Observations

A Monthly Publication Of The
CHESTER COUNTY ASTRONOMICAL SOCIETY

Vol. 16, No. 12 *December 2008*

In This Issue

Have a safe and happy holiday filled with family, friends, and joy.

Important December Dates

5th • First Quarter Moon.

12th • Full Moon.

13th • Geminid meteor shower peaks in the early morning hours of December 14th. About 75 meteors per hour might be seen.

19th • Last Quarter Moon.

21st • Solstice (northern winter/southern summer begins), 7 A.M. EST.

27th • New Moon.

CCAS Upcoming Nights Out

CCAS has several "nights out" during the month of December. Members are encouraged to help out during these events any way they can.

On Thursday, December 4th at dusk, CCAS hosts a "Night Out" at Simpson Meadows Retirement Community located at 101 Plaza Drive, Downingtown. If the weather doesn't cooperate, CCAS will present an indoor program in the community room.

On Friday, December 19th, CCAS will participate in The Eighth Annual Winter Solstice Celebration at the Lower Merion Conservancy located at Rolling Hill Park, 1301 Rose Glen Road, Gladwyne. Dress warmly, bring a flashlight, and park at the top of Rolling Hill Park. Event runs from 7:00-9:00 P.M. Rain date Saturday, December 20th. For more information and to register for the free event, visit the conservancy's official website at www.lmconservancy.org.

Fall/Winter Society Events

December 2008

3rd • PA Outdoor Lighting Council monthly meeting.

9th • CCAS Holiday Party at the Landmark Americana restaurant in West Chester, PA. The party is for CCAS members and their families and starts at 7:00 p.m. See page 6 for location and parking information.

12th • West Chester University Planetarium Show: "Stories Your Astronomy Professor Never Told You."

26th • CCAS Monthly Observing Session, Myrick Conservancy Center, BVA (inclement weather date December 27th).

January 2009

7th • PA Outdoor Lighting Council monthly meeting.

13th • CCAS monthly meeting in Room 113, Boucher Building, WCU at 7:30 p.m. Guest Speaker: Dr. Harry Augensen, "From Musician to Astronomer: the Great William Herschel Metamorphosis." Constellation of the Month (COM): TBA.

23rd • CCAS Monthly Observing Session, Myrick Conservancy Center, BVA (inclement weather date January 24th).

February 2009

4th • PA Outdoor Lighting Council monthly meeting.

10th • CCAS monthly meeting in Room 113, Boucher Building, WCU at 7:30 p.m. Speaker: Don Knabb, "Galaxies Like Grains of Sand: An attempt to understand the scale of the universe using every day items." Constellation of the Month (COM): TBA.

28th • CCAS Monthly Observing Session, Night Out at Nottingham Park.

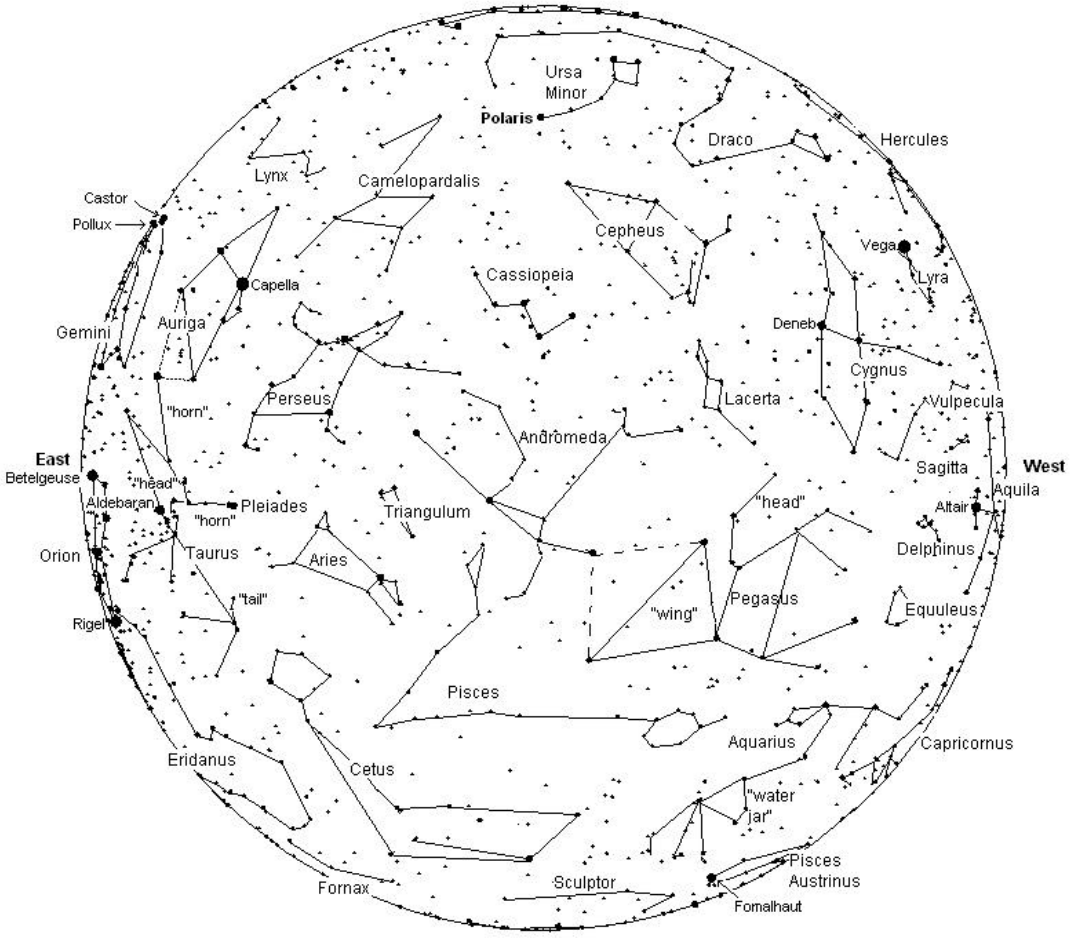
Minutes of the November 11th, 2008 meeting of the CCAS

- Approximately 23 members were in attendance.
- Video presentation: *Extra Solar Planets Galore* DVD was shown.
- Program – David Hockenberry presented "How NOT to build a backyard observatory". Following the routine portion of the meeting Kathy Buczynski presented a slide show of her recent to JPL in California.
- Constellation of the month – Robert Fellwock presented Pisces. Robert also mentioned an observing site at the French Creek State Park gun range. He forwarded information on this site to Kathy who sent it to all members.
- Website – John has added links to some educational video clips on the website. He will add more every month.
- Finance – no issues to report.
- Observing – Our next regularly scheduled observing session at BVA is the Friday after Thanksgiving. There is a star party planned for December 4th at Simpson Meadows.
- Library – no report.
- Secretary – The minutes from this month's meeting will be published in the newsletter.
- Education – Kathy is putting plans in place to start the "Introduction to Astronomy" classes in February.
- Public Relations – no report.
- Newsletter – The newsletter continues to evolve with John Hepler as editor.
- Programs – We need volunteers for the COM presentations in 2009. Most of the meetings have a program planned.
- December meeting – the annual holiday gathering will be at Landmark Americana in West Chester at 7:00 pm in the downstairs room.

The Sky Over Chester County

December 15, 2008 at 9:00 p.m. EDT

Note: the constellation stick figures used on the chart above were adapted from the book *The Stars: A New Way to See Them*, by H. A. Rey. This excellent guide to learning the constellations can be purchased at many area book stores, or from online booksellers.



This chart was produced using *Guide 8.0* skymapping software by Project Pluto, Bowdoinham, Maine

The faintest stars shown on this chart are fifth magnitude.

Date	Sunrise	Sunset	Moon Phases		
12/01/2008	7:04 a.m. EST	4:36 p.m. EST	First Quarter	12/05/2008	9:26 p.m. EST
12/15/2008	7:16 a.m. EST	4:36 p.m. EST	Full Moon	12/12/2008	4:38 p.m. EST
12/31/2008	7:22 a.m. EST	4:45 p.m. EST	Last Quarter	12/19/2008	10:30 a.m. EST
			New Moon	12/27/2008	12:23 p.m. EST

December Observing Highlights

by Don Knabb, CCAS Observing Chair

December 1	Venus, Jupiter and the Moon are very close in the southwest just after sunset.
December 5	First quarter Moon 4:26 p.m.
December 11	The nearly full Moon occults the Pleiades.
December 12	Full Moon 11:37 a.m.
December 14	The Geminid meteor shower peaks during predawn hours.
December 19	Last quarter Moon 5:29 a.m.
December 21	Winter solstice is at 7:04 a.m.
December 27	New Moon 7:22 a.m.
December 28/29	Jupiter Mercury and the Moon are in a group in the southwest just after sunset.

The Planets: The planetary highlight of December is on the 1st when Venus, Jupiter and the Moon are in a rare tight grouping in the southwest at dusk. Don't miss this beautiful show!

Mercury: During the last few days of the month Mercury joins Jupiter low in the southwest about 40 minutes after sunset. Venus will be 30° higher in the sky. You will need a site with a low horizon to see Jupiter and Mercury, but it is worth the extra effort to see this grouping of planets. On December 28th a very thin crescent Moon will be below Mercury and Jupiter and on December 29th a thin crescent Moon will be between Jupiter and Venus.

Venus: Venus shines brightly all month in the southwest and is in the sky for 3 hours after sunset. Take a look with a telescope!

Mars: Mars is behind the Sun during December and therefore is not visible.

Jupiter: Take a good look at the largest planet during December since it will soon head behind the Sun and be lost in our star's glow until it reemerges in the dawn sky in February.

Saturn: To view Saturn you will need to stay up quite late since it is not rising until around midnight during December. Look for Saturn in the constellation Leo the Lion. Saturn is less bright then we normally see it because the rings are nearly edge-on to our point of view.

Uranus and Neptune: Both gas giants can be seen just as the sky becomes dark. Use the finder charts at SkyandTelescope.com/UranusNeptune to aid your quest to see these gas giants.

Pluto: Like Mercury, Pluto is behind the Sun during December and therefore is not visible.

The Moon: Full moon is on December 12th at 11:37 a.m. This is the Full Cold Moon; or the Full Long Nights Moon. It is also sometimes called the Moon before Yule. The term Long Night Moon is appropriate because the midwinter night is indeed long, and because the Moon is above the horizon for a long time. The midwinter full Moon has a high trajectory across the sky because it is opposite a low Sun.

If you get up at 3:00 am on December 11th you can see the Moon occult the Pleiades.

Constellations: Oddly enough we can still see the Summer Triangle dipping into the west just after it gets dark. But look to the east and you will see the constellations that make it worth dressing warmly and spending some time outside during the cold December nights. Bright Capella in Auriga is high in the east over the "V" of Taurus the Bull. Just behind Taurus is Orion the Hunter, the most easily recognized constellation of the winter months.

Messier/deep sky: With Cassiopeia high in the sky this is a great time of year to see the open cluster NGC 457, also called the Owl Cluster or the ET Cluster. It really does look like the ET with bright eyes and his arms outstretched.

The Andromeda Galaxy is at ideal viewing position early in the evening so aim your binoculars or telescope at our nearest galaxy neighbor. Keep in mind that the fuzzy spot you are seeing is 2.5 million light years away and contains a trillion stars!

Comets: There are no bright comets in the sky during December but with the chart in the December issue of Astronomy magazine you should be able to find 8th magnitude comet 85P/Boethin using a telescope.

Meteor showers: The Geminid meteor shower peaks on the night of December 13/14. This a very reliable shower, however this year the bright Moon will spoil the show to some extent. But don't let that pesky bright orb stop you! Bundle up, grab a blanket and lay back on a recliner and look for the bright meteors that can pierce the glow of the Moon.

Through the Eyepiece: Kemble's Cascade

by Don Knabb, CCAS Observing Chair

In the September newsletter I wrote about the Coat Hanger Cluster, an asterism in the summer sky. Now that winter is nearly here this article is about an interesting asterism in the winter sky, Kemble's Cascade.

Kemble's Cascade is located in the constellation Camelopardalis: The Giraffe. This constellation is in the far northern sky and has no noteworthy stars. It was created in 1624 by astronomer Jakob Bartsch, who created it to fill a vast region of faint stars surrounded by brighter and more famous constellations such as Cassiopeia, Cepheus, Perseus, Auriga and Ursa Major. Its brightest star is only magnitude 4.2 which is just visible under good conditions in Chester County skies.

Kemble's Cascade is an asterism - a pattern created by unrelated stars. It is an apparent straight line of more than 20 colorful 5th to 10th magnitude stars over a distance of approximately five moon diameters, and the open cluster NGC 1502 can be found at one end.

The photograph of Kemble's Cascade in the upper right of the page was made with a small telescope in New Mexico. The bright object near the bottom left is the relatively compact open cluster of stars known as NGC 1502.

Kemble's Cascade was named by Walter Scott Houston in honor of Father Lucian J. Kemble (1922 - 1999) who wrote a letter to Walter about the asterism, describing it as "a beautiful cascade of faint stars tumbling from the northwest down to the open cluster NGC 1502" that he had discovered while sweeping the sky with a pair of 7x35 binoculars. Lucian J. Kemble was a Franciscan and amateur astronomer from Saskatchewan who contributed greatly to the art of astronomical observation. Father Luc, as he was affectionately known, died of a heart attack in the early hours of February 1999. Kemble's Cascade will be a constant memorial to the man and his work.

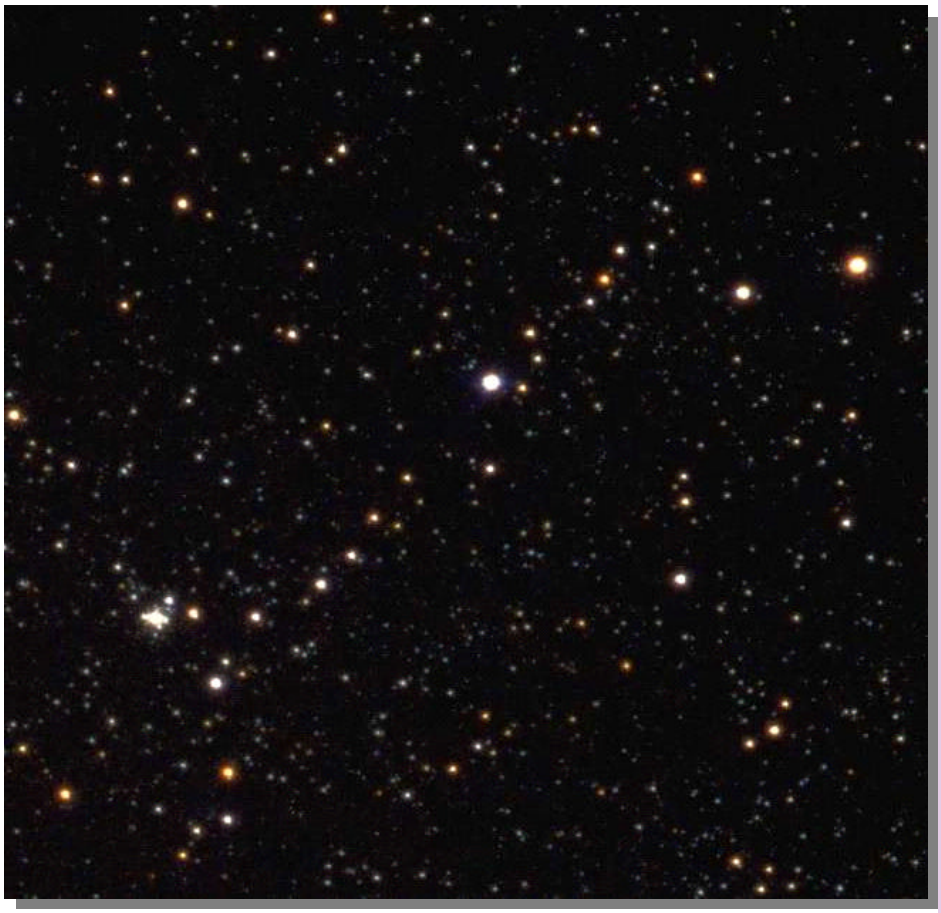


Image credit: Walter MacDonald, http://antwrp.gsfc.nasa.gov/apod/ap000814.html

Walter Houston was so impressed that he wrote an article on the asterism that appeared in his "Deep Sky Wonders" column in "Sky & Telescope" in 1980, in which he named it "Kemble's Cascade".

Kemble's Cascade is one of the finest binocular objects in the winter sky. Use the most powerful binoculars you can get your hands on to see some of the faint stars in this asterism. As you can see in the sky chart below, it lies in the southwestern corner of Camelopardalis.

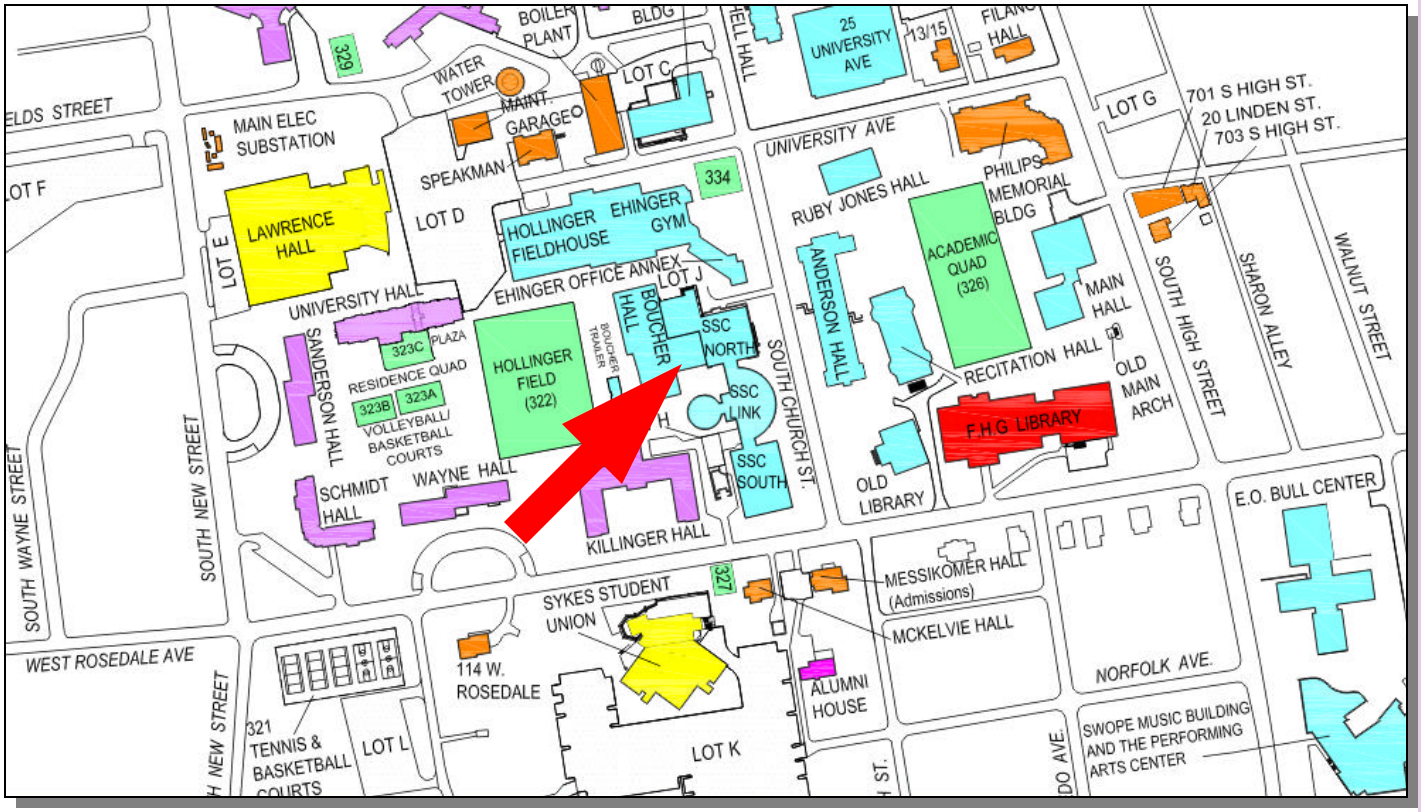
Another way to find Kemble's Cascade is to draw an imaginary line from Beta Cassiopeia through Epsilon Cassiopeia, and extend the line the same distance beyond Epsilon Cassiopeia.

(Continued on page 7)

CCAS Directions

West Chester University Campus

The monthly meetings (September through May) are held in Room 113 in Boucher Hall, 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).



CCAS 2008 Holiday Party

The Executive Committee invites you to join us for some good food, holiday cheer, astronomical stories and camaraderie at the CCAS Annual Holiday Gathering on December 9th at 7:00 PM at Landmark Americana. Visit www.landmarkamericana.com for directions.

Landmark Americana is located at 158 W. Gay St. in West Chester. We will be in the lower level; handicap access (elevator) is from the main floor. Parking is on the street, and also in a lot one block away, across New Street from St. Agnes Church. There is also free parking (2nd level) at the community garage across from the new Justice Center on Market and Darlington Streets.

Appetizers and munchies will be picked up by the Society. Dinner or beverages will be each individual's responsibility.

CCAS Membership Information and Society Financials

Treasurer's Report

by Bob Popovich

Oct. 2008 Financial Summary

Beginning Balance	$1,671
Deposits	$182
Disbursements	$0
Ending Balance	$1,853

Membership Renewals Due

12/2008	No membership renewals this month.
01/2009	No membership renewals this month.

Membership Renewals

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

Bob Popovich
416 Fairfax Drive
Exton, PA 19341-1814

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.

CCAS Members Earn AL Binocular Messier Awards

Society members Don Knabb and Bob Popovich both earned the **Astronomical League's Binocular Messier** award this past August.

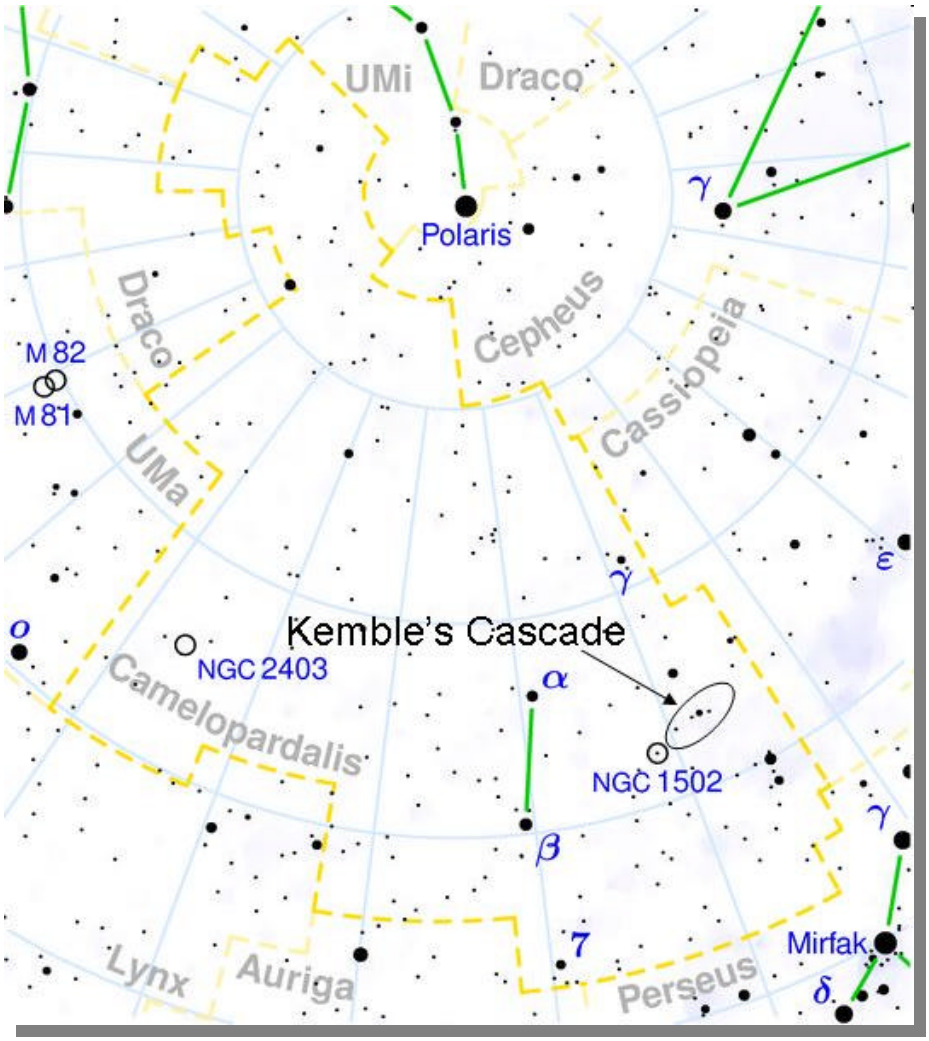
CCAS President Kathy Buczynski presented both members with their awards during the November meeting. Bob is the 815th Astronomical League member to earn the award; Don is the 818th.

To qualify for the **Binocular Messier** award, you must observe 50 or more **Messier objects** using only binoculars. Any 50 of the 110 recognized Messier objects may be observed. Any pair of binoculars may be used, but those with objectives between 20MM and 80MM in diameter are recommended.

Bob and Don's certificates are the 19th and 20th awards given to a CCAS member by the League over the past ten years.

CCAS members Don Knabb (l.) and Bob Popovich holding their AL Binocular Messier award certificates.

Kemble's Cascade



(Continued from page 5)

There you will find Kemble's Cascade, a string of 15 to 25 stars, depending the power of the binoculars you use. The stars seem to cascade from the northeast down to the southwest.

The stars of Kemble's Cascade do not form a group or cluster physically, it's only a chance alignment of stars, but it is unique in its appearance. At the southeastern end of the chain of stars you will find the 6th magnitude open cluster NGC 1502, containing 15 stars in a 7' area.

I have observed Kemble's Cascade from our backyard near West Chester, but I needed our 20x80 Vixen binoculars to see this asterism. Many of the stars are too faint to see with smaller binoculars in our light polluted skies but I am sure they would be visible with any size binoculars at a dark sky site.

Information credits:

Dickinson, Terence 2006. Nightwatch: a practical guide to viewing the universe. Buffalo, NY. Firefly Books
Knoph, Alfred 1995. Constellations of the Northern Sky. New York, NY. Chanticleer Press
http://en.wikipedia.org/wiki/Kemble%27s_Cascade
http://www.theyorkshirelad.ca/
http://antwrp.gsfc.nasa.gov/apod/ap000814.html
http://www.backyard-astro.com/deepsky/bino/01_b.html
http://www.dibonsmith.com/ngc1502.htm

CCAS Astronomy Day Photo Makes the AL's Reflector

By Kathy Buczynksi, CCAS President & Education Chair

Make sure to take a look at the December 2008 edition of the ***Reflector*** magazine, the quarterly publication from the **Astronomical League**, which you probably have received by now. On page 10 there is a nice article about **Astronomy Day 2008** and an even nicer picture taken by our own Don Knabb at Our Astronomy Day event at Hoopes Park.

The picture is of Don and Barb's nephew, David, at the 20-inch scope. There is a write-up about the picture under it. David and his family are also members.

Congratulations, Don, on having your photo published in the ***Reflector***. And thanks for the write-up that appeared below it which included your quote; "This is what public star parties are all about, sharing the joy of discovery with everyone, especially the youth of our community."

This is what we are all about.

Thanks, Don!

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If you are a new member and haven't yet received a Reflector, it may be that you have not been added to the Astronomical League mailing list just yet. If you would like a copy, please contact Kathy Buczynski. She may be able to get a copy for you.

Nicholas's Cartoon Corner

by Nicholas La Para

PANDORA OPENS HER BOX

Dave Linskens, seven years old, peers through a 20-inch truss Dobsonian during a public star party held by CCAS. The image was captured by Don Knabb using a simple Fujifilm digital camera set on automatic.

What Happened to Comet Holmes?

By Dr. Tony Phillips

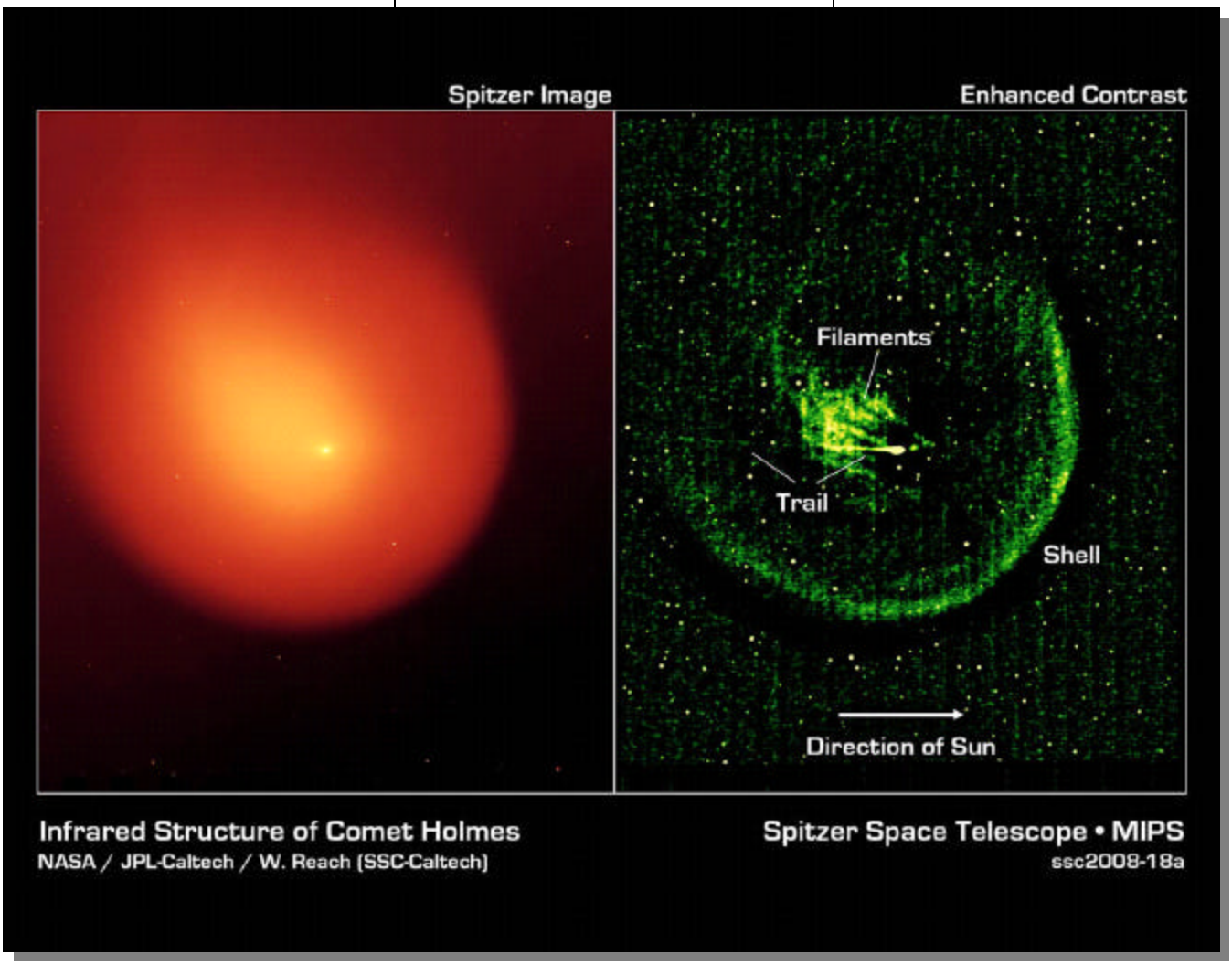
One year after Comet 17P/Holmes shocked onlookers by exploding in the night sky, researchers are beginning to understand what happened.

"We believe that a cavern full of ice, located as much as 100 meters beneath the crust of the comet's nucleus, underwent a change of phase," says Bill Reach of NASA's Spitzer Science Center at the California Institute of Technology. "Amorphous ice turned into crystalline ice" and, in the transition, released enough heat to cause Holmes to blow its top.

Anyone watching the sky in October 2007 will remember how the comet brightened a million-fold to naked-eye visibility. It looked more like a planet than a comet—strangely spherical and utterly lacking a tail. By November 2007, the expanding dust cloud was larger than Jupiter itself, and people were noticing it from brightly-lit cities.

Knowing that infrared telescopes are particularly sensitive to the warm glow of comet dust, Reach and colleague Jeremie Vaubaillon, also of Caltech, applied for observing time on the Spitzer Space Telescope—and they got it. "We used Spitzer to observe Comet Holmes in November and

(Continued on page 10)



Comet Holmes as imaged by the multiband imaging photometer (MIPS) on the Spitzer Space Telescope. The enhanced contrast image at the right shows the comet's outer shell and mysterious filaments of dust.

What Happened to Comet Holmes?

(Continued from page 9)

again in February and March 2008," says Reach.

The infrared glow of the expanding dust cloud told the investigators how much mass was involved and how fast the material was moving. "The energy of the blast was about 10^{14} joules and the total mass was of order 10^{10} kg." In other words, Holmes exploded like 24 kilotons of TNT and ejected 10 million metric tons of dust and gas into space.

These astonishing numbers are best explained by a subterranean cavern of phase-changing ice, Reach believes. "The mass and energy are in the right ballpark," he says, and it also explains why Comet Holmes is a "repeat exploder."

Another explosion was observed in 1892. It was a lesser blast than the 2007 event, but enough to attract the attention of American astronomer Edwin Holmes, who discovered the comet when it suddenly brightened. Two explosions (1892, 2007) would require two caverns. That's no problem because comets are notoriously porous and lumpy. In fact, there are probably more than two caverns, which would mean Comet Holmes is poised to explode again.

When?

"The astronomer who can answer that question will be famous!" laughs Vaubaillon.

"No one knows what triggered the phase change," says Reach.

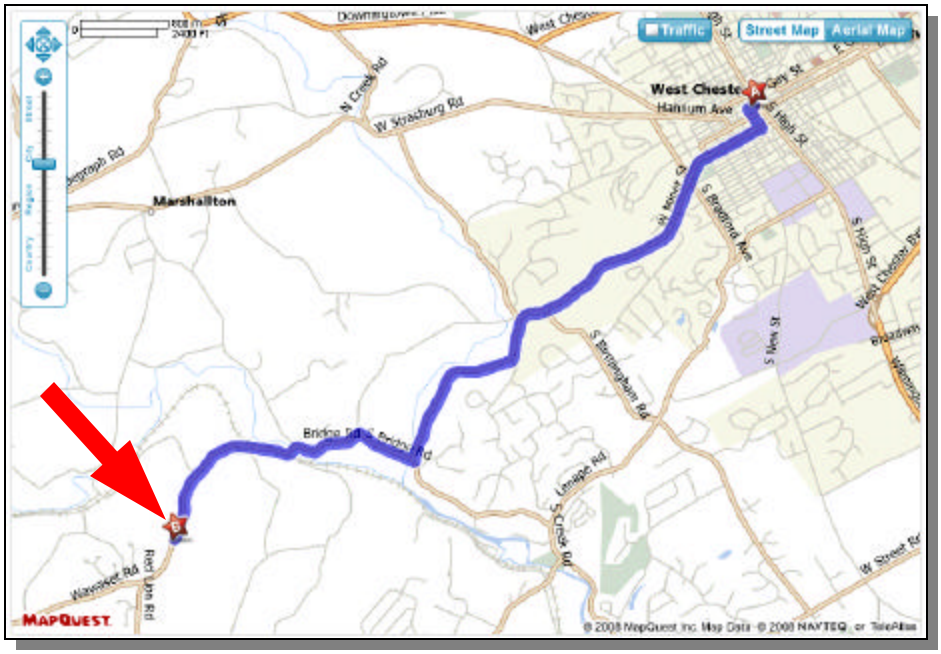
He speculates that maybe a comet-quake sent seismic waves echoing through the comet's caverns, compressing the ice and changing its form. Or a meteoroid might have penetrated the comet's crust and set events in motion that way. "It's still a mystery."

But not as much as it used to be.

See more Spitzer images of comets and other heavenly objects at www.spitzer.caltech.edu. Kids and grownups can challenge their spatial reasoning powers by solving Spitzer infrared "Slyder" puzzles at http://spaceplace.nasa.gov/en/kids/spitzer/slyder.

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

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 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 up the farm lane to the left; it's about 800 feet or so to the top of the hill.

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 Information Directory

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:

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 **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:

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:

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!

Starry Night Lights

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**

www.starrynightlights.com

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Green Earth Lighting
Formerly
Outdoor Lighting Associates

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**

www.greenearthlighting.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

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**

www.skiesunlimited.net

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Spectrum Scientifics
Quality Science Products for All Ages

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

www.spectrum-scientifics.com

CCAS Information Directory

CCAS Lending Telescopes

Contact Kathy Buczynski 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. Kathy's phone number is 610-436-0821.

CCAS Lending Library

Contact our Librarian, Linda Lurcott Fragale, 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. Linda's phone number is 610-269-1737.

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
500 W. Rosedale Ave.
Apt. A-3 Trinity Bldg.
West Chester, PA 19382

Get 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:

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 copying copyrighted material! Give your contributions to John Hepler (484-266-0699) 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 "star nights" for school, scout, and other civic groups.

CCAS Executive Committee

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

President:	Kathy Buczynski 610-436-0821
Vice Pres:	Jim Anderson 610-857-4751
ALCor and Treasurer:	Bob Popovich 610-363-8242
Secretary:	Don Knabb 610-436-5702
Librarian:	Linda Lurcott Fragale 610-269-1737
Observing:	Don Knabb 610-436-5702
Education:	Kathy Buczynski 610-436-0821
Webmaster and Newsletter:	John Hepler 484-266-0699
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

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