



Observations

A Monthly Publication Of The
CHESTER COUNTY ASTRONOMICAL SOCIETY

Vol. 20, No. 8

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

August 2012

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Remembering Astronaut Sally Ride



CCAS members John Hepler and Kathy Buczynski pose with Sally Ride at West Chester University October 9, 2005. Sally Ride brought her program, Sally Ride Science™ to campus for a day of workshops devoted to promoting science and math to adolescent girls. See pg. 2.

Important August 2012 Dates

- 1st** • Full Moon, 11:27 p.m.
- 9th** • Last Quarter Moon, 2:55 p.m.
- 11-12th** • Perseid Meteor Shower Peaks.
- 17th** • New Moon, 11:54 a.m.
- 24th** • First Quarter Moon, 9:54 a.m.
- 31st** • Full Moon, 9:58 a.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 24th** at the Delaware Museum of Natural History. As part of the exhibit called Earth from Space, we will host a Star Party to show visitors Earth from space as well as a "space from Earth" perspective.
- ✦ **Friday, September 14th** at Longwood Gardens. As part of the Family Light Night series, from 5 to 9 p.m., we'll do some solar observing early in the program.

Membership Renewals Due

08/2012	Bullard Knabb & Family Lurcott, L.
09/2012	Baudat & Family Catalano-Johnson & Family Lurcott, E.
10/2012	Hicks Sterrett

Summer 2012 Society Events

August 2012

1st • PA Outdoor Lighting Council monthly meeting, 1438 Shaner Drive, Pottstown, PA 19465, 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 2012 edition of *Observations*.

24th • CCAS at the [Delaware Museum of Natural History](#). As part of the exhibit called Earth from Space, we will host a Star Party to show visitors Earth from space as well as a "space from Earth" perspective.

26th • Deadline for newsletter submissions for the September 2012 edition of [Observations](#).

September 2012

5th • PA Outdoor Lighting Council monthly meeting, 1438 Shaner Drive, Pottstown, PA 19465, starting at 7:30 p.m. Meetings are open to the public. For more information and directions, visit the [PA Outdoor Lighting Council](#) website.

7th • West Chester University Planetarium Show: "The Galactic Center," in the Schmucker Science Building. The show starts at 7 p.m. and run approximately one hour in length. For more information and reservations, visit the planetarium's [webpage](#).

11th • CCAS Monthly Meeting, Room 113, Merion Science Center (former Boucher Building), West Chester University. Meet & Greet over coffee and refreshments for members and non-members alike from 7:00 to 7:30 p.m. The meeting starts immediately after. Guest Speaker: Derrick Pitts, Chief Astronomer at the Franklin Institute.

13th • The von Kármán Lecture Series: [The Challenge of Mars Exploration](#), Jet Propulsion Laboratory, Pasadena, California. Live stream of free lecture presented by NASA & Caltech.

14th • 14, 2012 - CCAS Monthly Observing Session, Special event "Display of Lights" at Longwood Gardens. Event held from 5:00 p.m. to 9:00 p.m., with sunset at 6:30. Longwood staff expect up to 1000 people to attend, so we'll need as many members with their equipment as possible.

20th • Open call for articles and photographs for the October 2012 edition of *Observations*.

26th • Deadline for newsletter submissions for the October 2012 edition of [Observations](#).

Remembering Sally Ride

by John Hepler, CCAS Webmaster & Newsletter Editor

Sally Ride, who blazed trails into orbit as the first American woman in space, died July 23rd, 2012, of pancreatic cancer. She was 61.

Ride rode into space on the space shuttle Challenger in 1983 when she was 32. After her flight, more than 42 other American women flew in space, NASA said.

NASA Administrator Charles Bolden, a former astronaut, said Ride "broke barriers with grace and professionalism — and literally changed the face of America's space program."

CCAS Education Chair Kathy Buczynski and I had the honor

of meeting Sally in 2005 when she brought her program Sally Ride Science™ to West Chester University. Gracious and good humored, she signed autographs for hundreds of girls long after the session was supposed to be over.

We had the opportunity to speak for a few minutes with Sally about CCAS at the end of the day. She seemed pleased by our society's educational outreach program and posed for photos with us (see page one). It was a day I'll always remember.

For more pictures of that day, visit http://ccas.us/scrapbook_gallery3.htm.

Nicholas's Humor Corner

by Nicholas La Para



September 2012 Guest Speaker

by Dave Hockenberry, CCAS Program Chair

Our next meeting will be held on September 11, 2012, 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 will be Derrick Pitts, PhD, chief astronomer at the Franklin Institute.

Please note that inclement weather or changes in speakers' schedules may affect the program. In the event there is a change, CCAS



CCAS Guest Speaker Derrick Pitts

members will be notified via e-mail with as much advance notice as possible.

We are looking for presenters for our meetings in October and November of this year. If you are interested in presenting at either of these meetings, or during one of the Spring 2013 monthly sessions, please contact me at programs@ccas.us.

Landsat Turns Forty

courtesy of Steve Cariddi - Publisher of *The Year In Space*



In 1965, the U.S. Geological Survey proposed the idea of a remote sensing satellite program to gather facts about the natural resources of Earth. In 1970, NASA had permission to build Landsat 1, which was launched forty years ago.

Since then, the Landsat series of satellites has collected millions of multi-spectral images that make it possible to study the long-term environmental effects of everything from natural coastal erosion to urban sprawl.

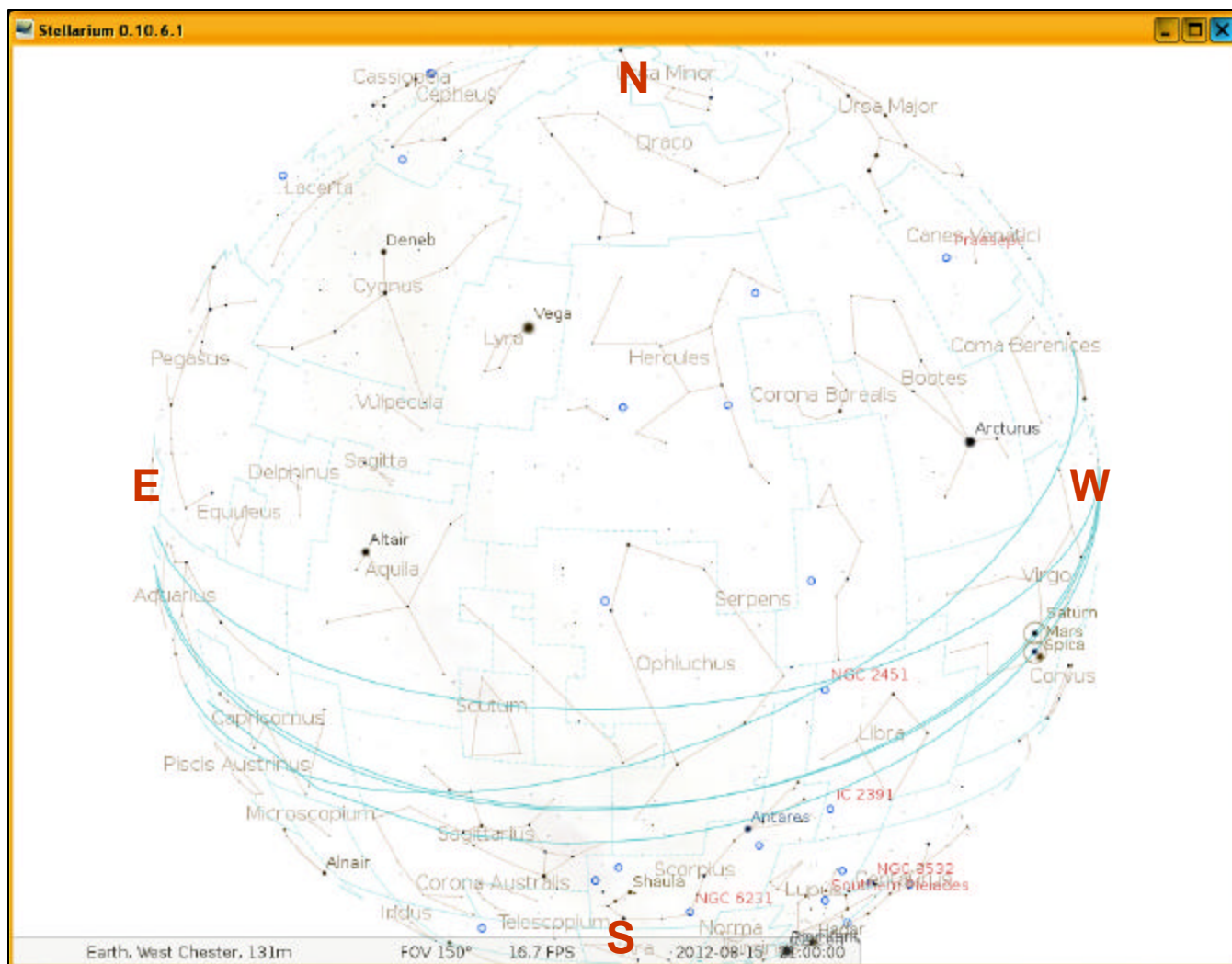
The image at left was taken by Landsat 7, the newest member of the Landsat family. It shows the delta of the Lena River, one of the largest rivers in the world. The Lena Delta Reserve is the most extensive protected wilderness area in Russia. It is an important refuge and breeding grounds for many species of Siberian wildlife.

Image credit: USGS National Center for EROS and NASA Landsat Project Science Office

The Sky Over Chester County

August 15, 2012 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
08/01/2012	5:29 a.m. EDT	6:00 a.m. EDT	8:14 p.m. EDT	8:44 p.m. EDT	14h 14m 06s
08/15/2012	5:44 a.m. EDT	6:14 a.m. EDT	7:57 p.m. EDT	8:25 p.m. EDT	13h 43m 45s
08/31/2012	6:00 a.m. EDT	6:28 a.m. EDT	7:33 p.m. EDT	8:01 p.m. EDT	13h 04m 54s
Moon Phases					
Full Moon	08/01/2012	11:27 p.m. EDT	First Quarter	08/24/2012	9:54 a.m. EDT
Last Quarter	08/09/2012	2:55 p.m. EDT	Full Moon	08/31/2012	9:58 a.m. EDT
New Moon	08/17/2012	11:54 a.m. EDT			

August 2012 Observing Highlights

by Don Knabb, CCAS Treasurer & Observing Chair

August 1	Full Moon, 11:27 p.m.
August 9	Last Quarter Moon, 2:55 p.m.
August 11/12	The Perseid meteor shower peaks
August 13	The Moon, very low in the west, occults Venus in broad daylight
August 13/14	Mars is between Saturn and Spica
August 17	New Moon, 11:54 a.m.
August 21	The Moon is close to Mars, Saturn and Spica
August 24	Neptune is at opposition
August 24	First-quarter Moon, 9:54 a.m.
August 31	Full Moon, 9:58 a.m.

The best sights this month: Great balls of fire! That is what we hope to see Saturday night August 11th into the early morning hours of August 12th as the Perseid meteor shower peaks. This is a great year for this shower with a waning crescent Moon not rising until 1 a.m. Also watch as Mars passes between Saturn and Spica at mid-month and a waxing crescent Moon will add to the show on August 21st.

Mercury: Mercury is about as high as it ever gets in the sky in the dawn light of August 16th. It will be very easy to find on the 15th when Venus, the Moon and Mercury line up about 45 minutes before sunrise.

Venus: Venus shines high in the pre-dawn sky all month, but especially on August 15th when it rises 3 ½ hours before the Sun as it reaches greatest elongation, 46 degrees west of the Sun.

Mars: The red planet moves eastward during August and on the night of August 13/14 it passes between Saturn and Spica. This is a great naked eye event to observe from night to night as the arrangement of the three objects changes every evening.

Jupiter: Jupiter is an early morning planet, rising around 1 a.m. I'll be waiting a few months to view the king of the planets in a telescope until it is rising at a more civilized hour around the time of year when the leaves are turning color.

Saturn: Saturn continues to hang out with Spica in the southern sky making it easy to find as soon as the sky darkens. Almost any size telescope will allow you to see the beautiful ring structure, so set up a telescope on a warm August evening and take a long look at Saturn before it slips into the sunset in early autumn.

Uranus and Neptune: Neptune is at opposition on August 24th so it is high in the sky around midnight. Uranus is not far behind but is best observed in the wee hours of the morning. Sky maps to locate these gas giants can be found at <http://www.skypub.com>, the website of Sky and Telescope magazine.

The Moon: The Moon is full on August 1st and 31st! The first full Moon is called the Full Sturgeon Moon. The Native American fishing tribes are given credit for the naming of this Moon, since sturgeon, a large fish of the Great Lakes and other major bodies of water, 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 August haze. It was also called the Green Corn Moon or Grain Moon. The second full moon of August is a blue moon, so we'll just call it the Full Blue Moon.

On August 13th the Moon will occult Venus during broad daylight. We are at the very edge of where this event is able to be observed. The planetarium software Stellarium shows this happening around 4:20 p.m. You'll need a low western horizon to see the event. Binoculars or a telescope with low magnification are the best way to see this and the Moon and Venus are far away from the Sun in the sky, but as always take great care to never look at the Sun without a top quality solar filter installed on your equipment.

(Continued on page 8)

NASA's Space Place for Kids: Don't Be a Lightning Rod

by Diane K. Fisher

A lightning storm is one of the most dramatic shows of nature. You may feel like rushing outside to experience the blinding bolts, with the loud CRACKs and rumbles of surround-sound thunder following close behind.

But don't.

Lightning is dangerous. Stay inside.

Each year there are around 25 million lightning flashes in the United States. That's a lot of chances to be a lightning victim. Although most people who are struck by lightning survive, many are badly injured, some permanently.

But what causes lightning? And how can we stay safe?

Lightning starts inside a storm cloud. Strong winds inside the cloud toss ice particles and water drops around like underwear in a clothes dryer. The ice and water particles rub together, which builds up static electricity. Sometimes the same thing happens to your underwear in the dryer! But in a cloud, it's on a humongous scale.

The strong static electrical charge that builds up in the cloud "wants" to discharge. So it seeks out something with the opposite kind of charge, which is usually another cloud. But often it is the ground. The charge—in the form of a lightning bolt—travels along the easiest route to



the ground. That usually means the nearest, tallest, or most conductive object—such as a tree or a lightning rod. Don't let that lightning rod be you!

People have been struck by lightning while talking on a corded phone, while leaning on freezer in their garage, while working on plumbing in the

house, while sailing, while camping, while playing golf (this one is a no-brainer!), and while doing any number of other activities outside. One poor park ranger just doing his job over the years was struck by lightning seven times!

Understanding how lightning behaves will help you keep safe before, during, and after a storm. If you cannot reach shelter inside, at least you will know, for example, not to stand under or near a tree or a metal pole or fence. Metal is a great conductor of electricity and invites

(Continued on page 8)



In this storm over Boston, Massachusetts, lightning is find lots of tall objects to strike. NOAA's National Weather Service (NWS) Collection, photo by Boston Globe.

Through the Eyepiece: NGC 6871, the Cygnus Star Chain

by Don Knabb, CCAS Treasurer & Observing Chair

The Cygnus Star Chain is a nice binocular object that is best viewed lying on your back on a sleeping bag or a lounge chair with your binoculars in your hands. That's because Cygnus is very high in the sky during August and if you try to see it holding your binoculars while you are standing up you'll only get a stiff neck. I speak from experience, since that happened to me a few weeks ago when I observed the Cygnus Star Chain, NGC 6871, in preparation for writing this article.

Binoculars are the recommended method of seeing this interesting object. It is too wide spread to capture in anything but the widest field/lowest power telescopic view. The star chain is not terri-

bly far from the famous Coat Hanger Cluster, which is also best viewed with binoculars, so you can see both these objects within a few minutes of gazing into the starry skies.

And starry skies you will see indeed! The Cygnus Star Chain is within the Cygnus Star Cloud, a wide band of stars that appears like a glowing oval between Albireo (the head of the Cygnus the Swan) and Sadr (the center star of Cygnus). If you have a clear night with no Moon to wash out the stars, your view will be filled with thousands of stars. It is good that you will be lying down; otherwise you might pass out from this amazing view.

While you are looking into this

area of the sky, scan the area with your binoculars. The binocular view into this section of the Milky Way reveals a multitude of star groupings. Some of the star groupings are real clusters, not just chance alignments of distant stars. Such is the case with NGC 6871, which appears as a 1 degree long star chain, starting South of 27 Cygni, and running first North and then Northeast through 27 Cygni at 28 Cygni.

When I observed the Cygnus Star Chain in early July I found it quickly in our Orion 10x50 Resolux binoculars. The chain-like appearance of the cluster was immediately apparent. It reminds me a little of Kemble's

(Continued on page 8)



Image credit: Stellarium.org

Eyepiece (cont'd)

(Continued from page 7)

Cascade, which I wrote about in December of 2008. There are images of NGC 6871 on the Internet, but I did not include any because they really don't show this cluster as it appears to your eyes when using binoculars. The Cygnus Star Chain is something that should be experienced live.

NGC 6871 was discovered by Friedrich Georg Wilhelm von Struve (1793-1864) in 1825. Open star clusters are widely distributed in our galaxy and represent a loose collection of stars which number from a few dozen to a few hundred stars and are weakly-held gravitationally. Perhaps the three most famous

such open clusters are the Pleiades (M45) in Taurus, the Beehive (M44) in Cancer and the double cluster in Perseus. They are all characterized with a handful of hot and white prominent stars and nebular material surrounding these stars.

It is easy to find the Cygnus Star Chain. As you can see in the screen capture from Stellarium, NGC 6871 is just east of the center line of Cygnus the Swan, about one third of the way from Sadr to Albireo. You can also see the Cygnus Star Cloud in the Stellarium image, that glow of stars that fills the sky from Sadr to Albireo.

So grab your binoculars and a sleeping bag or a lounge chair and drink your fill of the Milky Way as you seek out the beautiful Cygnus Star Chain!

Information credits:
Dickinson, Terence 1996. Summer Star Gazing. Buffalo, NY. Firefly Books

Astronomy Sketch of the Day, <http://www.asod.info/?p=1260> Disrupting the Cygnus Star Cloud
By Rony De Laet (NGC 6871)

Sky Vistas: Astronomy for Binoculars and Richest-Field Telescopes
By Craig Crossen, Gerald Rhemann

<http://www.perseus.gr/Astro-DSO-NGC-6871.htm>

<http://cs.astronomy.com/asy/m/starclusters/450561.aspx>

Observing (Cont'd)

(Continued from page 5)

Constellations: The Summer Triangle rules the night sky overhead after you stare at the wonders in the southern sky. Find a driveway, put down a sleeping bag and feel the heat of the sun come back out of the driveway, warming your back as you stare upward at Cygnus as it flies down the Milky Way. It's easy to hold binoculars straight up if you are lying on your back. Scan between Aquila and Lyra with your binoculars to find the Coat Hanger Cluster and the Cygnus Star Chain. Then just drink in the stars of our home galaxy the Milky Way.

Messier/deep sky: M13 and M92, bright globular clusters in Hercules are nearly overhead so they are in a great position for viewing with binoculars or a telescope. Don't miss the southern Messier objects in Scorpius and Sagittarius while we have the chance to see them. That part of the sky is filled with incredible objects that are visible for only a short time from Chester County.

Comets: There are no comets brighter than 10th or 11th magnitude in the sky during August.

Meteor showers: Yeah! It is again time for the most popular meteor shower of the year, the

(Continued on page 10)

Space Place (Cont'd)

(Continued from page 6)

lightning looking for a fast, easy way to the ground.

Find out more about lightning and lightning safety at the NOAA/NASA SciJinks website at <http://scijinks.gov/lightning>. It is by the same people who bring you The Space Place (<http://spaceplace.nasa.gov>).

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.

CCAS Original Astrophotography

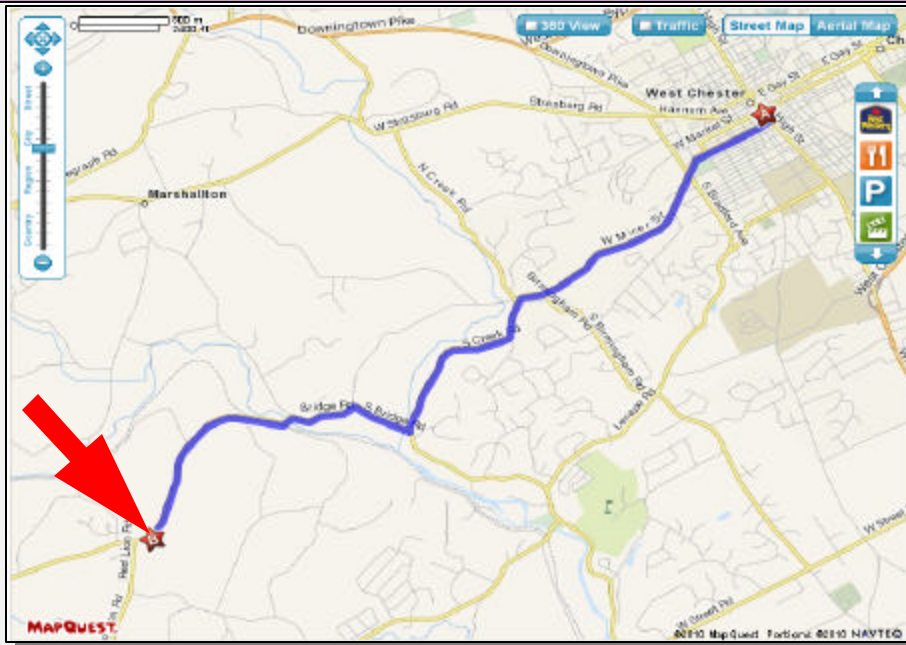
by Dave Hockenberry



NGC 6946, the Fireworks Galaxy in Cepheus

Shot 7/25/12 with QSI 583 wsg camera through AstroTech AT8RC telescope, on AP 1200 GEM. Autoguided with SX Lode-star camera and SX Active Optics unit. Image capture with Maxim DL5. 120 Minutes Luminance (12 X 10 minute exposures), 45 minutes each Red Green and Blue (8 x 5 minute exposures) through Astro-Don filters. Images calibrated, DDP adjustment, hot pixel removal, deconvolution and stacked in CCDStack. RGB production in CCDStack. L-RGB merge, other adjustments in Photoshop CS3. Sky adjustments with Noise Ninja. NGC 6946 is a gorgeous face on galaxy about 10 million light years distant and 40,000 light years across. Since the beginning of the 20th century 9 supernovas have been observed in this galaxy.

CCAS Directions



Brandywine Valley Association

The monthly observing sessions (held February through November) 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.

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.

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 (Cont'd)

(Continued from page 8)

Perseid meteor shower! This year is a great viewing opportunity because the waning crescent Moon will not rise until 1 a.m. 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 fly cross the sky you will never forget it.

CCAS Membership Information and Society Financials

Treasurer's Report

by Don Knabb

June 2012 Financial Summary

Beginning Balance	\$1,265
Deposits	\$258
Disbursements	\$34
Ending Balance	\$1,489

New Member Welcome!

Welcome new CCAS members John Harp of Parkesburg, PA, and Dr. Peter Zimmer of West Chester University.

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:

Don Knabb
988 Meadowview Lane
West Chester PA 19382

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 organization. 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>



Located in Manayunk, Spectrum Scientifics educates and entertains customers with an array of telescopes, microscopes, binoculars, science toys, magnets, labware, scales, science instruments, chemistry sets, and much more.

4403 Main Street
Philadelphia, PA 19127

Phone: 215-667-8309
Fax: 215-965-1524

Hours:

Tuesday thru Saturday: 10AM to 6PM
Sunday and Monday: 11AM to 5PM

<http://www.spectrum-scientifics.com>

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 out 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 at (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 President:	Liz Smith 610-842-1719
ALCor, Observing, and Treasurer:	Don Knabb 610-436-5702
Secretary:	Ann Miller 610-558-4248
Librarian:	Barb Knabb 610-436-5702
Program:	Dave Hockenberry 610-558-4248
Education:	Kathy Buczynski 610-436-0821
Webmaster and Newsletter:	John Hepler 724-349-5981
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:

Don Knabb
988 Meadowview Lane
West Chester PA 19382-2178

Phone: 610-436-5702
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 Don Knabb.

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