Observations

A Monthly Publication Of The
CHESTER COUNTY ASTRONOMICAL SOCIETY

Vol. 17, No. 1 *January 2009*

In This Issue

Membership Renewals Due

01/2009	No membership renewals this month.
02/2009	Calobrisi Dautrich La Para Reimer Ruggeri Seward
03/2009	Cini Dougherty LaFrance Molloy Morgan Spackman

CCAS Upcoming Nights Out

CCAS has several "nights out" over the winter months. Members are encouraged to help out during these events any way they can. During the month of January, so far we only have one scheduled. See below for more information.

On Friday, January 9th, 2009, CCAS will participate in the **Full Moon Party** at the **Lower Merion Conservancy** located at Rolling Hill Park, 1301 Rose Glen Road, Gladwyne. Join the fun as the conservancy celebrates the first full moon of the new year in Rolling Hill Park. **Derrick Pitts**, Franklin Institute Chief Astronomer, will interpret the nuisances of the moon using charts, maps, telescopes, and binoculars out in our moonlit fields; a roaring bonfire will drive away the winter chill; and kids will enjoy crafts inside the Conservancy's cottage. Cookies and treats will be available to warm you on the inside.

Dress warmly, bring a (red) flashlight and a telescope or binoculars, and park at the top of Rolling Hill Park. Pre-registration is appreciated. Event runs from 7:00-9:00 p.m. For more information and to register for the free event, visit the conservancy's official website at www.lmconservancy.org.

Important January 2009 Dates

3rd • Quadrantid meteor shower peaks in the early morning hours of January 4th. About 100 meteors per hour might be seen.

4th • First Quarter Moon, 6:56 AM EST.

10th • Full Moon, 10:27 PM EST.

17th • Last Quarter Moon, 9:46 PM EST.

26th • New Moon, 2:55 AM EST.

26th • Annular solar eclipse, 3 AM EST. This eclipse will not be visible from North America.

Winter 2009 Society Events

January 2009

7th • PA Outdoor Lighting Council monthly meeting.

9th • Full Moon Party at the Lower Merion Conservancy.

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

3rd • Introductory Astronomy Class: Spaceship Earth, Room 113, Boucher Building, West Chester University. Class starts at 7:00 p.m.

4th • PA Outdoor Lighting Council monthly meeting.

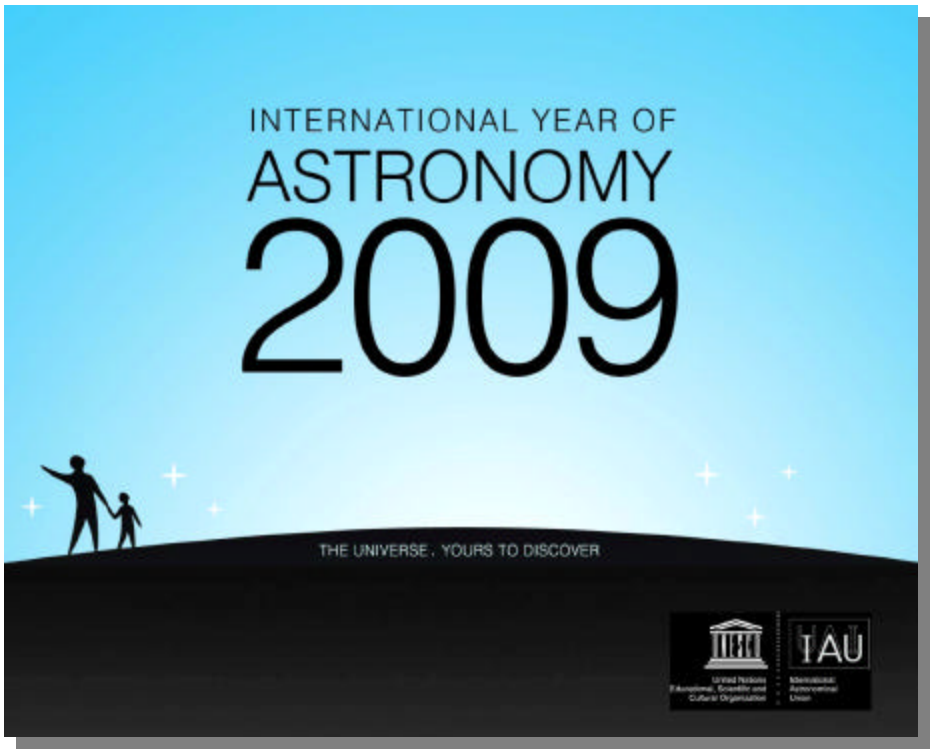
10th • CCAS monthly meeting in Room 113, Boucher Building, WCU at 7:30 p.m. Speaker: Don Knabb, "Galaxies Like Grains of Sand: An attempt to understand the scale of the universe using every day items." Constellation of the Month (COM): TBA.

13th • West Chester University Planetarium Show: "The Expanding, Accelerating Universe", Schmucker Science Building.

17th • Introductory Astronomy Class: The Moon, Room 113, Boucher Building, West Chester University. Class starts at 7:00 p.m.

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

IYA2009 Around the World



As you all should know by now, the coming year has been proclaimed the "International Year of Astronomy" by the International Astronomical Union. I plan on publishing a series of articles on the program and how it is being celebrated around the world.

These articles will appear in future editions of Observations, and I hope to have first hand information from organizations around the world. For this edition, I thought I would start with a bit of history about the program and how it came to be.

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CCAS Membership Information and Society Financials

Treasurer's Report

by Bob Popovich

Nov. 2008 Financial Summary

Beginning Balance	$1,853
Deposits	$65
Disbursements	$0
Ending Balance	$1,918

Welcome New Members!

This month we welcome two new members to the Society: Eric Bronstein from Avondale, and David Houser from Glenmoore. 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:

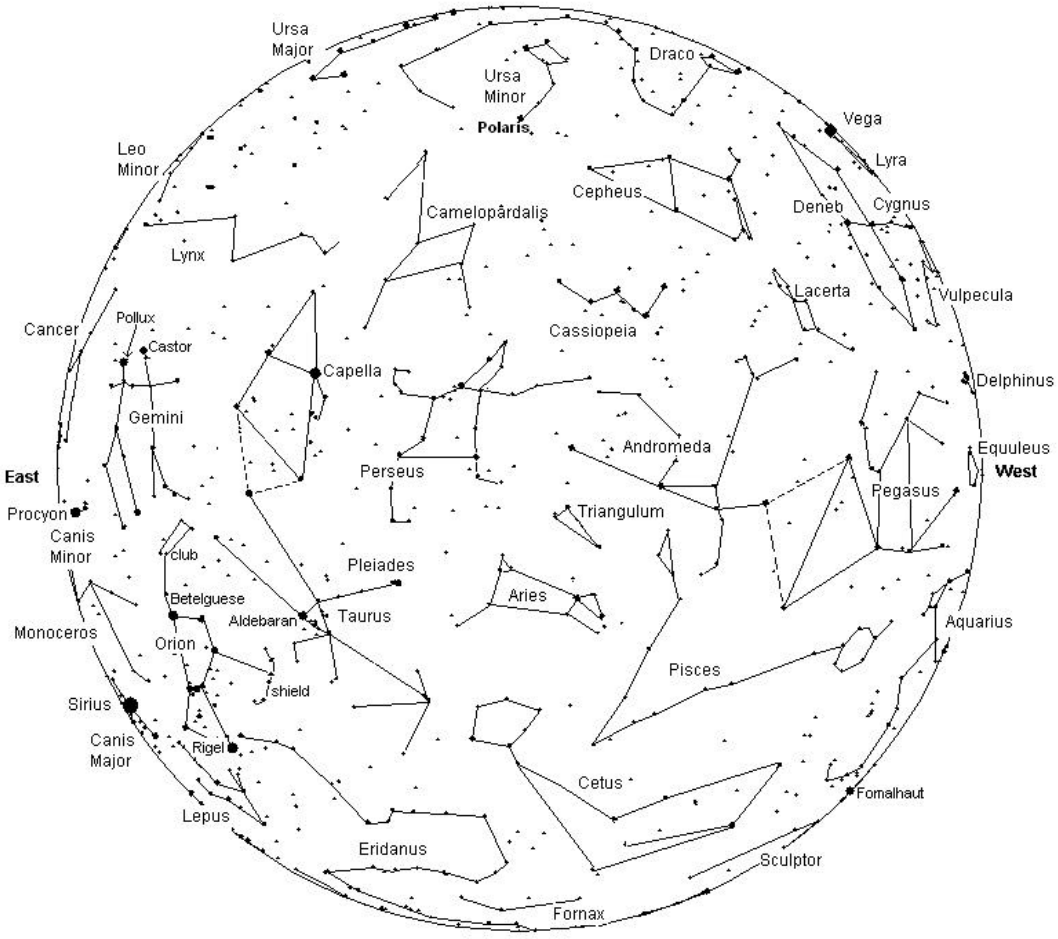
Bob Popovich
416 Fairfax Drive
Exton, PA 19341-1814

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.

The Sky Over Chester County

January 15, 2009 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		
01/01/2009	7:04 a.m. EST	4:36 p.m. EST	First Quarter	01/04/2009	6:56 a.m. EST
01/15/2009	7:16 a.m. EST	4:36 p.m. EST	Full Moon	01/10/2009	10:27 p.m. EST
01/31/2009	7:22 a.m. EST	4:45 p.m. EST	Last Quarter	01/17/2009	9:46 p.m. EST
			New Moon	01/26/2009	2:55 a.m. EST

January Observing Highlights

by Don Knabb, CCAS Observing Chair

January 1	The Moon is near Venus in the evening sky.
January 2/3	The Quadrantid meteor shower peaks.
January 4	First quarter Moon, 6:56 a.m.
January 10	Full Moon 10:27 p.m.
January 14/15	The Moon is to the right of Saturn as they rise around 10 p.m.
January 17	Last quarter Moon 9:46 p.m.
January 21-23	Venus is within 1.5° of Uranus in the evening sky
January 26	New Moon 2:55 a.m.

The Planets: The planetary highlight of the month is Venus, which shines brightly in the glow of the sunset and for almost 4 hours after the sun goes below the horizon. Saturn rises later, around 10 p.m., but is not as bright as usual due to the narrow view of the rings.

Mercury: January is a good month to see tiny Mercury. It reaches greatest elongation on January 4th and stands about 15° above the southwest horizon at sunset.

Venus: Venus reaches greatest elongation on January 14th when it will be 40° above the horizon at sunset. Our sister planet shines at magnitude -4.4 on that day! In a telescope you will see the planet half-lit, like the first quarter Moon.

Mars: Mars is coming around from behind the Sun but is lost in the glow of the sunrise during January.

Jupiter: The king of the planets is falling into the southwest glow of the sunset through January and goes behind the sun late in the month. On January 1st it is near Mercury just after sunset.

Saturn: Saturn will rise earlier as January progresses and at the end of the month it will rise around 8:30 p.m. Saturn is in the constellation Leo the Lion, who appears to be stepping on Saturn with his hind feet. 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 during January, but Neptune will be very close to the horizon by the time it becomes fully dark. This is a great time to find Uranus because from January 21 to January 23 it will be less than 1 ½ ° from Venus. Use your telescope at 100x in order to see the green disk of Uranus. For help finding the gas giants, use the charts at SkyandTelescope.com/UranusNeptune.

Pluto: Pluto is beginning to come around from behind the Sun during January but it will be even more difficult than normal to see because of the Sun's glow.

The Moon: Full moon is on January 10th at 10:27 p.m. According to Native Americans, this is the Full Wolf Moon. Amid the cold and deep snows of midwinter, the wolf packs howled hungrily outside Indian villages, so it was named the Full Wolf Moon. Sometimes it was also referred to as the Old Moon, or the Moon after Yule. Some called it the Full Snow Moon, but most tribes applied that name to the next Moon.

Constellations: Auriga, Taurus, Orion and Gemini are the highlights of the January skies. But the nights are so long that you can see many "summer" constellations setting early in the evening and many "spring" constellations rising if you stay up late. Dress warmly and sit in your lounge chair and see how many constellations you can record toward the Constellation Hunter club.

Messier/deep sky: During the winter months we are looking away from the center of the Milky Way, so the sky is not as full of deep sky wonders as during the summer. But, the sky is clear and there are still many beautiful objects for us to enjoy. Don't miss the trio of clusters in Auriga, and not far away is another nice cluster, M35, at the feet of the twins of Gemini. And below and behind Orion is Canis Major with the cluster M41, the Little Beehive, not far from the brightest star in the night sky, Sirius.

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

Meteor showers: The Quadrantid meteor shower peaks in the early morning hours of January 3rd. This is the briefest meteor shower of the year, so if you want to see these shooting stars you need to go out after midnight and watch the skies. With the first quarter Moon set by midnight, this could be an excellent meteor shower.

Through the Eyepiece:
M42, the Orion Nebula
by Don Knabb,
CCAS Observing Chair

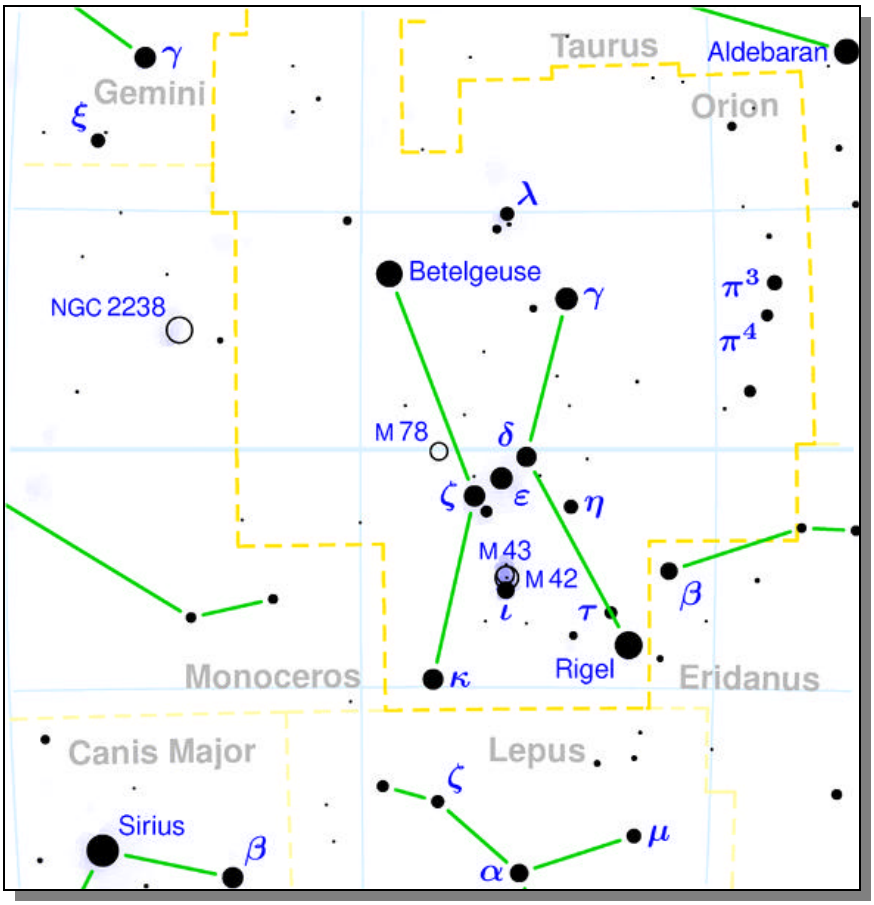
If you recently received any new toys for observing the night sky you will want to get out under the cold and clear January sky to give them a try. One of the first objects to gaze at should be the Orion Nebula, also known as Messier 42, M42, or NGC 1976.

The Orion Nebula is situated south of Orion's Belt. It is located approximately 1,270 light years away and is estimated to be 24 light years across. Older texts frequently referred to the Orion Nebula as the Great Nebula in Orion or the Great Orion Nebula. Yet older astrological texts refer to it as Ensis, Latin for "sword".

The Orion Nebula is one of the most interesting objects in the sky. To the naked eye, it looks like a star in the sword of the constellation Orion, but with binoculars or a telescope, you can see that it is actually a large glowing cloud of material. This is believed to be a huge star formation region. The bright part of the nebula is the glow of many luminous, newborn stars shining on the surrounding gas cloud that they collapsed from.

To the right is an image of the Orion Nebula taken by CCAS member Pete LaFrance.

The stars that are being born in the Orion Nebula are part of an open cluster. When all of the stars are done being born, what will remain is a clump of a few



http://en.wikipedia.org/wiki/File:Orion_constellation_map.png

Photo courtesy of Chester County Astronomical Society member Pete LaFrance.

hundred to a thousand stars which are all roughly the same age. These stellar siblings are dominated by a few very massive, very bright stars called the Trapezium. The Trapezium is made up of just a few stars, but it outshines all the rest of them combined. Astronomers believe that the majority of the glow from the gas in the nebula comes

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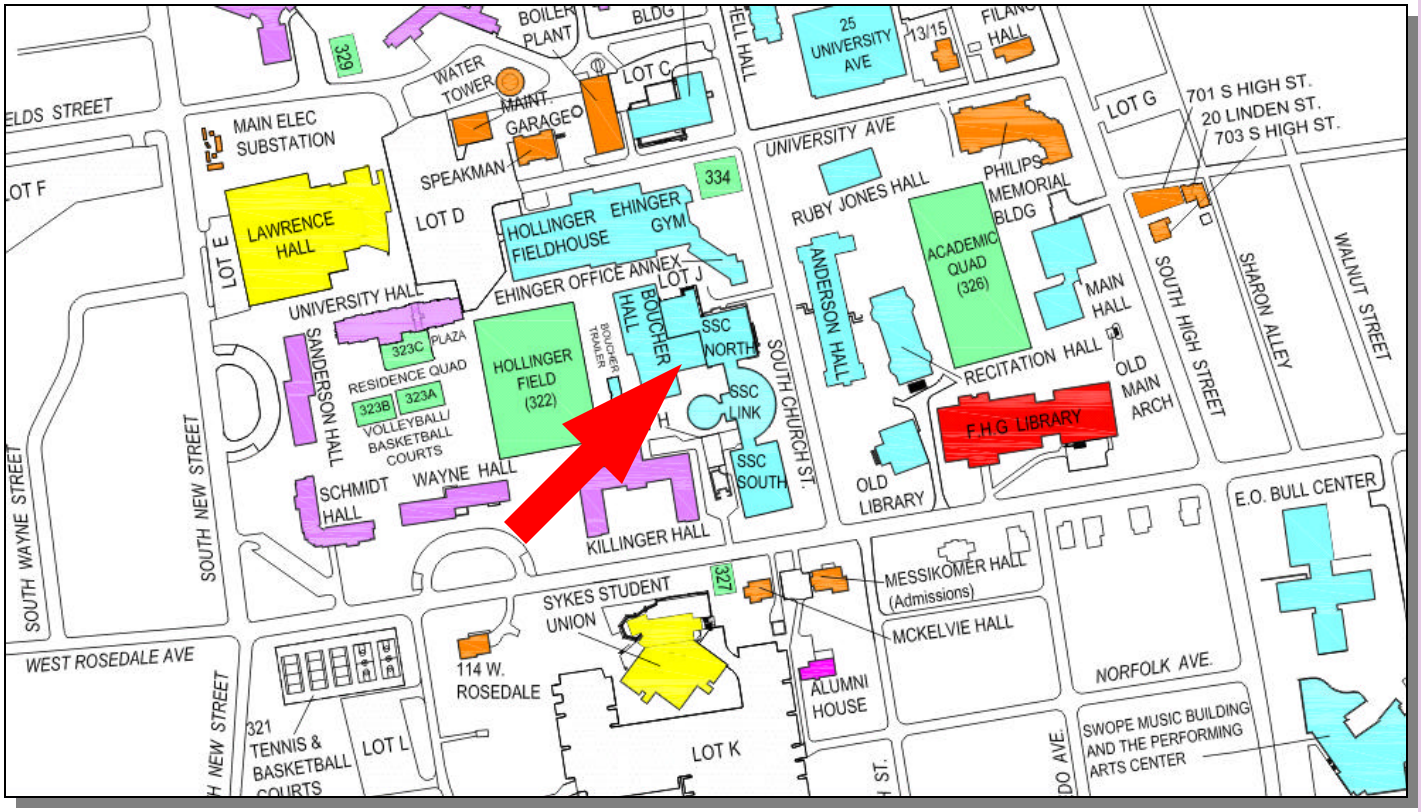
CCAS Directions

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).



M42, the Orion Nebula

(Continued from page 5)

from light from the stars of the Trapezium. Maybe in a few hundred million years, there will be planets like the Earth forming around some of the new stars in the cluster.

On page 10 are pictures from NASA of the Trapezium in optical (left) and infrared light (right) from the Hubble Space Telescope.

With naked eyes under dark skies I can just see the glow of the Orion Nebula, but with bin-

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IYA2009 Around the World

(Continued from page 2)

In July 2003, at the IAU General Assembly in Sydney, Australia, the IAU voted in favor of a resolution asking the United Nations to declare the year 2009 as the "International Year of Astronomy", identified with the unwieldy moniker of "IYA2009." In October 2005 UNESCO endorsed the IYA2009, and on December 20th, 2007, the United Nations proclaimed 2009 as the "International Year of Astronomy."

The goal of the IAU in declaring IYA2009 is to help the citizens of the world rediscover their place in the Universe through viewing both day and night skies, and to experience a personal sense of wonder and discovery. All humans should realize the impact of astronomy and basic sciences on our daily lives, and understand better how scientific knowledge can contribute to a more equitable and peaceful society.

The IYA2009 is a global celebration of astronomy and its contributions to society and culture, highlighted by the 400th anniversary of the first use of an as-

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IYA2009 Around the World

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tronomical telescope by Galileo Galilei. The IAU hopes to stimulate worldwide interest, especially among young people, in astronomy and science under the central theme "The Universe, Yours to Discover". IYA2009 events and activities will promote a greater appreciation of the inspirational aspects of astronomy that embody an invaluable shared resource for all nations.

The official website, www.astronomy2009.org outlines some of the events planned at the global level; there are also thousands of national and regional activities offered by participating organizations.

The global events are organized in two different categories: Cornerstone Projects, and Special Projects. The Cornerstone Projects are: *100 Hours of Astronomy; The Galileoscope; Cosmic Diary; The Portal to the Universe; She is an Astronomer; Dark Skies Awareness; Astro & World Heritage; Galileo Teacher Training Programme; Universe Awareness; From Earth to the Universe;* and, *Developing Astronomy Globally*.

Special Projects include: *The World at Night; 400 Years of the Telescope; Galilean Satellites; Around the World, Around the Sky; Exoplanet Hunters; 1919 Eclipse;* and, *The Sky—Yours to Discover.*

Look for more information about activities in other countries in future editions of the newsletter.

The Little-Known Quadrantids

The Quadrantid meteor shower, due in the early morning hours of January 4th, is one of the year's best, producing over 100 meteors per hour; yet the shower is seldom observed. There are several reasons for the shower's relative unfamiliarity.

One reason is our weather. The Quadrantids peak when northern skies are cold and cloudy. The shower's radiant is located high in the northern sky, so observers in the southern hemisphere, where the weather might be more favorable, see almost nothing.

Another reason is that the shower doesn't last long, a few hours at best. Even dedicated meteor watchers are likely to miss such a short peak. Prof. A.C.B. Lovell, in Meteor Astronomy, lamented that *"useful counts of the Quadrantid rate were made in [only] 24 Januaries out of a possible 68 between 1860 and 1927. ... The maximum rate during this period appears to have occurred in 1932 (80 per hour) although the results are influenced by unfavorable weather."*

The source of the Quadrantid meteor shower was unknown until late 2003 when Peter Jenniskens of the NASA Ames Research Center found evidence that Quadrantid meteoroids come from 2003 EH1, an "asteroid" that is probably a piece of a comet that broke apart some 500 years ago. Our planet crosses the orbit of 2003 EH1 at a perpen-

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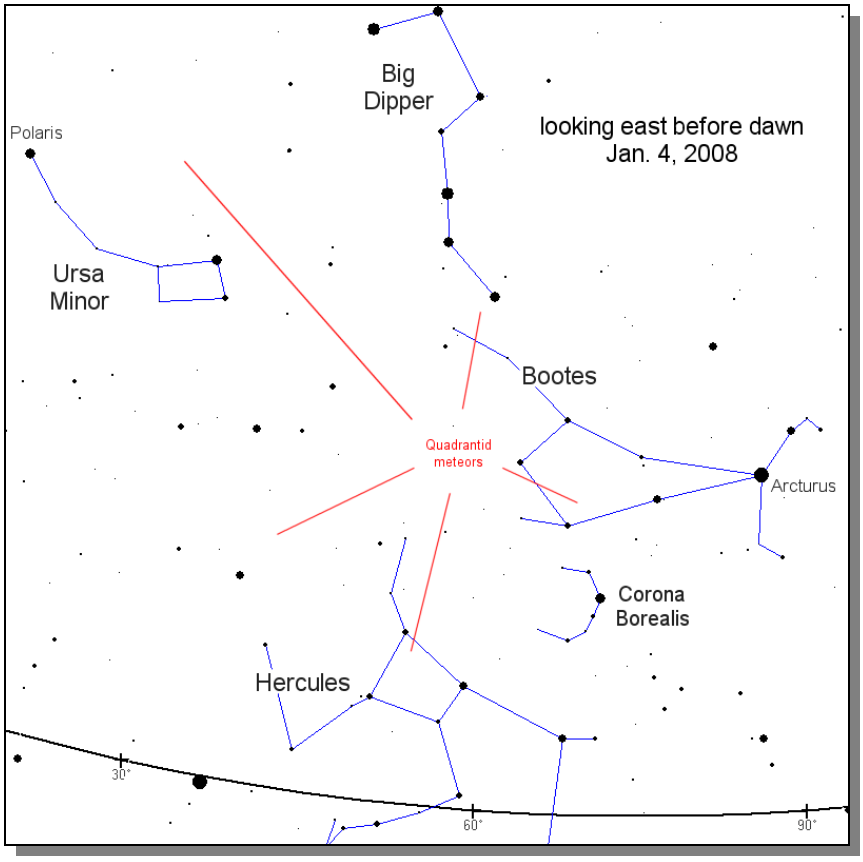


Information for this article courtesy of Spaceweather.com

The Quadrantid Radiant. Illustration courtesy of Spaceweather.com

The Making of a Star

By Linda Lurcott Fragale and Nancy Lurcott Armstrong

New Year's Eve is often associated with a new start and time for new resolutions. It can also be a time for reflection, especially for the previous year.

The year 2008 held many wonderful events for CCAS and it members. One such occurrence was near the summer solstice. The event was held on June 22, 2008, to honor the 80th birthday of our founder, Edwin T. Lurcott.

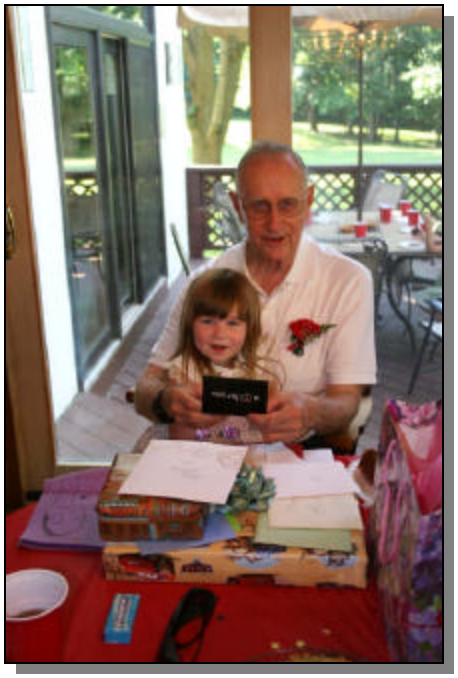
Ed's family and friends from near and far gathered to celebrate on a bright Sunday afternoon, with great food and drinks. A large screen television displayed photos of Ed's life, from his childhood days in Elisabeth, New Jersey, his army days in Japan, to his wedding in Indiana.

The video photo album included many photos of his family, which now includes great-grandchildren, and photos with a homemade telescope or two. A tabletop display featured several newspaper articles and other items reporting on Ed's favorite hobby, astronomy.

It is clear that Ed's early interest in astronomy led to a lifelong passion; we as members can be grateful for his passion and dedication to the science.

There were many shared moments of laughter, along with hugs and hand shakes which expressed our individual birthday greetings.

Rumor has it the celebration was Ed's best birthday party, ever. We are truly fortunate to have such a wonderful founding father, who I am proud to call "Dad".



CCAS Founder Ed Lurcott and granddaughter Emma Mae open his presents.

This honorary poem was read for Ed by his son Steve at the party.

The Making of a Star
by Steve, Brit, &
Miah Lurcott

The making of a star starts
within yourself.

Dad is but one man,
Yet like the oceans,
He has hidden depths
Holding pearls of wisdom
with mysterious quiet depths
(and we all know that quiet
strength!).

From son and a child
To a mild mannered man.
Father and Grandfather,
Husband to a Mother,
And brother to another.

In his latest role (sporting a
grandpa sweater),
He is:
A lighthouse in a storm.
The North Star,
A reliable navigation aid.
Never forcing or judging;
Providing guidance when
asked.

If ever you are lost,
You can look to our North
Star.
Look to the twinkle of his
eyes,
The warmth of his soul,
And find your way home
again.
Indeed, the making of a star.

CCAS 2008 Holiday Party

The CCAS Annual Holiday Gathering was held on December 9th at the Landmark Americana Bar & Restaurant in downtown West Chester. CCAS members and their family gathered to celebrate the holiday season and share some good food, holiday cheer, astronomical stories and camaraderie.

Members in attendance included CCAS President Kathy Buczynski, CCAS Observing Chair Don Knabb, CCAS Treasurer Bob Popovich and his wife Betsy, CCAS Librarian Linda Lurcott Fragale, CCAS Webmaster & Newsletter Editor John Hepler, Dave Hockenberry, Ann Miller, Gary Calobrisi, Bea Mazziotta, Gary Zibinski, Bill O'Hara, Roger Taylor, Steve Leiden, and CCAS Founder Ed Lurcott.

Top: Nicholas La Para shares a laugh with Bea Mazziotta and Gary Calobrisi.

Right: Kathy Buczynski and Don Knabb enjoy some holiday cheer.

CCAS Treasurer Bob Popovich, CCAS Librarian Linda Fragale and Betsy Popovich.

Apparently Dave isn't sure whose drink he has…..

M42, the Orion Nebula

(Continued from page 6)

oculars the nebulosity really comes through. With a telescope you can zoom in to see the Trapezium, which looks more like the image in the right photo above since the eye cannot detect the colors seen in the left photo. They are a beautiful collection of jewels in the eyepiece.

Information credits:

Pasachoff, Jay M. (2000). A Field Guide to the Stars and Planets. New York, Houghton Mifflin.

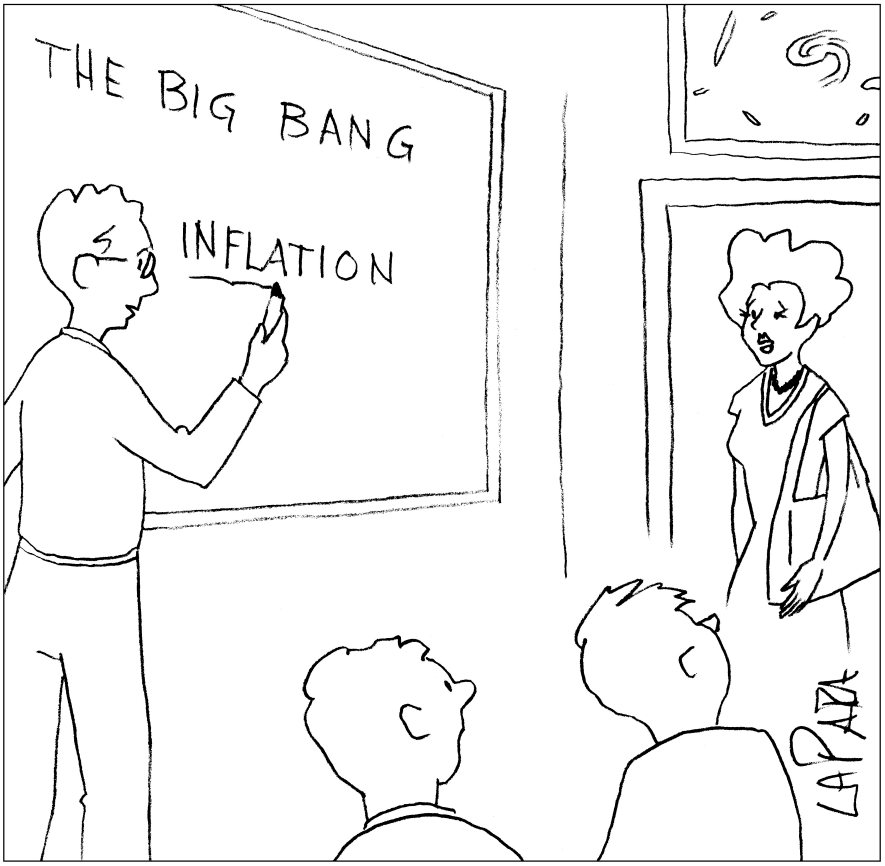
http://www.astro.wisc.edu/~dolan/constellations/messier/m42.html

http://en.wikipedia.org/wiki/Orion_Nebula

Dickinson, Terence (2006). Nightwatch: a practical guide to viewing the universe. Buffalo, NY. Firefly Books

Nicholas's Cartoon Corner

by Nicholas La Para



"ISN'T THIS COSMETOLOGY 101?"

Trapezium in optical (left) and infrared (right) light. Photos courtesy of NASA.

Superstar Hide and Seek

By Dr. Tony Phillips

It sounds like an impossible task: Take a star a hundred times larger in diameter and millions of times more luminous than the Sun and hide it in our own galaxy where the most powerful optical telescopes on Earth cannot find it.

But it is not impossible. In fact, there could be dozens to hundreds of such stars hiding in the Milky Way right now. Furiously burning their inner stores of hydrogen, these hidden superstars are like ticking bombs poised to 'go supernova' at any moment, possibly unleashing powerful gamma-ray bursts. No wonder astronomers are hunting for them.

Earlier this year, they found one.

"It's called the Peony nebula star," says Lidia Oskinova of Potsdam University in Germany. "It shines like 3.2 million suns and weighs in at about 90 solar masses."

The star lies behind a dense veil of dust near the center of the Milky Way galaxy. Starlight traveling through the dust is attenuated so much that the Peony star, at first glance, looks rather dim and ordinary. Oskinova's team set the record straight using NASA's Spitzer Space Telescope. Clouds of dust can hide a star from visible-light telescopes, but Spitzer is an infrared telescope able to penetrate the dusty gloom.

"Using data from Spitzer, along with infrared observations from the ESO's New Technology Telescope in Chile, we calculated the Peony star's true luminosity," she explains. "In the Milky Way galaxy, it is second only to another known superstar, Eta Carina, which shines like 4.7 million suns."

Oskinova believes this is just the tip of the iceberg. Theoretical models of star formation suggest that one Peony-type star is born in our galaxy every 10,000 years. Given that the lifetime of such a star is about one million years, there should be 100 of them in the Milky Way at any given moment.

Could that be a hundred deadly

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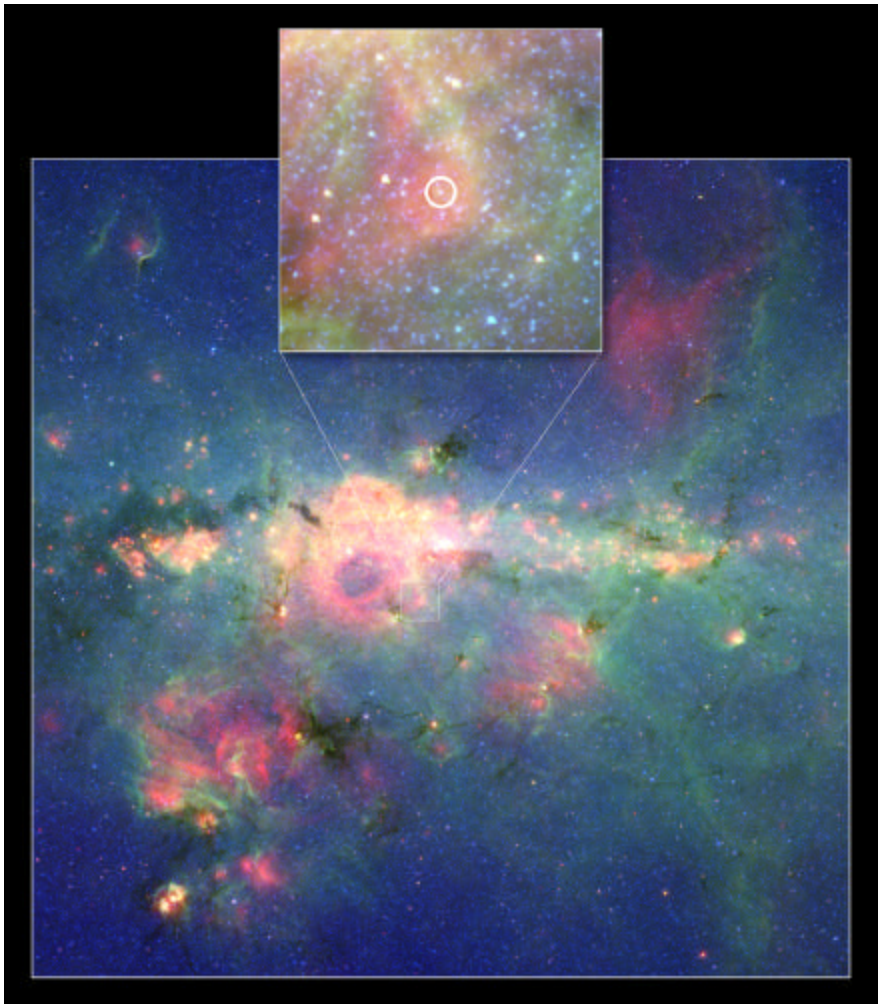

The "Peony Nebula" star is the second-brightest found in the Milky Way Galaxy, after Eta Carina. The Peony star blazes with the light of 3.2 million suns.

Superstar Hide and Seek

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gamma-ray bursts waiting to happen? Oskinova is not worried.

"There's no threat to Earth," she believes. "Gamma-ray bursts produce tightly focused jets of radiation and we would be extremely unlucky to be in the way of one. Furthermore, there don't appear to be any supermassive stars within a thousand light years of our planet."

Nevertheless, the hunt continues. Mapping and studying supermassive stars will help researchers understand the inner workings of extreme star formation and, moreover, identify stars on the brink of supernova. One day, astronomers monitoring a Peony-type star could witness with their own eyes one of the biggest explosions since the Big Bang itself.

Now *that* might be hard to hide.

Find out the latest news on discoveries using the Spitzer at www.spitzer.caltech.edu. Kids (of all ages) can read about "Lucy's Planet Hunt" using the Spitzer Space Telescope at spaceplace.nasa.gov/en/kids/spitzer/lucy.

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

Quadrantids

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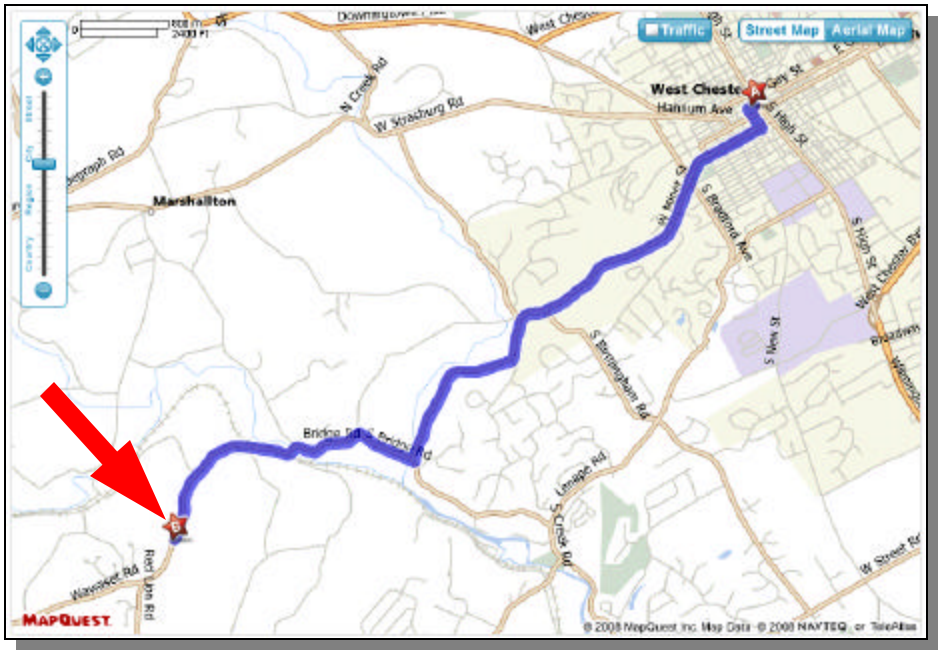
dicular angle, which means we quickly move through any debris. That's why the shower is so brief.

Quadrantid meteors take their name from an obsolete constellation, Quadrans Muralis, found in early 19th-century star atlases between Draco, Hercules, and Boötes. It was removed from crowded sky maps in 1922 when the IAU adopted the modern list of 88 officially-recognized constellations. The Quadrantids, which were reassigned to Boötes after Quadrans Muralis disappeared, kept their name; possibly because another January shower was already widely-known to meteor watchers as the "Bootids."

CCAS Directions



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).

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.

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

★ ★ ★ ★ ★

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

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 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

Check the Treasurer's Report in 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:

Bob Popovich
416 Fairfax Drive
Exton, PA 19341-1814

Phone: 610-363-8242
e-mail: B2N2@verizon.net

*Sky & Tele*scope 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 Bob Popovich.

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 Bob first at **610-363-8242.**

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 Bob Popovich.**