



# Observations

A Monthly Publication Of The  
**CHESTER COUNTY ASTRONOMICAL SOCIETY**

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February 2009

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## CCAS Upcoming Nights Out

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

On Saturday, February 28th, CCAS will host a public "night out" in Nottingham County Park at 7:00 PM. The county park is located 4 miles south of Oxford off Route 1 Bypass in southwestern Chester County. Take the exit for route 272 and follow the park signs. When you come into the park, take a left and go past the office. The road will turn to gravel then a large field opens up. This is where the Freedom Fest fireworks event is held every summer. Park contact information is: 150 Park Road, Nottingham, PA 19362. Main number: 610-932-2589.

March 7th CCAS has a private "night out" with a local Brownies pack near Hibernia Park, Coatesville.

On Saturday, April 4th, at 8:00 PM, CCAS and West Chester Recreation are hosting a night under the Moon and stars at Hoopes Park. This event is part of a world wide event called The 100 Hours of Astronomy, celebrating 2009 as the International Year of Astronomy.

## Membership Renewals Due

02/2009	Calobrisi Dautrich La Para Reimer Ruggeri Seward
03/2009	Cini Dougherty LaFrance Molloy Morgan Spackman
04/2009	Baudat Bower Popovich Imburgia

## Important February 2009 Dates

**2nd** • First Quarter Moon, 6:13 PM EST.

**9th** • Full Moon, 9:48 AM EST.

**9th** • Penumbral lunar eclipse, 10 A.M. EST.

**16th** • Last Quarter Moon, 4:37 PM EST.

**24th** • New Moon, 8:35 PM EST.



## Winter 2009 Society Events

### February 2009

4th • PA Outdoor Lighting Council monthly meeting.

10th • DVD Lecture Series: "The Search for Extraterrestrials", at 7:00 p.m.

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): Aries by Jim Anderson.

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

17th • Introductory Astronomy Class: Space-ship Earth, Room 113, Boucher Building, West Chester University. Class starts at 7:00 p.m.

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

### March 2009

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

4th • PA Outdoor Lighting Council monthly meeting.

7th • Private "night out" with local Brownies pack near Hibernia Park, Coatesville.

10th • DVD Lecture Series: "Special Relativity and Interstellar Travel", at 7:00 p.m.

10th • CCAS Monthly Meeting, Room 113, Boucher Building, West Chester University. The meeting starts at 7:30 p.m. CCAS Guest Speaker: Dr. Mark Gagné, "Star Formation." Constellation of the Month: Libra by Robert Fellwock.

13th • West Chester University Planetarium Show: "Dethroning the Earth", Schmucker Science Building.

17th • Introductory Astronomy Class: The Other Kids on the Block, Room 113, Boucher Building, West Chester University. Class starts at 7:00 p.m.

27th • CCAS Monthly Observing Session, Myrick Conservancy Center, BVA (inclement weather date March 28th). The observing session starts at sunset.

31st • Introductory Astronomy Class: Planispheres / Star Charts, Room 113, Boucher Building, West Chester University. Class starts at 7:00 p.m.

## Minutes of the January 13, 2009 meeting of the CCAS

Approximately 14 members were in attendance.

Video presentation: *Life Beyond Earth* DVD was shown.

Program – *From Musician to Astronomer: The Great William Herschel Metamorphosis* by Dr. Harry Augensen

Constellation of the month – Ursa Major presented by K. Buczynski

Website – no report

Finance – The CCAS received a request from the Lyme Disease Association for a donation. The suggestion was made to donate \$75 and this was approved by a vote of the members present.

Observing – Our next regular observing session is scheduled for Friday January 23 at BVA. During February our BVA event is replaced by a star party at Nottingham Park in southern Chester County. Don will also follow up with the Chester County park at Springton Manor to see if that site is available for regular observing sessions.

Library – no report.

Secretary – There were no minutes in the January newsletter since our regular meeting was replaced by our holiday gathering at Landmark Americana. The minutes from this month's meeting will be published in the newsletter.

Education – Flyers for the Telescope workshop and the Introductory Astronomy classes are complete. The Telescope workshop will be held at BVA on January 31 and the Introductory classes begin February 3<sup>rd</sup>.

Public Relations – Deb has sent out news releases for our Telescope workshop, Introductory classes and observing sessions to the local newspapers.

Newsletter – no update.

Programs – We need volunteers for the COM presentations in 2009. Most of the meetings have a program planned.

Elections – We need volunteers to call the membership to see who is interested in running for an office. The terms are two years.

*(Editor's note: The webmaster/newsletter editor thought the 20th was the 2nd Tuesday of the month and showed up for the meeting a week late!)*

**The Sky Over Chester County**  
February 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		
02/01/2009	7:09 a.m. EST	5:20 p.m. EST	First Quarter	02/02/2009	6:13 p.m. EST
02/14/2009	6:54 a.m. EST	5:36 p.m. EST	Full Moon	02/09/2009	9:49 a.m. EST
02/28/2009	6:35 a.m. EST	5:52 p.m. EST	Last Quarter	02/16/2009	4:37 p.m. EST
			New Moon	02/24/2009	8:35 p.m. EST

## February 2009 Observing Highlights

by Don Knabb, CCAS Observing Chair

- February 2 First Quarter Moon, 6:13 p.m., possible Lunar X opportunity?
- February 3 The Moon passes through the northern edge of the Pleiades.
- February 9 Full Moon, 9:49 a.m.
- February 11-25 Look for the zodiacal light in the evening sky.
- February 16 Last quarter, Moon 4:37 p.m.
- February 24 New Moon, 8:35 p.m.
- February 27 Use the crescent Moon in late afternoon to see Venus during daylight.

**The Planets:** We are down to just two evening planets, Venus and Saturn. Venus is impossible to miss in the sky after the sun has set and ringed planet Saturn rises around 7:30 p.m. in the east. Mercury, Mars and Jupiter are only visible just before the Sun rises.

**Mercury:** Mercury is not well placed for viewing during February.

**Venus:** Our sister planet shines at an incredible -4.8 magnitude on February 19<sup>th</sup>. That's 20 times brighter than Sirius, the brightest star in the sky! And on February 27<sup>th</sup> and you can use the 3 day old crescent Moon to find Venus before the Sun has set. Around 5:00 p.m. use binoculars to find the thin crescent Moon in the southwest well above and a bit to the left of the Sun. Then scan up and to the right for Venus. After you locate this pair try to see them without binoculars.

**Mars:** The red planet rises less than an hour before the Sun so it will be difficult to view during February.

**Jupiter:** The story is the same for Jupiter during February with the king of the planets rising just before the Sun throughout February.

**Saturn:** With Saturn rising between 7 and 8 p.m. it is a good viewing target later in the evening. The angle at which we see the rings increases slightly so

Saturn is a bit brighter than the last few months when the rings were nearly edge-on.

**Uranus and Neptune:** Neither of the gas giants is well placed for viewing during February.

**Pluto:** Pluto is also poorly placed for viewing during February.

**The Moon:** Full Moon is on February 9<sup>th</sup>. According to Native Americans this is the Full Snow Moon since the heaviest snow usually falls during this month. Some tribes also referred to this Moon as the Full Hunger Moon, since harsh weather conditions in their areas made hunting very difficult.

**Constellations:** During February, if it is warm enough, I enjoy staring for a long time toward the south to enjoy the constellations with bright stars. This includes Taurus with Aldebaran, Orion with Betelgeuse and Rigel, Canis Major with Sirius and Canis Minor with Procyon. Betelgeuse, Sirius and Procyon make up the Winter Triangle.

This time of year I also enjoy using binoculars to see the "S" string of stars that is on Orion's belt like a string of jewels. They are between the center star of his belt and the right star. This grouping is always fun to share with family and friends.

**Messier/Deep Sky:** Later in the evening look for M44, the Beehive, in Cancer. Cancer the Crab is a difficult target in our Chester County skies but look carefully for it to the east of Gemini the Twins. Then using binoculars find M44 at the center of Cancer. It is a beautiful, big collection of stars!

**Comets:** Comet Lulin is predicted to reach 6<sup>th</sup> magnitude during February so it should be able to be easily seen with binoculars. The comet will be in the neighborhood of Leo late in February. Use the finder chart in the February issue of Astronomy.

**Meteor Showers:** There are no major meteor showers during February. I am pleased to report that I observed 24 Quadrantid meteors from 4:30 a.m. to 5:30 a.m. on February 3<sup>rd</sup> with one meteor leaving a glowing trail!

## Looking Up: Zodiacal Light

by Don Knabb, CCAS Observing Chair

I have often read about, but never seen, the Zodiacal Light. At certain times of year a faint cone of light appears in dark locations. This eerie glow is the Zodiacal Light. This year I will make an extra effort to see this faint phenomenon of the winter night skies.

The best time to see the Zodiacal Light is when the ecliptic appears nearly vertical to our horizon. For Chester County observers the Zodiacal light is most easily visible from a dark location under clear and transparent skies just after evening twilight in the west in February and March, and in the morning eastern sky, just before the start of twilight in October. Since I am not often out observing before dawn, these next few weeks are, for me, the best opportunity to see the Zodiacal Light. It is so faint that it is completely masked by either moonlight or light pollution, so I don't know if we will be able to see this at our Brandywine Valley Association observing site.

The reason for the name "Zodiacal" Light is because it is usually seen projected against the zodiacal constellations.

The zodiacal light is a faint, roughly triangular, whitish glow which appears to extend up from the vicinity of the sun along the ecliptic or zodiac. The Zodiacal Light decreases in intensity with distance from the Sun, but on very dark nights it has been ob-



*Dominic Cantin photographed the Zodiacal Light near Quebec City, Canada, in August 2000 in this 2-minute exposure. The bright spot is the planet Venus.*

served in a band completely around the ecliptic.

The Zodiacal Light is caused by an enormous cloud of cosmic dust extending outward from the

Sun and past the orbit of the Earth. The particles have diameters between a couple of micrometers and a few millimeters.

*(Continued on page 6)*

## 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).



### Zodiacal Light

(Continued from page 5)

Many people confuse the Zodiacal light with twilight since it occurs in roughly the same area of sky, although careful attention to the time of the true end of astronomical twilight will remove any doubt about whether you are seeing the Zodiacal light or the sky brightening from lingering twilight. You can find that time for any date and location from this website: [http://www.sunrisesunset.com/custom\\_srss\\_calendar.asp](http://www.sunrisesunset.com/custom_srss_calendar.asp).

Since the band of dust that forms

the Zodiacal light completely circles the sun, it actually stretches across the entire night sky. At the anti-solar point, that point in the sky exactly opposite the sun in the sky, lies a very subtle, and very faint brightening of the dust called the Gegenschein, which is German for "counter-glow". The Gegenschein is most easily seen at midnight when it is highest in the sky, and in those times of the year when it is in a part of the sky with few stars from late September to early November in Pices, and from late January to early February in Cancer.

Interestingly, the Zodiacal Light and Gegenschein can only be seen with the unaided eye, and not through any optical instruments such as binoculars or telescopes because of its large size and low surface brightness..

Information credits:

[http://en.wikipedia.org/wiki/Zodiacal\\_light](http://en.wikipedia.org/wiki/Zodiacal_light)

<http://www.space.com/spacewatch/>

<http://www.astropix.com/>

[HTML/H\\_OTHER/ZLITE.HTM](http://www.astropix.com/HTML/H_OTHER/ZLITE.HTM)

## 2009 International Astronomical Youth Camp

submitted by Klaas Vantournhout, President, The International Workshop for Astronomy e.V.

The 45th Annual International Astronomical Youth Camp (IAYC) will be held in southern Poland from August, 2nd to 22nd, 2009. It will take place near the small town of Korbielow at Schronisko na Hala Miziowa, a hotel in the Beskid Zywiecki district. This



Observing the 2008 partial solar eclipse.

mountainous district is in the eastern Carpathian mountains. The hotel is situated close to the Slovakian border and 1557m high (5108 ft) Pilsko mountain, the second highest peak in the region.

The IAYC is an international youth camp with participants from about 20 different countries. Participants work for three weeks in one of 8 workgroups - together with other young people - on astronomical projects. The projects vary from nighttime observations to theoretical problems, depending on the par-

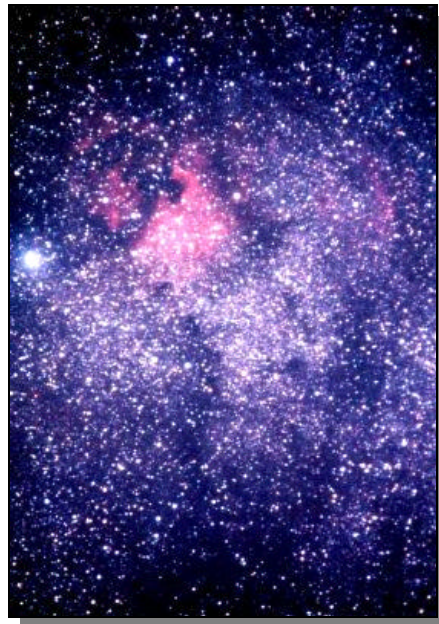


Free time during 2008 camp in Germany.

ticipant's interests. The workgroups are led by young scientists from the IAYC team.

IAYC 2009 will offer a wide range of workgroups and topics, ranging from ancient astronomy, introduction to astronomy and physics, practical observations, computer simulations, to CCD photometry and data reduction. There will be something for everyone, from the very beginner to the most ambitious student.

IAYC is different from most astronomical camps for two rea-



NGC 7000 region - exposure time 15 min,  
400 ASA slide film ( $f=135$  mm)  
by Hermann Gump

sons: its international character and the fact that each participant does her/his own small research project, not just accepting facts but rather discovering them him/herself. IAYC is also not like a hotel where one takes a summer class or astronomy course. Every



Two Mexican girls perform a traditional dance during evening entertainment (2007).

participant, with his or her own cultural background, forms an important piece in the complex puzzle of camp life.

Apart from the astronomical program, there are many non-astronomical activities such as group games, sporting events, singing evenings, hiking tours and a fieldtrip. Since it is an international camp, the camp language is English. Participants should be able and willing to speak English throughout the camp. It is not necessary to speak English fluently.



Fieldtrip to Slovakian Observatory (2005)

Anyone from 16 to 24 years old and able to communicate in English may participate in IAYC 2009. The fee for accommodation, full room & board and the whole program, including the fieldtrip, is 570 € (Euro), or approximately US \$725. For

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## Astronomy Summer Camp in Poland



*Two Portuguese students take a spectrum reading of the Sun (2004).*

*(Continued from page 7)*

those interested but not able to pay the camp fee themselves, grants in limited numbers are made available.

More detailed information about IAYC 2009 is posted on the organization's website. If you have any questions or wish to be notified when more information becomes available, please contact:

**Ana Brajovic**  
**Svetog Save 20/1a**  
**11000 Beograd**  
**Serbia**

tel.: +381 642623182  
e-mail: [info@iayc.org](mailto:info@iayc.org)

International Astronomical  
Youth Camp  
IAYC 2009, Korbielow, Poland  
website : <http://www.iayc.org/>  
more info : [info@iayc.org](mailto:info@iayc.org)



*The general atmosphere of camp.*

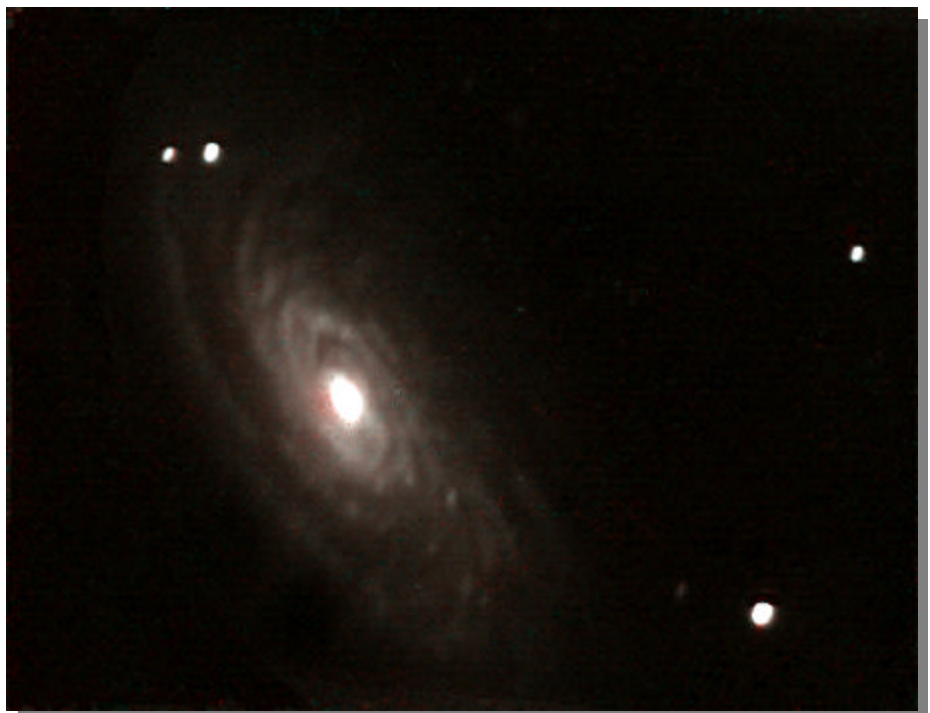
## CCAS Member Astrophotography

*by Don Knabb & Dave Hockenberry*



*The moon from the Pocono mountains over the Christmas holiday, by Don Knabb.*

*What do a Hula Hoop, a soybean, a marble, a 1/2 inch cube of wood, a football field, and a peach have to do with understanding the universe? To find out, come to the February meeting of the Chester County Astronomical Society and see Don Knabb's presentation "Galaxies like Grains of Sand".*



*M88 in Virgo cluster, stack of 14 images shot 1/19/09. Meade 10" LX200R f/10, each image 4 minutes, FITS, dark subtracted in AIP4Win and LRGB merged and cleaned up extensively in Photoshop.  
Photo by Dave Hockenberry.*



## CCAS Introductory Astronomy Classes

CCAS sponsors classes open to the public several times per year. Classes are taught by members of our society or West Chester University faculty. Members are encouraged to attend and lend a helping hand. This Spring we are offering our *Introduction to Astronomy* program, a series of eight classes meeting Tuesday nights from February 17th through May 19th, 2009. Each class is one hour long with a half-hour observing session immediately afterwards, weather permitting.

### Cost

\$20.00 per person  
or

\$30.00 per family of 3\*  
(with same address)

For ages 9 – 90

\*\$5.00 for each additional family member. For current CCAS members, the classes are free!

### Location

West Chester University  
Boucher Hall  
Room 113  
S. Church Street  
West Chester, Pa.

### Includes

- Parking
- Handouts
- 4-month CCAS membership
- CCAS monthly newsletter
- Observing sessions
- Star locator (planisphere)
- Drawing for excellent beginners' guide book

#### **Feb 17th, 2009: "Spaceship Earth"**

*Taught by Ed Lurcott*

Learn how the Earth orbits around the Sun, why we have seasons, how far the Earth is from the Sun, why the night sky changes and how to find what stars are out at any time of the year.

#### **March 3rd, 2009: "The Other Kids on the Block"**

*Taught by Ed Lurcott*

Learn how the planets move in the Solar System, it's relative size and what planets are visible with the naked eye and why.

#### **March 17th, 2009: "The Moon"**

*Taught by Bob Popovich*

Learn how the Earth/Moon/Sun work together to create eclipses, why we only see one side of the Moon, why we see phases of the Moon; learn to see different patterns on the Moon's face when full.

#### **March 31st, 2009: "Planispheres / Star Charts"**

*Taught by Jim Anderson*

Learn how to read star charts and planispheres including the symbols found on star charts.

#### **Apr 7th, 2009: "The Days of Stars' Lives"**

*Taught by Deb Goldader*

Learn the life cycle of a star, differences in color, and the bright stars in constellations.

#### **April 21st, 2009: "West Chester University Planetarium Show"**

*Demonstrated by Dr. Karen Vanlandingham, West Chester University*

Join us for a demonstration of the university planetarium, its equipment, and a "tour" of the Spring night sky.

#### **May 5th, 2009: "The Stars on Your Computer"**

*Taught by John Hepler*

Learn about several different planetarium programs available to the public.

#### **May 19th, 2009: "Beyond Naked Eye: Binoculars, Telescopes, and Mounts"**

*Taught by Nicholas La Para*

Learn the basic information about binoculars and telescopes and their mounts and eyepieces and sample what can be seen from them. Beginners will be able to make intelligent, informed decisions about their use and purchase, and determine which is best for them.

## Severe Space Weather

by Dr. Tony Phillips

Did you know a solar flare can make your toilet stop working?

That's the surprising conclusion of a NASA-funded study by the National Academy of Sciences entitled *Severe Space Weather Events—Understanding Societal and Economic Impacts*. In the 132-page report, experts detailed what might happen to our modern, high-tech society in the event of a “super solar flare” followed by an extreme geomagnetic storm. They found that almost nothing is immune from space weather—not even the water in your bathroom.

The problem begins with the

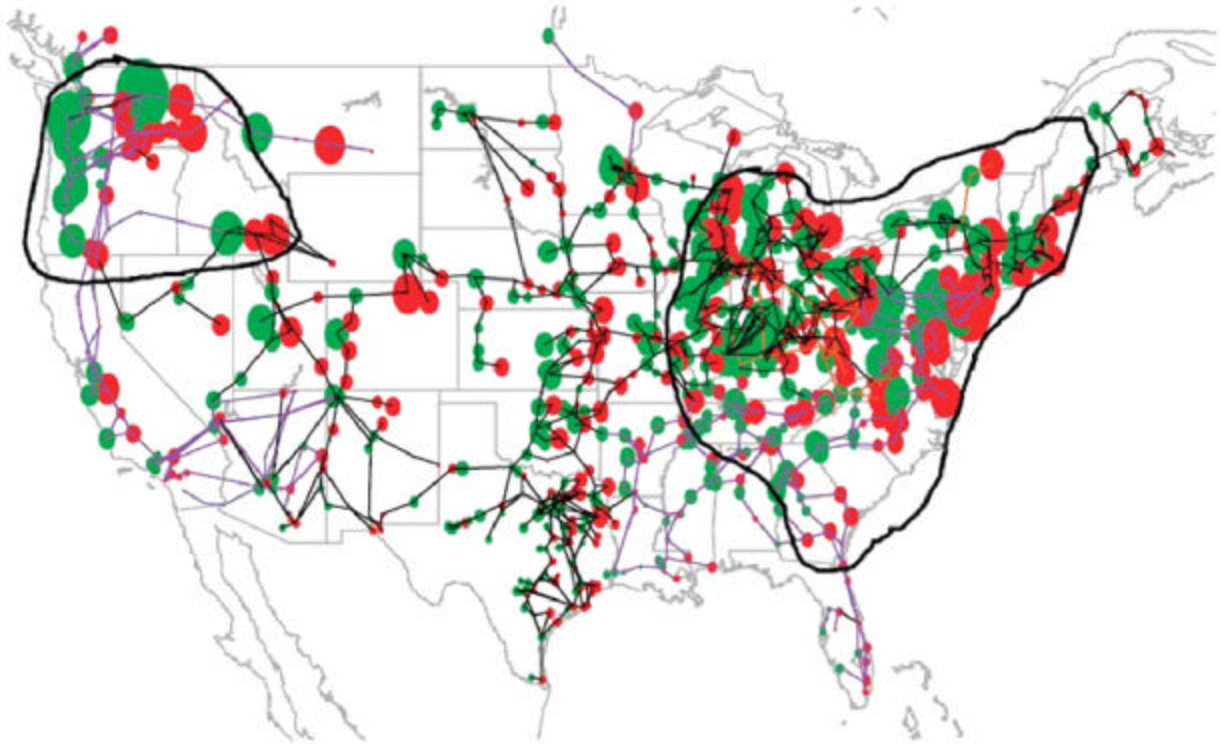
electric power grid. Ground currents induced during an extreme geomagnetic storm can melt the copper windings of huge, multi-ton transformers at the heart of power distribution systems. Because modern power grids are interconnected, a cascade of failures could sweep across the country, rapidly cutting power to tens or even hundreds of millions of people. According to the report, this loss of electricity would have a ripple effect with “water distribution affected within several hours; perishable

foods and medications lost in 12-24 hours; loss of heating/air conditioning, sewage disposal, phone service, fuel re-supply and so on.”

“The concept of interdependency,” the report notes, “is evident in the unavailability of water due to long-term outage of electric power—and the inability to restart an electric generator without water on site.”

It takes a very strong geomag-

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On this power-grid map of the United States, the black-circled areas are regions especially vulnerable to collapse during an extreme geomagnetic storm. Inside those boundaries are more than 130 million people. Credit: National Academy of Sciences report on severe space weather.

## Severe Space Weather

(Continued from page 10)

netic storm to cause problems on this scale—the type of storm that comes along only every century or so. A point of reference is the “Carrington Event” of August-September 1859, named after British amateur astronomer Richard Carrington who witnessed the instigating solar flare with his unaided eye while he was projecting an image of the Sun on a white screen. Geomagnetic storms triggered by the flare electrified telegraph lines, shocking technicians and setting their telegraph papers on fire; Northern Lights spread as far south as Cuba and Hawaii; auroras over the Rocky Mountains were so bright, the glow woke campers who began preparing

breakfast because they thought it was morning!

“A contemporary repetition of the Carrington Event would cause ... extensive social and economic disruptions,” the report warns. Widespread failures could include telecommunications, GPS navigation, banking and finance, and transportation. The total economic impact in the first year alone could reach \$2 trillion (some 20 times greater than the costs of Hurricane Katrina).

The report concluded with a call for infrastructure designed to better withstand geomagnetic disturbances and improvements in space weather forecasting. Indeed, no one knows when the

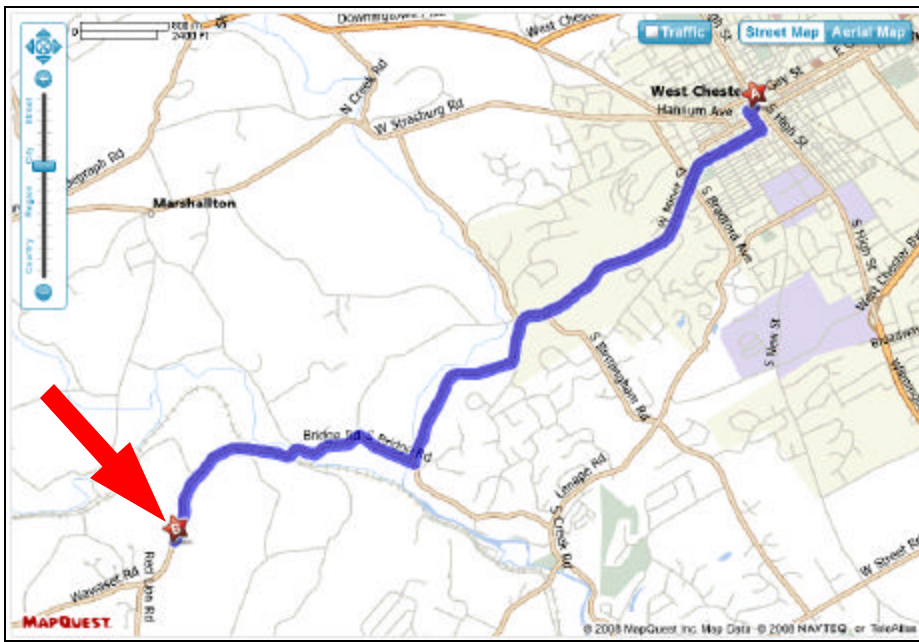
next super solar storm will erupt. It could be 100 years away or just 100 days. It’s something to think about ... the next time you flush.

One of the jobs of the Geostationary Operational Environmental Satellites (GOES) and the Polar-orbiting Operational Environmental Satellites (POES) operated by NOAA is to keep an eye on space weather and provide early warning of solar events that could cause trouble for Earth.

You can keep an eye on space weather yourself at the National Weather Service's Space Weather Prediction Center, [www.swpc.noaa.gov](http://www.swpc.noaa.gov). And for

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## 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 left through the gate and drive up the farm lane about 800 feet to the top of the hill. The observing area is on the right.

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

## Galileo Exhibit at the Franklin Institute

by Dave Hockenberry

The Franklin Institute will open a special exhibit in April, entitled, "Galileo, The Medici, and The Age of Astronomy". The exhibit will run through November 2009. There will be one of the two remaining Galileo telescopes on display, which is very special, since neither telescope has ever left Italy.

Also exhibited will be other instruments belonging to Galileo, as well as paintings, prints, and manuscripts from the priceless Medici collection. Together, the collections will showcase how the union of science, art, and political power gave rise to Galileo's success.

If you go to the Franklin Institute website ([www.fi.edu](http://www.fi.edu)), look for the link to sign up for announcements of special events. There are also some special events listed under "Member Events" with a pre-opening guest speaker and a build your own telescope workshop.

## Severe Space Weather

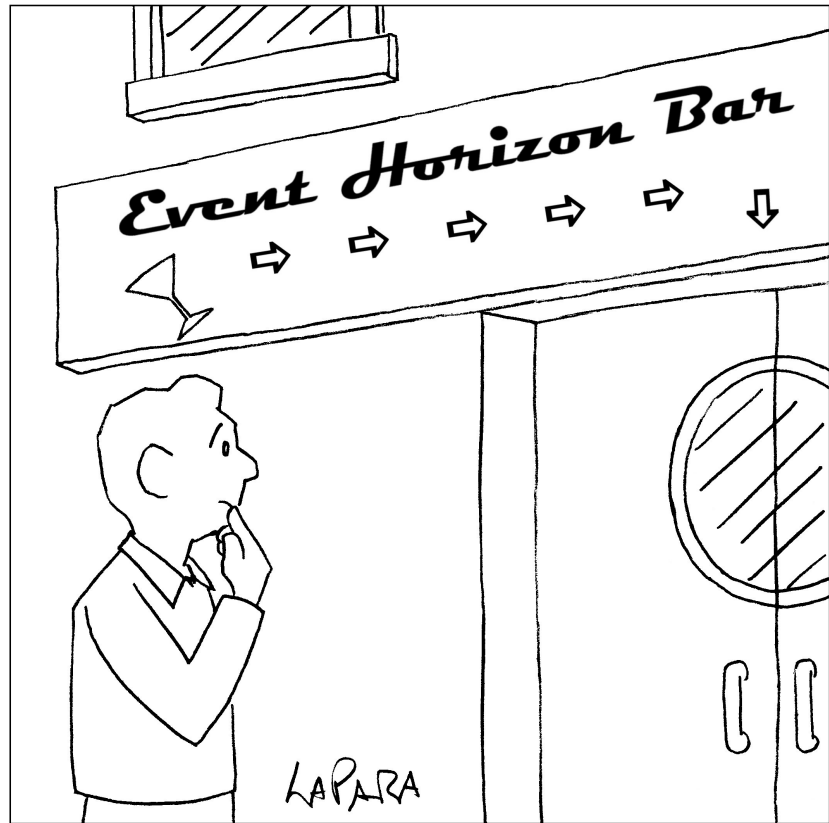
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young people, space weather is explained and illustrated simply and clearly at the SciJinks Weather Laboratory, [scijinks.gov/weather/howwhy/spaceweather](http://scijinks.gov/weather/howwhy/spaceweather).

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

## Nicholas's Cartoon Corner

by Nicholas La Para



HERBERT HESITATES BEFORE STOPPING FOR A DRINK ON HIS WAY HOME ...

## CCAS Membership Information and Society Financials

### Treasurer's Report

by Bob Popovich

#### Dec. 2008 Financial Summary

Beginning Balance	\$1,918
Deposits	\$100
Disbursements	\$92
Ending Balance	\$1,926

### Welcome New Members!

This month we welcome a new member to the Society: Paul Bastian from Phoenixville. We also welcome back Bruce Holenstein of Media. 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.

## 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](mailto:ida@darksky.org)

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

[www.darksky.org](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 [www.ccas.us](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:

[www.POLCouncil.org](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:

[www.LymePA.org](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

[www.starrynightlights.com](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

[www.greeneearthlighting.com](http://www.greeneearthlighting.com)

## Local Astronomy-Related Stores

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



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

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

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

[www.skiesunlimited.net](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

[www.spectrum-scientifics.com](http://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](mailto: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](mailto:newsletter@ccas.us).

## CCAS Website

John Hepler is the Society's Webmaster. You can check our Website at:

[www.ccas.us](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 (484-266-0699) or e-mail to [webmaster@ccas.us](mailto: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:

<b>President:</b>	Kathy Buczynski 610-436-0821
<b>Vice Pres:</b>	Jim Anderson 610-857-4751
<b>ALCor and Treasurer:</b>	Bob Popovich 610-363-8242
<b>Secretary:</b>	Don Knabb 610-436-5702
<b>Librarian:</b>	Linda Lurcott Fragale 610-269-1737
<b>Observing:</b>	Don Knabb 610-436-5702
<b>Education:</b>	Kathy Buczynski 610-436-0821
<b>Webmaster and Newsletter:</b>	John Hepler 484-266-0699
<b>Public Relations:</b>	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](mailto:B2N2@verizon.net)**

## 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 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**.