



Observations

A Monthly Publication Of The
CHESTER COUNTY ASTRONOMICAL SOCIETY

Vol. 19, No. 8

Two-Time Winner of the Astronomical League's Mabel Sterns Award # 2006 & 2009

August 2011

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Milky Way over Abandoned Kilns



Built in the 1870s in rural Nevada to process local wood into charcoal, these kilns were abandoned due to a town fire and flooding, but remain in good condition even today. The above panorama is a digital conglomerate of five separate images taken in early June from the same location. Visible above the unusual kilns is a colorful star field, highlighted by the central band of our Milky Way Galaxy appearing along a diagonal toward the lower right. Many famous sites in our Galaxy are visible, including the [Pipe Nebula](#) and the [Dark River to Antares](#), seen to the right of the Milky Way. The origin of the green mist on the lower left, however, is currently unexplained. *Photo courtesy of Tom McEwan.*

Membership Renewals Due

08/2011	Given & Family Knabb & Family Loving & Family Lurcott Fragale Morgan
09/2011	Arunapuram Baudat & Family Catalano-Johnson & Family De Lucia Lurcott
11/2011	Buczynski Hepler Holenstein O'Hara

Important August 2011 Dates

- 6th** • First Quarter Moon 7:08 a.m.
- 12th -13th** • The Perseid Meteor Shower peaks and fights with the full Moon
- 13h** • Full Moon 2:57 p.m.
- 21st** • Last Quarter Moon 5:54 a.m.
- 28th** • New Moon 11:04 p.m.
- 30th** • New Moon 2:40 p.m.



CCAS Upcoming Nights Out

CCAS has several "nights out" scheduled over the next few months. Members are encouraged to help out during these events any way they can. See below for more information.

- ✦ **Friday, August 19, 2011** - CCAS Monthly Observing Session, Myrick Conservancy Center, BVA (inclement weather date August 20th).
- ✦ **Friday, September 23, 2011** - CCAS Monthly Observing Session, Myrick Conservancy Center, BVA (inclement weather date September 24th).
- ✦ **Saturday, October 1, 2011** - Fall National Astronomy Day, Anson Nixon Park, Kennett Square, PA.

Summer/Fall 2011 Society Events

August 2011

3rd • PA Outdoor Lighting Council monthly meeting starting at 7:30 p.m. Meetings are open to the public. For more information and directions, visit the [PA Outdoor Lighting Council](#) website.

20th • Open call for articles and photographs for the September 2011 edition of *Observations*.

26th • CCAS Monthly Observing Session, Myrick Conservancy Center, BVA (inclement weather date August 27th). The observing session starts at sunset.

26th • Deadline for newsletter submissions for the September 2011 edition of *Observations*.

26th • Reservations start for the September 9th planetarium show at the WCU Planetarium. For more information, please visit the planetarium's [webpage](#).

September 2011

7th • PA Outdoor Lighting Council monthly meeting starting at 7:30 p.m. Meetings are open to the public. For more information and directions, visit the [PA Outdoor Lighting Council](#) website.

16th • West Chester University Planetarium Show, "Our Milky Way Galaxy," in the Schmucker Science Building. The show starts at 7 p.m. Reservations are required. For more information and reservations, visit the planetarium's [webpage](#).

13th • DVD Lecture Series: "The Rationale for a Space Telescope," a half-hour video presentation of a lecture by Dr. David M. Meyer, Northwestern University. The presentation immediately precedes the monthly meeting and starts at 7:00 p.m.

13th • CCAS Monthly Meeting, Room 113, Merion Science Center (former Boucher Building), West Chester University. The meeting starts at 7:30 p.m. Guest Speaker: Dr. Andrej Prsa, Villanova University. "Research on Eclipsing Binary Star Systems in the Kepler Fields."

20th • Open call for articles and photographs for the October 2011 edition of *Observations*.

23rd • CCAS Monthly Observing Session, Myrick Conservancy Center, BVA (inclement weather date September 24th). The observing session starts at sunset.

26th • Deadline for newsletter submissions for the October 2011 edition of *Observations*.

30th • Reservations start for the October 21st planetarium show at the WCU Planetarium. For more information, visit the planetarium's [webpage](#).

September 2011 Guest Speaker

by Dave Hockenberry, CCAS Program Chair

Our first meeting of the 2011-2012 season is scheduled for September 13, 2011 starting at 7:30 p.m. The meeting will be held in Room 113, Merion Science Center (former Boucher Building), West Chester University. Our guest speaker is Dr. Andrej Prsa, from [Villanova University](#). His presentation is entitled, "Research on Eclipsing Binary Star Systems in the Kepler Fields."

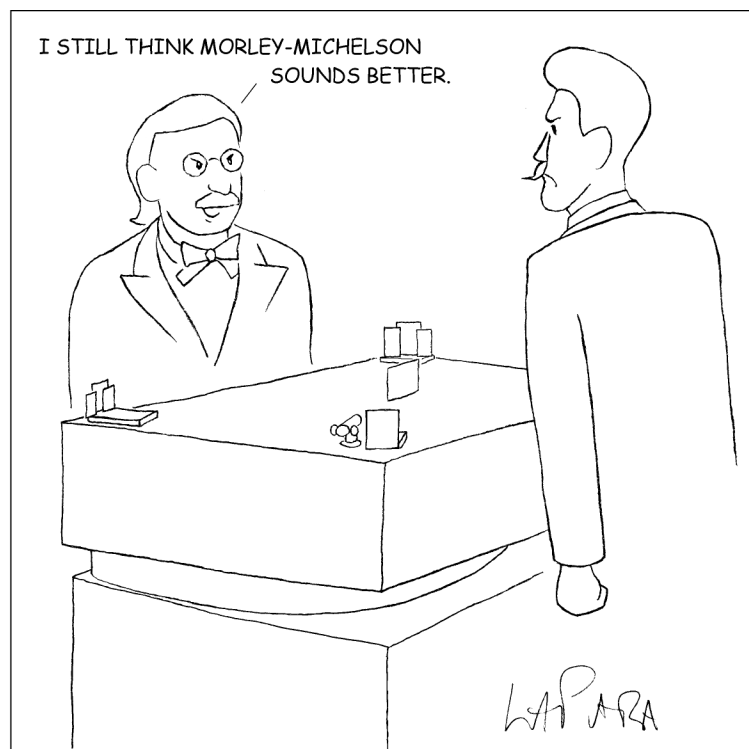
Please note that inclement weather or changes in speakers' schedules may affect the program. In the event there is a change to the program, CCAS members will be notified via e-mail with as much advance notice as possible.

We are looking for presenters for our 2011-2012 season. If you are interested in presenting or know someone who would be an interesting guest speaker, please contact our Program Chairperson Dave Hockenberry at programs@ccas.us.

We are also looking for Constellation of the Month (COM) presenters for the 2011-2012 season. COM is a great way to learn the night sky and a useful tool if you are pursuing one of the Astronomical League's observing club awards. Participating is easy! Contact Kathy Buczynski at vp@ccas.us for a COM template to fill out.

Nicholas's Humor Corner

by Nicholas La Para



CCAS Summer Party

by Don Knabb, CCAS Secretary & Observing Chair

The CCAS Summer Party is scheduled for Saturday, August 27th from 6 p.m. to 10 p.m. We're going to try something different this year and gather at Stargazers Vineyard and Winery. Wine will be available for tasting and purchase, and we will look to our members to bring food to share.

The Vineyard overlooks the Brandywine Creek from its south facing slopes just north of Unionville, PA in Southern Chester County. The Vineyard is near the "Stargazers Stone" which marks the location of the observatory Mason and Dixon used in surveying the border between Pennsylvania and Maryland. They were known as "the stargazers" because they used celestial navigation to correct their measurements over the ground.

We will gather in the tasting room, which includes tables and large garage doors that open onto a flat area. This allows us to have the party rain or shine. And yes, we may bring telescopes to set up for observing the night sky! At the end of this article are pictures of the tasting



The Stargazers Vineyard

area, dining area, winery and tasting building, and the vineyard.

I enjoy the wine that Stargazers makes, and I hope you will enjoy it also. Stargazers offers 5 samples of wine for \$5, and that amount is refunded if you purchase three bottles. I think this a fair arrangement, since there is no fee whatsoever for having our party at the winery. Please note: you don't have to buy or drink wine to attend the picnic. We can bring any other drinks we

want, sodas, beer, etc.

I would like to have an idea of how many members plan to attend the party and what you would like to bring to share. Barb and I will bring an assortment of sandwiches from Primo Hoagies in West Chester, and we'll bring plates, cups, napkins and plastic utensils. We need members to bring other food such as side dishes, chips and dip, non-alcoholic drinks and desserts. You'll need to bring

(Continued on page 11)



Dining Area



Wine Tasting Area

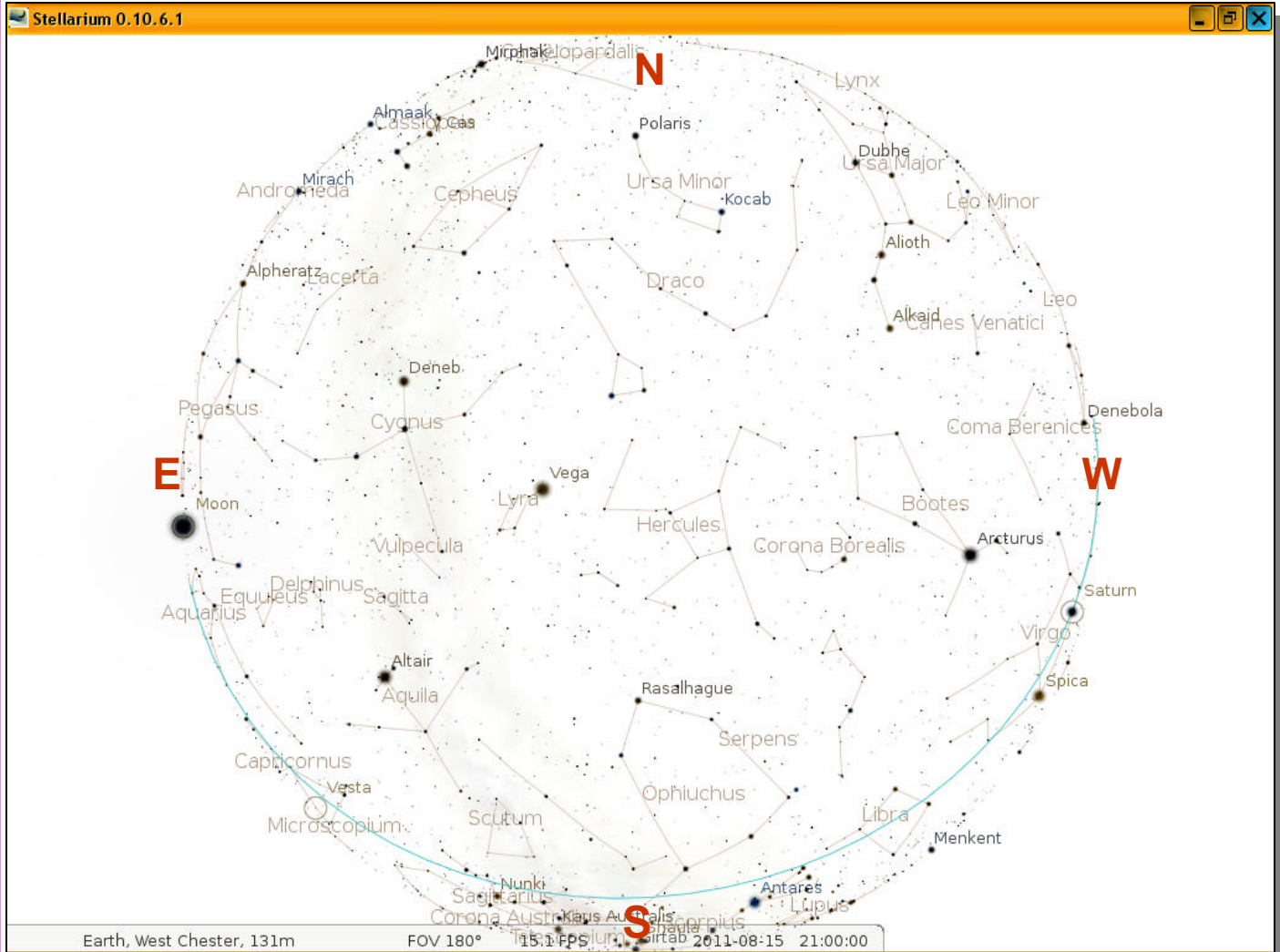


Winery Exterior

The Sky Over Chester County

August 15, 2011 at 9:00 p.m. ET

Note: This screen capture is taken from Stellarium, the free planetarium software available for download at www.stellarium.org.



Date	Civil Twilight Begins	Sunrise	Sunset	Civil Twilight Ends	Length of Day
8/01/2011	5:28 a.m. EDT	5:59 a.m. EDT	8:15 p.m. EDT	8:45 p.m. EDT	14h 15m 50s
8/15/2011	5:43 a.m. EDT	6:12 a.m. EDT	7:58 p.m. EDT	8:27 p.m. EDT	13h 45m 40s
8/31/2011	5:59 a.m. EDT	6:27 a.m. EDT	7:34 p.m. EDT	8:02 p.m. EDT	13h 06m 55s

Moon Phases					
New Moon	8/28/2011	11:04 p.m. EDT	Full Moon	8/13/2011	2:57 p.m. EDT
First Quarter	8/06/2011	7:08 a.m. EDT	Last Quarter	8/21/2011	5:54 p.m. EDT

August 2011 Observing Highlights

by Don Knabb, CCAS Secretary & Observing Chair

August 2-6	Asteroid Vesta shines at magnitude 5.6, the brightest asteroid viewing for 9 years!
August 3-4	The waxing crescent Moon is below Saturn, then Spica
August 6	First Quarter Moon, 7:08 a.m.
August 10	Pi Sagittarii disappears behind the dark edge of the Moon
August 12-13	The Perseid Meteor Shower peaks and fights with the full Moon
August 13	Full Moon, 2:57 p.m.
August 19	Jupiter rises below the waning gibbous Moon
August 21	Last Quarter Moon, 5:54 p.m.
August 21	The Pleiades rise above the Moon
August 22-23	Neptune is at opposition
August 28	New Moon, 11:04 p.m.

The best sights this month: Our friend the ringed planet Saturn slips toward the glow of the sunset during August. But, although we say good-bye to Saturn, we say hello to Jupiter, which is rising late in the evening. August is also the time for the Perseid Meteor Shower, although this year the Full Moon will wash out all but the brightest fireballs. And when the Moon isn't lighting up the sky, enjoy the glow of our home galaxy, the Milky Way.

Mercury: Mercury passes us in our race around the Sun (a race it always wins!) as it goes through inferior conjunction on August 17th and emerges into the pre-dawn sky at month's end.

Venus: Venus does the opposite of Mercury and goes through superior conjunction as it passes behind the Sun on August 16th. Therefore, Venus is lost from view during August. But we can look forward to it appearing in the evening skies during September!

Mars: The red planet will continue to be an early morning object for a few months, rising around 2 or 3 a.m. during August.

Jupiter: The great show of Jupiter begins during August if you stay up late enough to see the king of the planets rise around midnight at the beginning of August and around 10 p.m. at the end of the month. But what a sight it is! I was up around 5 a.m. a week or two ago to use the litter box and glanced out at the last quarter Moon, only to see an incredibly bright Jupiter not far away. But, I have a rule about setting up a telescope in my pajamas, so I went back to bed.

Saturn: We have the month of August to still view beautiful Saturn, but as the month progresses it falls further toward the west and into the murky skies near the horizon. Enjoy the wonder of the rings while they last.

Uranus and Neptune: Uranus is best viewed just before dawn, so it is not high on my observing list until later this year. Neptune reaches opposition on August 22nd, so it will be a great telescopic target around midnight or a bit later. Finder charts are available at <http://www.skyandtelescope.com>.

The Moon: Full Moon occurs on August 13th. This Full Moon is called the Full Sturgeon Moon by Native Americans. The fishing tribes are given credit for the naming of this Moon, since sturgeon, a large fish of the Great Lakes were most readily caught during this month. A few tribes knew it as the Full Red Moon because as the Moon rises it appears reddish through the sultry haze of summer.

Some lunar highlights this month are on August 3rd when the Moon is near Saturn and August 10th when the dark edge of the waxing gibbous Moon covers Pi Sagittarii, a 2.9 magnitude star in Sagittarius. Then on August 19th the Moon rises above Jupiter and is below the Pleiades on August 22nd. August is full of lunar fun!

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May Observing Session a Big Hit!

by Don Knabb, CCAS Secretary & Observing Chair

Greetings fellow star gazers! Many thanks to everyone who came to our monthly stargazing session at the Myrick Conservation Center of the Brandywine Valley Association (BVA) on May 6th, 2011!

Especially a big THANK YOU to Roy Kalinowski for staying to lock the gate. Barb and I had an early start planned for the following morning.

That evening was one of the best attended BVA observing nights I have seen. If I counted correctly we had 11 CCAS members and 10 guests!

The sky presented many wonderful sights such as Saturn, the Beehive, M13, the Coat Hanger Cluster, the Coma Cluster (seen with the naked eye!) and even a faint Sombrero Galaxy thanks to Bob Popovich's keen knowledge of the sky.

Our members were great at teaching the guests about telescopes and sky observing. We might have a few new members because of the great interaction everyone had with the folks who came out that evening. I believe most of the people who came out did so after seeing the event posted on the CCAS web site.

Let's hope this month's observing session, scheduled on August 26th (rain date the 27th) draws a big crowd too! Hope to see you all that night!



Observing Session (Cont'd)



Enceladus Rains Water on Saturn

by ESA, Noordwijk, Netherlands

The European Space Agency's (ESA) Herschel space observatory has shown that water expelled from the moon Enceladus forms a giant torus of water vapor around Saturn. The discovery solves a 14-year mystery by identifying the source of the water in Saturn's upper atmosphere.

Herschel's latest results mean that Enceladus is the only moon in the solar system known to influence the chemical composition of its parent planet. It expels around 70 gallons (250 kilograms) of water vapor every second through a collection of jets from the south polar region known as the tiger stripes because of their distinctive surface markings.

These crucial observations reveal that the water creates a doughnut-shaped torus of vapor surrounding the ringed planet. The total width of the torus is more than 10 times the radius of Saturn, yet it is only about one Saturn radius thick. Enceladus orbits the planet at a distance of about four Saturn radii, replenishing the torus with its jets of water.

"There is no analogy to this behavior on Earth," says Paul Hartogh from Max Planck Institute for Solar System Research, Katlenburg-Lindau, Germany, who led the collaboration on the analysis of these results. "No significant quantities of water enter our atmosphere from space. This is unique to Saturn."

Looking Up: Binocular objects in Sagittarius and Scorpius

by Don Knabb, CCAS Secretary & Observing Chair

I always look forward to August when we have our best opportunity to gaze into the southern constellations of Scorpius and Sagittarius. Although I love “going deep” and finding the faint fuzzy objects with a telescope, often I just like to settle back into a lounge chair with my handheld binoculars near by and gaze upon the brighter Messier objects that inhabit the area of the sky above Sagittarius. If you are able to find a dark sky observing site several of the objects in the picture below are visible with the naked eye, but even a

small set of binoculars provide an incredible view into the heart of our Milky Way galaxy. In this article I’ll give a brief description of my favorite objects in this area of the sky.

The Milky Way is the “steam” rising out of the “teapot” of Sagittarius. Sagittarius is more correctly known as The Archer, but the teapot shape is so distinctive that I only think of that nickname when I see Sagittarius.

Beginning at the top we see M17, the Omega, Swan or Lob-

ster Nebula. This is one of the brightest diffuse nebula in the sky and it is at the limit of naked eye visibility in dark skies at magnitude 6.0.

Beneath M17 is M18, an open cluster containing a few dozen bright stars. This cluster does not show up well in the photo but you won’t mistake it when it lands in the view of your binoculars. This cluster is considered to be quite young at only 32 million years old (there, doesn’t that make you feel young!).

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Photo by the author, Canon 7D mounted on a Meade LXD equatorial mount, Canon EF 50mm f/1.4 lens stopped down to 2.8, 40 seconds at ISO 800, taken near Blakeslee, PA.

Looking Up (cont'd)

(Continued from page 8)

Continuing down and to the right is M24, the Sagittarius Star Cloud. M24 is not actually a star cluster but is a view toward the center of the Milky Way through a tunnel in the Milky Way's interstellar dust. With a total magnitude of 4.6 it is the densest concentration of stars visible in binoculars and is easily visible to the naked eye at a dark observing site. I often get lost in M24 for minutes at a time! You can read more about this object in the July 2010 issue of *Observations* in my *Through the Eye-piece* article.

Far off to the right is M23, a beautiful open cluster that shines at magnitude 5.5. This cluster fills an area the size of the full Moon.

On the opposite side of M24 is M25, another remarkable open cluster. This 4.6 magnitude cluster contains about three dozen bright stars and may contain up to 600 stars.

Next we will look directly below M24 where we find M22, one of the brightest globular clusters in the sky and among the first to be discovered in 1665. M22 is one of the finest globular clusters in the sky and one can only imagine what it would look like if it were at the zenith!

Above the teapot's spout we see the duo of M8 and M20. M8 is the Trifid Nebula, one of the most famous objects in the sky.

It is an unusual combination of an open cluster, an emission nebula, a reflection nebula and a dark nebula that divides the emission nebula into three parts.

M20 is the equally famous Lagoon Nebula, first observed in 1654. While the Trifid Nebula is usually not visible to the naked eye, the Lagoon nebula can easily be perceived apart from the Milky Way background. M20 is a giant glowing cloud of interstellar gas divided by a dark lane of dust, "the lagoon", and includes a cluster of young stars, NGC 6530 that have formed from it.

The final object is in the far lower right of the picture, M7. M7 is also known as Ptolemy's Cluster and is an open cluster in the constellation Scorpius. It is a wonderful object for binoculars.

At magnitude 3.3 it is visible to the naked eye so long as it is far enough above the horizon to be out of the glow of light pollution. This cluster was known to Ptolemy, who mentioned it as far back as 130 A.D. M7 is made up of approximately 80 stars.

So I hope you have an opportunity to sit back in a chair and enjoy these beautiful and easy to find Messier objects in the southern sky while you have the chance. They are visible for only a few months before they head south for the winter.

Information credits: All object information was from the iPad application Sky Safari Pro.

Observing Highlights (cont'd)

(Continued from page 5)

Constellations: The warm nights and bright stars of August make for some great observing opportunities. The summer triangle and all its treasures are shining overhead and if we get a good clear night the Milky Way arches overhead like the backbone of the sky. The Dipper is holding water and Cassiopeia is climbing up the other side of the sky. As the night gets late the Great Square of Pegasus is easily visible so grab your binoculars and look for our neighbor galaxy Andromeda.

Messier/deep sky: Look for my Looking Up article elsewhere in *Observations* for a list of my favorite deep sky objects of August, the Messier objects in Sagittarius.

Comets: Comet C/2009 P1 (Garradd), know to his or her friends as Comet Garradd, passes near two bright star clusters during August. This 7th magnitude fuzz ball lies less than 1 degree from M15 in Pegasus on August 1st and 2nd, and on August 26th it is very close to M71 in Sagitta. A finder chart is in the August issue of *Sky and Telescope*. Both these encounters are well positioned for evening viewing.

Meteor showers: It is again time for the most popular meteor shower of the year, the Perseid meteor shower! Unfortunately, this year is not a good

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New GOES-R to Give More Tornado Warning Time

by Dauna Coulter & Dr. Tony Phillips

So far this spring, more than 1,400 tornadoes have struck the U.S. Some of them have cut jaw-dropping trails of destruction across the countryside and, tragically, across inhabited communities, too. Hundreds of lives have been lost in the onslaught.

Throughout the season, the National Weather Service has routinely issued tornado alerts. In the case of the Alabama tornadoes of April 27th, forecasters warned of severe weather five full days before the twisters struck. Because they couldn't say precisely *where* the twisters would strike, however, many of their warnings went unheeded.



"If people get a hurricane warning, they often evacuate the area," notes NOAA's Steve Goodman. "But we react differently to tornado warnings."

Perhaps it's because tornadoes are smaller than hurricanes, and the odds of a direct hit seem so remote. Recent pictures from Tuscaloosa, Alabama, and Joplin, Missouri, however, show the perils of playing those odds. Goodman believes that more precise warnings could save lives.

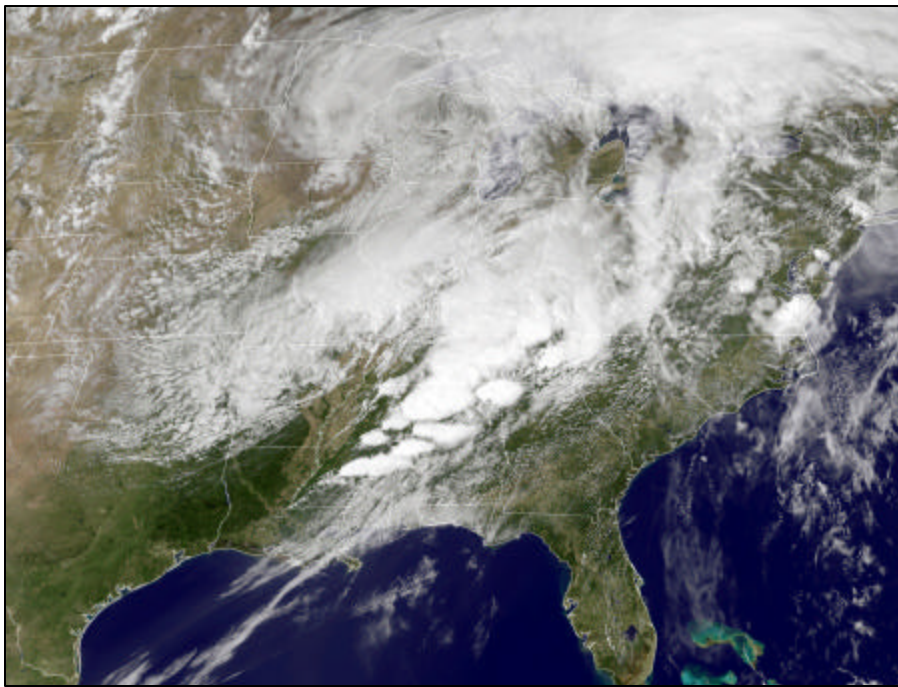
To fine-tune tornado warnings, NOAA will soon launch the first in a series of next-generation weather satellites – GOES-R (Geostationary Operational Environmental Satellites-R series). The spacecraft is brimming with advanced sensors for measuring key ingredients of severe weather including winds, cloud growth, and lightning.

"GOES-R will be the first geostationary spacecraft to carry a lightning sensor," says Goodman, the GOES-R Program Senior Scientist. "Studies show that sudden changes in the total lightning activity correlate with storm intensity—and with tornadoes."

The lightning mapper will detect and map not only cloud-to-ground lightning, but also bolts within and between clouds. The kind of cloud-to-ground lightning we see from our front yards accounts for only 15-20 percent of total lightning. To get a clear idea of a storm's intensity, meteorologists need to know about *all* the lightning—a view GOES-R can provide.

All by itself, the lightning mapper will provide 7 minutes more lead time in tornado warnings,

(Continued on page 11)



This GOES image shows the storms that spurred the intense April 27 tornado outbreak in the southern U.S. Animation showing the development of weather can be seen at

<http://earthobservatory.nasa.gov/NaturalHazards/view.php?id=50347>

Space Place (Cont'd)

(Continued from page 10)

according to Goodman. GOES-R's state-of-the-art instruments will also improve long-range forecasts.

"The satellite's Advanced Baseline Imager (ABI), for instance, will provide a much clearer picture of clouds," says NOAA research meteorologist Tim Schmit. Compared to lesser instruments already in orbit, ABI can better detect super-cold "overshooting tops," evidence of enormous energy and upward velocity that correlate with subsequent severe weather.

"Accurate advanced notice of high-risk tornadic conditions can

cue officials to close schools and businesses even before tornadoes are actually detected," says Schmit.

Forecasters doubt tornadoes can ever be predicted with 100% accuracy. The twisters are just too capricious. GOES-R, however, is a step in the right direction.

Find out more about GOES-R's unprecedented capabilities at <http://www.goes-r.gov>. Young people can learn more about tornadoes and all kinds of other weather at <http://scijinks.gov>.

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

Summer Picnic (Cont'd)

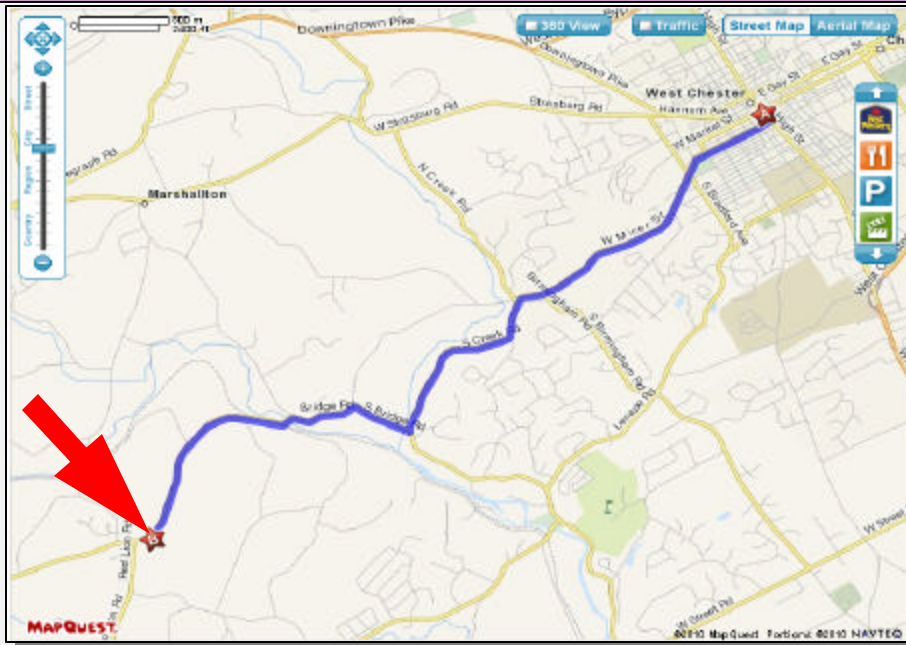
(Continued from page 3)

along any serving items you need for your contribution such as ice, bowls and serving spoons. We essentially need to be self sufficient other than getting wine from Stargazers. Please give me a call at 610-436-5702 if you plan to attend the party. Children are of course invited!

Stargazers Vineyard and Winery is out in the country so getting there is a pleasant drive. And, the skies should be reasonably dark for naked eye and telescopic viewing.

For directions and to find out more about Stargazers Vineyard and Winery, go to their website at: <http://www.stargazersvineyard.com/index.php>

CCAS Directions



Brandywine Valley Association

1760 Unionville Wawaset Rd
West Chester, PA 19382
(610) 793-1090

<http://brandywinewatershed.org/>

BVA was founded in 1945 and is committed to promoting and protecting the natural resources of the Brandywine Valley through educational programs and demonstrations for all ages.

Brandywine Valley Association

The monthly observing sessions (held year-round) are held at the Myrick Conservation Center of the Brandywine Valley Association.

To get to the Myrick Conservation Center from West Chester, go south on High Street in West Chester past the Courthouse. At the next traffic light, turn right on Miner Street, which is also PA Rt. 842. Follow Rt. 842 for about 6 miles. To get to the observing site at the BVA property, turn left off Route 842 into the parking lot by the office: look for the signs to the office along Route 842. From that parking lot, go left through the gate and drive up the farm lane about 800 feet to the top of the hill. The observing area is on the right.

If you arrive after dark, *please turn off your headlights and just use parking lights* as you come up the hill (so you don't ruin other observers' night vision).

CCAS Directions

West Chester University Campus

The monthly meetings (September through May) are held in Room 113 in Merion Science Center (formerly the Boucher Building), attached to the Schmucker Science Center. The Schmucker Science Center is located at the corner of S. Church St & W. Rosedale Ave. Parking is generally available across Rosedale in the Sykes Student Union parking lot (Lot K).



Observing Highlights (cont'd)

(Continued from page 9)

viewing opportunity because the Full Moon will be a distraction during the peak of the shower in the predawn hours. But my favorite part of this shower is earlier in the evening when you will see fewer shooting stars but you have a good chance of seeing an "Earth grazer" that travels nearly all the way across the sky. Don't miss this shower! When you see a fireball cross the sky you will never forget it.

CCAS Membership Information and Society Financials

Treasurer's Report

by Liz Smith

July 2011 Financial Summary

Beginning Balance	\$1,816
Deposits	\$40
Disbursements	\$0
Ending Balance	\$1,856

New Member Welcome!

Welcome new CCAS member Garret Bullard of West Chester, PA.

We're glad you decided to join us under the stars! Clear Skies to you!

Membership Renewals

You can renew your CCAS membership by writing a check payable to "Chester County Astronomical Society" and sending it to our Treasurer:

Liz Smith
1567 Shadyside Rd.
West Chester PA 19380

The current dues amounts are listed in the *CCAS Information Directory*. Consult the table of contents for the directory's page number in this month's edition of the newsletter.

Join the Fight for Dark Skies!

You can help fight light pollution, conserve energy, and save the night sky for everyone to use and enjoy. Join the nonprofit International Dark-Sky Association (IDA) today. Individual memberships start at \$30.00 for one year. Send to:

International Dark-Sky Association
3225 North First Avenue
Tucson, AZ 85719

Phone: 520-293-3198
Fax: 520-293-3192
E-mail: ida@darksky.org

For more information, including links to helpful information sheets, visit the IDA web site at:

<http://www.darksky.org>

Note that our CCAS Webmaster John Hepler has a link to the IDA home page set up on our Society's home page at <http://www.ccas.us>.

Dark-Sky Website for PA

The Pennsylvania Outdoor Lighting Council has lots of good information on safe, efficient outdoor security lights at their web site:

<http://www.POLCouncil.org>

Find out about Lyme Disease!

Anyone who spends much time outdoors, whether you're stargazing, or gardening, or whatever, needs to know about Lyme Disease and how to prevent it. You can learn about it at:

<http://www.LymePA.org>

Take the time to learn about this health threat and how to protect yourself and your family. It is truly "time well spent"!

CCAS Event Information

We've set up a special phone number you can dial to find out if our monthly observing session and other scheduled events will be held or postponed. Call **610-436-0829** after 5 PM ET to hear a recording to find out the latest news.

Good Outdoor Lighting Websites

One of the biggest problems we face in trying to reduce light pollution from poorly designed light fixtures is easy access to good ones. When you convince someone, a neighbor or even yourself, to replace bad fixtures, where do you go for good lighting fixtures? Check out these sites and pass this information on to others. Help reclaim the stars! And save energy at the same time!



Light pollution from poor quality outdoor lighting wastes billions of dollars and vast quantities of valuable natural resources annually. It also robs us of our heritage of star-filled skies. Starry Night Lights is committed to fighting light pollution. The company offers the widest selection of ordinance compliant, night sky friendly and neighbor friendly outdoor lighting for your home or business. Starry Night Lights is located in Park City, Utah.

Phone: 877-604-7377
Fax: 877-313-2889

<http://www.starrynightlights.com>



Green Earth Lighting is a dedicated lifetime corporate member of the International Dark-Sky Association. GEL's products are designed to reduce or eliminate the negative effects outdoor lighting can have while still providing the light you need at night.

Green Earth Lighting LLC
620 Onion Creek Ranch Rd
Driftwood, Texas 78619

Phone: 512-944-7354

<http://www.greeneearthlighting.com>

Local Astronomy-Related Stores

Listing retail sites in this newsletter does not imply endorsement of any kind by our society. This information is provided as a service to our members and the public only.



Skies Unlimited is a retailer of telescopes, binoculars, eyepieces and telescope accessories from Meade, Celestron, Televue, Orion, Stellarvue, Takahashi, Vixen, Losmandy and more.

Skies Unlimited
Suburbia Shopping Center
52 Glocker Way
Pottstown, PA 19465

Phone: 610-327-3500 or 888-947-2673
Fax: 610-327-3553

<http://www.skiesunlimited.net>



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CCAS Information Directory

CCAS Lending Telescopes

Contact Don Knabb to make arrangements to borrow one of the Society's lending telescopes. CCAS members can borrow a lending telescope for a month at a time; longer if no one else wants to borrow it after you. Don's phone number is 610-436-5702.

CCAS Lending Library

Contact our Librarian, Barb Knabb, to make arrangements to borrow one of the books in the CCAS lending library. Copies of the catalog are available at CCAS meetings, and on the CCAS website. Barb's phone number is 610-436-5702.

Contributing to *Observations*

Contributions of articles relating to astronomy and space exploration are always welcome. If you have a computer, and an Internet connection, you can attach the file to an e-mail message and send it to: newsletter@ccas.us

Or mail the contribution, typed or handwritten, to:

John Hepler
2115 Lazor St.
Apt. 227
Indiana, PA 15701

CCAS Newsletters via E-mail

You can receive the monthly newsletter (in full color!) via e-mail. All you need is a PC or Mac with an Internet e-mail connection. To get more information about how this works, send an e-mail request to John Hepler, the newsletter editor, at: newsletter@ccas.us.

CCAS Website

John Hepler is the Society's Webmaster. You can check our Website at: <http://www.ccas.us>

John welcomes any additions to the site by Society members. The contributions can be of any astronomy subject or object, or can be related to space exploration. The only requirement is that it is your own work; no copyrighted material! Give your contributions to John Hepler (724-801-8789) or e-mail to webmaster@ccas.us.

CCAS Purpose

The Chester County Astronomical Society was formed in September 1993, with the cooperation of West Chester University, as a non-profit organization dedicated to the education and enjoyment of astronomy for the general public. The Society holds meetings (with speakers) and observing sessions once a month. Anyone who is interested in astronomy or would like to learn about astronomy is welcome to attend meetings and become a member of the Society. The Society also provides telescopes and expertise for "nights out" for school, scout, and other civic groups.

CCAS Executive Committee

For further information on membership or society activities you may call:

President:	Roger Taylor 610-430-7768
Vice Pres:	Kathy Buczynski 610-436-0821
ALCor and Treasurer:	Liz Smith 610-842-1719
Secretary and Observing:	Don Knabb 610-436-5702
Librarian:	Barb Knabb 610-436-5702
Program:	Dave Hockenberry 610-558-4248
Education:	Kathy Buczynski 610-436-0821
Webmaster and Newsletter:	John Hepler 724-801-8789
Public Relations:	Deb Goldader 610-304-5303



CCAS Membership Information

The present membership rates are as follows:

REGULAR MEMBER.....\$25/year
SENIOR MEMBER.....\$10/year
STUDENT MEMBER.....\$ 5/year
JUNIOR MEMBER.....\$ 5/year
FAMILY MEMBER.....\$35/year

Membership Renewals

Check the Membership Renewals on the front of each issue of *Observations* to see if it is time to renew. If you need to renew, you can mail your check, made out to "Chester County Astronomical Society," to:

Liz Smith
1567 Shadyside Rd.
West Chester PA 19380

Phone: 610-842-1719
e-mail: treasurer@ccas.us

Sky & Telescope Magazine Group Rates

Subscriptions to this excellent periodical are available through the CCAS at a reduced price of **\$32.95**, much less than the newsstand price of \$66.00, and also cheaper than individual subscriptions (\$42.95)! Buying a subscription this way also gets you a 10% discount on other Sky Publishing merchandise.

To **start** a **new** subscription, make **sure** you make out the check to the **Chester County Astronomical Society**, note that it's for *Sky & Telescope*, and mail it to Liz Smith.

To **renew** your "club subscription" contact Sky Publishing directly. Their phone number and address are in the magazine and on their renewal reminders. If you have **any** questions call Liz first at 610-842-1719.

Astronomy Magazine Group Rates

Subscriptions to this excellent periodical are available through the CCAS at a reduced price of **\$34.00** which is much less than the individual subscription price of \$42.95 (or \$60.00 for two years). If you want to participate in this special Society discount offer, **contact our Treasurer Liz Smith**.