very condensed cluster $\sim 12'$ in diameter and whose visual magnitude is 7.7. In 1994 when the Sagittarius Dwarf Elliptical Galaxy (Sag DEG) was discovered on a photographic plate taken by R. Ibak et al who postulated that M 56 was a member of Sag DEG. The galaxy is 88,000 light years away and M54 coincides with one of the galaxy's bright spots. M 54 is also receding from earth at the same velocity as Sag DEG. Eventually M 54 will be captured by our galaxy along with the fainter globular clusters Arp 2, Terzan 7 and 8. Four other globular clusters, NGC 4147, Palomar 2 and 12 and Whiting 1, were probably captured from Sig DEG. The brightest of these globulars, after M 54, is NGC 4147, which is a Mag 10.32 globular cluster in Coma Berenices. If M 54 is a truly a member of another galaxy then Messier discovered the first extragalactic cluster in 1778. The story becomes even more interesting when, in 1995, Bassino and Mazzi speculated that M 54 was not really a globular cluster but actually the nucleus of Sag DEG that had separated from the galaxy. Sag DEG is being pulled apart from tidal forces exerted upon it by the Milky Way and eventually the galaxy's stars will become part of our own galaxy.

Pierrre Mechain is credited with the discovery the second extragalactic globular cluster on October 26, 1780 and Messier determined its position on November 17, 1780 and added the cluster, as the 79th object, to his catalogue. M-79 is an oddball as it is located in the hemisphere opposite of the galactic center; most globular clusters are found near the galactic center. In 2003 the Canis Major Dwarf Galaxy was discovered on a photographic plate and it appears that our Milky Way galaxy is either in the process of capturing this globular cluster or that the cluster is already part of the Milky Way System. This galaxy is $\sim 25,000$ light years from earth and $\sim 40,000$ light years from the center of our galaxy. M-79 is $\sim 40,000$ light years from earth and $60,000$ light years from the center of our galaxy. Based on these distances it is assumed that M-79 may be associated with The Canis Major Dwarf Galaxy along with NGC 1851, 2298 and 2808.

NGC 2808 is another interesting globular cluster. Most if not all globular clusters contain only one generation of stars that formed in a period of a few million years. NGC 2808 contains three generation of stars that formed over a period of roughly 200 million years. This cluster is approximately 12.5 billion years old and the star formation occurred over 12 billion years ago. There is speculation that this may not be a globular cluster but all that remains of an old dwarf galaxy. This is a nice bright globular cluster that is located in the constellation Carina; unfortunately too far south for us to observe from our location in Bucks County.

Before we leave this topic we should look at one last globular cluster that has received the nickname the Wanderer. This globular cluster is the most remote globulars of our Milky Way being 300,000 light years away, almost twice the distance as the Large Magellanic Cloud. It ranks fourth in intrinsic luminosity according Harris' database at

Mag -9.48. The globulars ahead of it in intrinsic luminosity are Omega Centauri, NGC 6388 and M 54. Recent Hubble telescope pictures suggest that this globular cluster may be a remnant of a dwarf galaxy. The cluster is visible in moderate telescopes (6" or larger) with a visual Mag of 10.4. I would be interested in any observation reports from the members of the club, which I could use in a future article.

Recording Observations

➤ By Bob Dudley, BMAA

At the April meeting of the BMAA Gary Sprague made a presentation on the logging of astronomical observations. As a kid I used to log my observations on 3" x 5" index cards. I now use a small notebook, however I find it unsatisfactory. Gary offered several options and I have used The Astronomer's Journal from the American Association Of Amateur Astronomers. It is nice but it is not exactly what I was looking for as a permanent record, especially as I am busy observing the Messier object. The Astronomical League Messier observing club has there own form to fill out, I wanted a better way to log my observations.

I thought that I would have to create my own form until I read about logging observations in the Cloudy Nights forum. Someone had done all of the work for me. Simply go to <http://www.perezmedia.net/beltofvenus/archives/000314.html>. Jeremy Perez has designed a number of different observation forms that can be downloaded as pdf files. He also has links to other sites from which one can also download other observation files. I hope that you take the time to pop over to Jeremy's site and take a look.

The Cool Chemistry of Alien Life

Alien life on distant worlds. What would it be like? For millennia people could only wonder, but now NASA's Spitzer Space Telescope is producing some hard data. It turns out that life around certain kinds of stars would likely be very different from life as we know it.

Using Spitzer, astronomers have discovered the organic chemical acetylene in the planet-forming discs surrounding 17 M-dwarf stars. It's the first time any chemical has been detected around one of these small, cool stars. However, scientists are more intrigued by what was *not* there: a chemical called hydrogen cyanide (HCN), an important building block for life as we know it.

"The fact that we do not detect hydrogen cyanide around cool stars suggests that that prebiotic chemistry may unfold differently on planets orbiting cool stars," says Ilaria Pascucci, lead scientist for the Spitzer observations and an astrophysicist at Johns Hopkins University in Baltimore, Maryland.

That's because HCN is the basic component for making adenine, one of the four information-carrying chemicals in DNA. All known life on Earth is based on DNA, but without adenine available, life in a dwarf-star solar system would have to make do without it. "You cannot make adenine in another way," Pascucci explains. "You need hydrogen cyanide."

M-dwarf and brown dwarf stars emit far less ultraviolet light than larger, hotter stars such as our sun. Pascucci thinks this difference could explain the lack of HCN around dwarf stars. For HCN to form, molecules of nitrogen must first be split into individual nitrogen atoms. But the triple bond holding molecular nitrogen together is very strong. High-energy ultraviolet photons can break this bond, but the lower-energy photons from M-dwarf stars cannot.

"Other nitrogen-bearing molecules are going to be affected by this same chemistry," Pascucci says, possibly including the precursors to amino acids and thus proteins.

To search for HCN, Pascucci's team looked at data from Spitzer, which observes the universe at infrared wavelengths. Planet-forming discs around M-dwarf stars have very faint infrared emissions, but Spitzer is sensitive enough to detect them.

HCN's distinctive 14-micron emission band was absent in the infrared spectra of the M-dwarf stars, but Spitzer did detect HCN in the spectra of 44 hotter, sun-like stars.

Infrared astronomy will be a powerful tool for studying other prebiotic chemicals in planet-forming discs, says Pascucci, and the Spitzer Space Telescope is at the forefront of the field. Spitzer can't yet draw us a picture of alien life forms, but it's beginning to tell us what they could—and could not—be made of. "That's pretty wonderful, too," says Pascucci.

For news of other discoveries based on Spitzer data, visit www.spitzer.caltech.edu. Kids can learn Spitzer astronomy words and concepts by playing the Spitzer "Sign Here!" game at spaceplace.nasa.gov/en/kids/spitzer/signs.



Caption: Do alien planets around other stars have the right ingredients for a pre-biotic soup?

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

BMAA 2009 Schedule of Events

July	1 Wed	8pm	BMAA General Meeting, Peace Valley Nature Center, Doylestown
	17 Fri	9pm	StarWatch, Cedar Hill Park, Horsham
	24 Fri	9pm	StarWatch, Tamanend Park, Upper Southampton
	28 Tue	9pm	StarWatch, Lower Nike Park, Warrington
August	5 Wed	8pm	BMAA General Meeting, Peace Valley Nature Center, Doylestown
	13 Thu	9pm	StarWatch, Peace Valley Nature Center, Doylestown
	21 Fri	8:30pm	StarWatch, Nockamixon State Park, Quakertown
September	27 Thu	8:30pm	StarWatch, George M. Bush Park, Buckingham
	2 Wed	8pm	BMAA General Meeting, Peace Valley Nature Center, Doylestown
	10 Thu	8:30pm	StarWatch, Honey Hollow Environmental Education Center, Solebury
	18 Fri	8pm	StarWatch, Covered Bridge Park, New Britain
	24 Thu	7:30pm	StarWatch, George M. Bush Park, Buckingham
October	7 Wed	8pm	BMAA General Meeting, Peace Valley Nature Center, Doylestown
	9 Fri	7:30pm	StarWatch, Peace Valley Nature Center, Doylestown
	16-18		STELLA-DELLA-VALLEY XXIII, Camp Onas, Ottsville
	23 Fri	7:30pm	StarWatch, Pennypack Ecological Restoration Trust, Huntingdon Valley
November	27 Tue	7:30pm	StarWatch, Silver Lake Park, Bristol
	4 Wed	8pm	BMAA General Meeting, Peace Valley Nature Center, Doylestown
	12 Thu	7:30pm	StarWatch, Gwynedd Wildlife Preserve, Upper Gwynedd
	20 Fri	7:30pm	StarWatch, Lower Nike Park, Warrington
December	24 Tue	7:30pm	StarWatch, Peace Valley Nature Center, Doylestown
	2 Wed	8pm	BMAA Holiday Meeting, Peace Valley Nature Center, Doylestown

All StarWatches are free and open to the public. See www.bma2.org for directions . StarParties are open to members and guests only. Call the BMAA Message Line 215-579-9973 for activity updates. Cancellations due to

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

The *CONSTELLATION* is the official publication of the Bucks-Mont Astronomical Association, Inc., a 501c3 non-profit organization incorporated in the Commonwealth of Pennsylvania and exists for the exchange of ideas, 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, and those of contributors may be edited to fit within the format and confines of the publication. The contents this publication, and its format (published hard copy or electronic) are copyright of ©2006 BMAA, Inc., and may not be reproduced or distributed without express written consent of BMAA, Inc.

Bucks-Mont Astronomical Association Membership Application

Name and address _____

Renewal() New Member()

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

Dues for new members are:

Telephone _____

Home _____

Cell _____

E-mail _____

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@bma2.org.

BMAA Web site - <http://www.bma2.org>

Please return this form, with a check payable to BMAA, to:

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