Observations

A Monthly Publication Of The
CHESTER COUNTY ASTRONOMICAL SOCIETY

Vol. 18, No. 1 *Two-Time Winner of the Astronomical League's Mabel Sterns Award ¤ 2006 & 2009* *January 2010*

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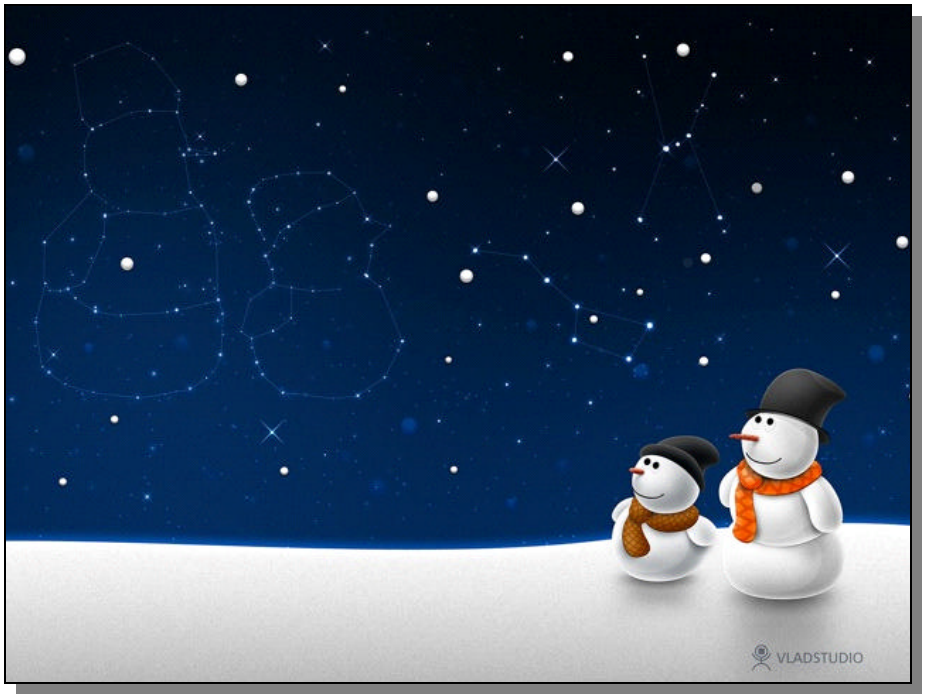


Membership Renewals Due

01/2010	Bronstein
02/2010	Bastian Calobrisi & Family La Para Reimer
03/2010	Cini LaFrance Piehl

Important January 2010 Dates

2nd-4th • The Quadrantid meteor shower is active with the peak on January 3rd.

7th • Last Quarter Moon 5:39 a.m.

9th • Last Quarter Moon at 3:56 p.m.

15th • New Moon 2:11 a.m.

23rd • First Quarter Moon 5:53 a.m.

30th • Full Moon 1:18 a.m.

CCAS Upcoming Nights Out

CCAS already has several "nights out" scheduled for 2010. Members are encouraged to help out during these events any way they can. See below for more information.

¤ Saturday, April 17, 20109 - Night Out in Hoopes Park, West Chester. The event is cohosted with the West Chester Department of Recreation.

¤ Saturday, May 22, 2010 - Night Out in Anson Nixon Park, Kennett Square.

¤ Saturday, September 18, 2010 - Night Out in Anson Nixon Park, Kennett Square.

Winter 2010 Society Events

January 2010

4th • PA Outdoor Lighting Council monthly meeting, Bucktown Branch of National Penn Bank, starting at 7:30 p.m. Meetings are open to the public. For more information and directions, visit the PA Outdoor Lighting Council website (http://www.polcouncil.org/).

12th • DVD Lecture Series: "The Quest for Black Holes", half-hour video presentation of a lecture by Professor Alex Filippenko, UC Berkeley. Room 113, Merion Science Center (former Boucher Building), West Chester University. The presentation immediately precedes the monthly meeting and starts at 7:00 p.m.

12th • CCAS Monthly Meeting, Room 113, Merion Science Center. Featured speaker: Dr. Marc Gagné, "X-Ray Observations of Deep Space Galaxy Clusters". Constellation of the Month (COM): Aquarius, presented by Dave Hockenberry. The meeting starts at 7:30 p.m.

15th • CCAS Monthly Observing Session, Myrick Conservancy Center, BVA (inclement weather date January 16th). The observing session starts at sunset.

20th • Open call for articles and photographs for the February 2010 edition of Observations.

26th • Deadline for newsletter submissions for the February 2010 edition of Observations.

February 2010

3rd • PA Outdoor Lighting Council monthly meeting, Bucktown Branch of National Penn Bank, starting at 7:30 p.m. Meetings are open to the public. For more information and directions, visit the PA Outdoor Lighting Council website (http://www.polcouncil.org/).

9th • DVD Lecture Series: "Imagining the Journey to a Black Hole", half-hour video presentation of a lecture by Professor Alex Filippenko, UC Berkeley. Room 113, Merion Science Center (former Boucher Building), West Chester University. The presentation immediately precedes the monthly meeting and starts at 7:00 p.m.

9th • CCAS Monthly Meeting, Room 113, Merion Science Center (former Boucher Building). The meeting starts at 7:30 p.m. Guest Speaker: Mike Turco, "Solar Activity & Global Warming" Constellation of the Month: TBA.

12th • West Chester University Planetarium Show: "Other Earths", Schmucker Science Building, Show starts at 7 p.m. and is free of charge. For more information and reservations, please contact Dr. Karen Vanlandingham, Planetarium Director, via email or visit the planetarium's webpage.

12th • CCAS Monthly Observing Session, Myrick Conservancy Center, BVA (inclement weather date February 13th). The observing session starts at sunset.

20th • Open call for articles and photographs for the March 2010 edition of Observations.

26th • Deadline for newsletter submissions for the March 2010 edition of Observations.

26th • Reservations start for the March 19th planetarium show at the WCU Planetarium. For more information, please contact Dr. Karen Vanlandingham, Planetarium Director, via email or visit the planetarium's webpage.

Minutes from the December 2009 Monthly CCAS Meeting

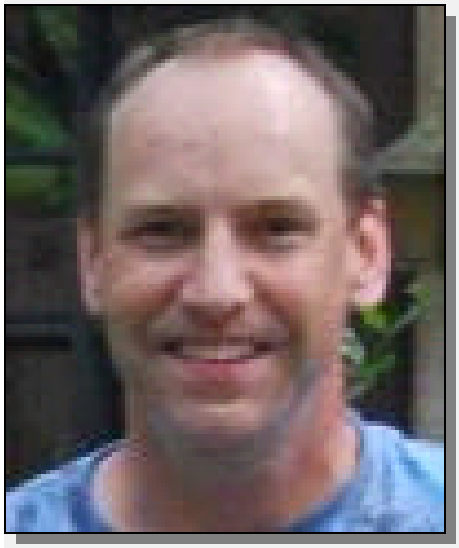
by Don Knabb, CCAS Secretary & Observing Chair

No minutes were taken as the annual CCAS Holiday Party took place on December 8th, 2009. The party was held at Bob & Betsy Popovich's home in Exton, PA. See below for photos from the party. Thanks to Kathy Buczynski for taking pictures!

Top Left: Nicholas LaPara; Top Right: Pat Friel & Bob Popovich; Middle Left: Vic Long & Steve Leiden; Middle Right: Bill O'Hara & Dave Hockenberry; Lower Left: Roseanne Long & Janice Leiden; Middle Right: Ann Miller & Betsy Popovich; and Bottom Left: Bill O'Hara with Don & Barb Knabb. Not pictured: Linda Fragale, Kathy Buczynski.

This Month's Guest Speaker

by John Hepler, CCAS Webmaster & Newsletter Editor



Dr. Marc Gagné, PhD Physics, University of Georgia

The guest speaker at our January 12th, 2010, meeting is Dr. Marc Gagné. His presentation is entitled, *"X-Ray Observations of Deep Space Galaxy Clusters"*.

Dr. Gagné is an associate professor of astronomy and the interim department chair of West Chester University's Department of Geology and Astronomy. He is particularly interested in the clusters of young stars, specifically those that have only lived for a tiny fraction of their lifetime. He studies low-mass and high-mass stars, and in particular, he focuses on x-rays and on infrared emissions of young stars. Dr. Gagné uses high-resolution images and high-resolution spectra from NASA's Chandra X-ray Observatory in his research.

How did Dr. Gagné get involved in astronomy?

"I was a high school math and physical science teacher in Gabon, Central Africa. The skies were clear and dark and I really saw the stars for the first time. I found a star guide in a pile of old books a Peace Corps volunteer had left - I was hooked. I went to grad school to study astronomy soon after my three years in Africa - and here I am."

Roster of Upcoming Guest Speakers

by Dave Hockenberry, CCAS Program Chair

We have an exciting program of guest speakers this spring, covering a diverse range of topics. This month Dr. Marc Gagné is speaking on x-rays and infrared emissions of young stars. In February, former CCAS President Mike Turco will be at the podium to discuss solar activity and its effect on global warming.

In March we're in for a treat with a presentation on the future of the Schmidt Cassegrain telescope by well-known author and blogger "Uncle" Rod Mollise. He is also author of the online magazine *The Journal of Double Star Observations*, published by the University of Southern Alabama.

Dr. Dave Klassen, from Rowan University, is our guest speaker in April. He'll be talking about

(Continued on page 9)

No Night without a Telescope

by Don Knabb, CCAS Secretary

Look what I found on the WCU Physics department page! My sister-in-law is a professor at WCU saw this the other day on the website. That's me 2nd from the left and Barb behind our telescope. As you can see from the picture, we dodged clouds, but it was a lot of fun with 80 people that night.

Photo by Jacob Lawton

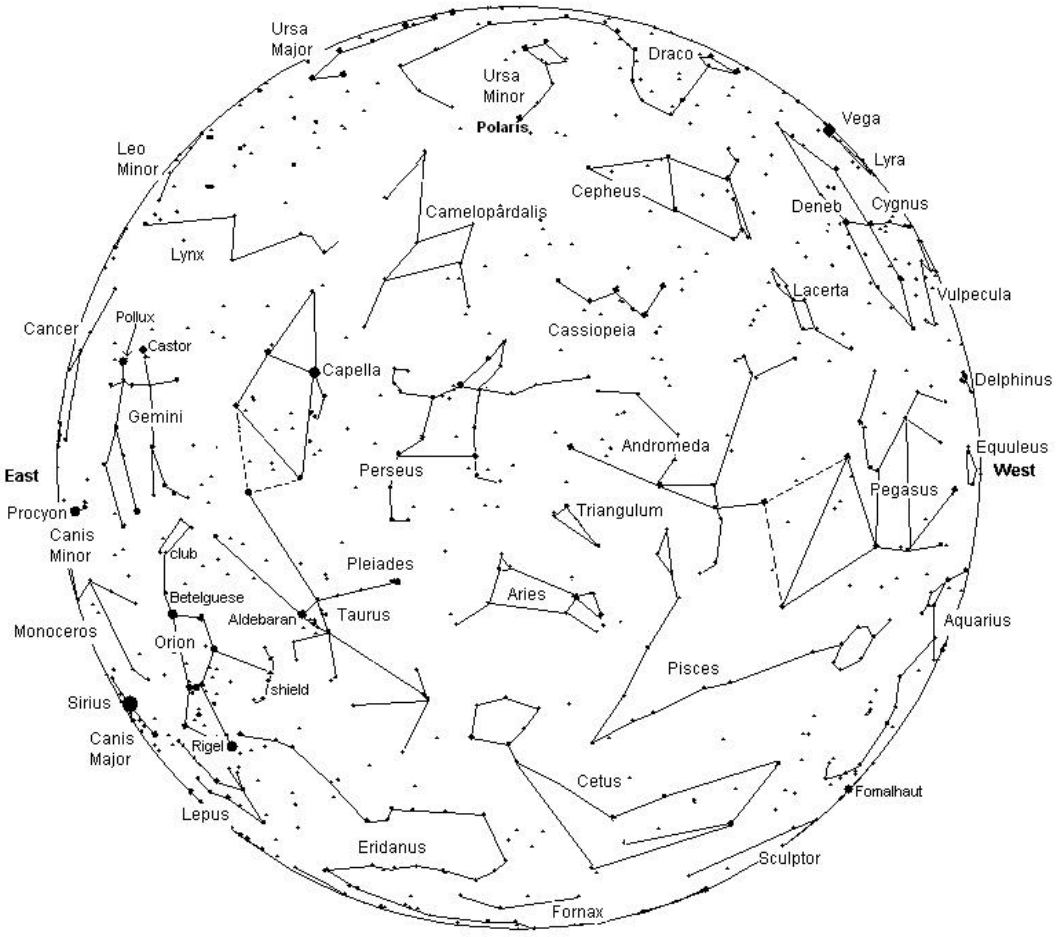
No Night without a Telescope

"Philadelphia-area colleges and universities celebrated the International Year of Astronomy with a program called "No Night Without a Telescope." Overall, about 200 people came to West Chester and braved the elements to peer at the Jovian satellites, Andromeda galaxy, and star clusters through telescopes set up on the lawn of the Quad. On nights with bad weather, the public stayed warm indoors and enjoyed planetarium shows and hands-on astronomy activities. Special thanks to Physics students Mike Hedrick and Brittany Johnstone for all of their support."

The Sky Over Chester County

January 15, 2010 at 9:00 p.m. EST

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		
01/01/2010	7:23 a.m. EST	4:46 p.m. EST	First Quarter	01/23/2010	5:53 a.m. EST
01/15/2010	7:21 a.m. EST	5:00 p.m. EST	Full Moon	01/30/2010	1:18 a.m. EST
01/31/2010	7:10 a.m. EST	5:19 p.m. EST	Last Quarter	01/07/2010	5:39 a.m. EST
			New Moon	01/15/2010	2:11 a.m. EST

January 2010 Observing Highlights

by Don Knabb, CCAS Secretary & Observing Chair

January 2-4	The Quadrantid meteor shower is active with the peak on January 3rd.
January 11	Antares is very close to the waning crescent Moon at dawn.
January 7	Last Quarter Moon, 5:39 a.m.
January 15	New Moon, 2:11 a.m.
January 17	A thin crescent Moon and Jupiter are close at sunset.
January 23	First Quarter Moon, 5:53 a.m.
January 29	Mars is at opposition and is close to the full Moon.
January 30	Full Moon 1:18 a.m.

The Planets: Two planets are visible in the early evening hours, but they are in opposite parts of the sky. Jupiter is setting in the southwest as Mars is rising in the southeast. Saturn rises around midnight and is high in the south at dawn. Mercury is visible at dawn near the end of the month.

Mercury: The planet closest to the Sun can be seen in the dawn sky during the second half of January. Mercury rises about an hour before the Sun in the southeast.

Venus: Our sister planet is lost in the glow of the Sun during January and is essentially invisible to us until late in February.

Mars: As Jupiter exits stage right, Mars enters on the left, rising higher in the southeastern sky every night. If you can look at Mars through the eyepiece of your telescope without shivering uncontrollably in the frigid January night you will see it at its largest on January 27 when it is closer to Earth than any other time from 2009 to 2013. And two nights later Mars is at opposition when it is exactly opposite from the Sun in our sky.

Jupiter: Jupiter is beautiful bright object in the west-southwest as the glow of the Sun fades. Enjoy the king of the planets now because he will soon drop into the glow of the Sun before emerging into the dawn sky in April.

Saturn: Saturn continues to rise very late and is best viewed just before dawn.

Uranus and Neptune: Neptune is near Jupiter early in the month but it moves further from Jupiter as January progresses. Uranus is an easy binocular object just south of the Circlet of Pisces, but is falling behind us in our race around the Sun and is getting lower in the sky during January. Finder charts are in the September issue of Sky and Telescope magazine and also on the Sky and Telescope web site.

The Moon: Full moon is on January 30th at 1:18 a. 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.

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 reasonably bright comets to view during January.

Meteor Showers: The Quadrantid meteor shower peaks on January 3 and is active for a day before and after the peak. Last year I observed several dozen Quadrantid meteors, many very bright. It was the best meteor shower of 2009 for me. Unfortunately a bright Moon will interfere with the fireworks this year.

Through the Eyepiece: Collinder 70, Orion's Belt

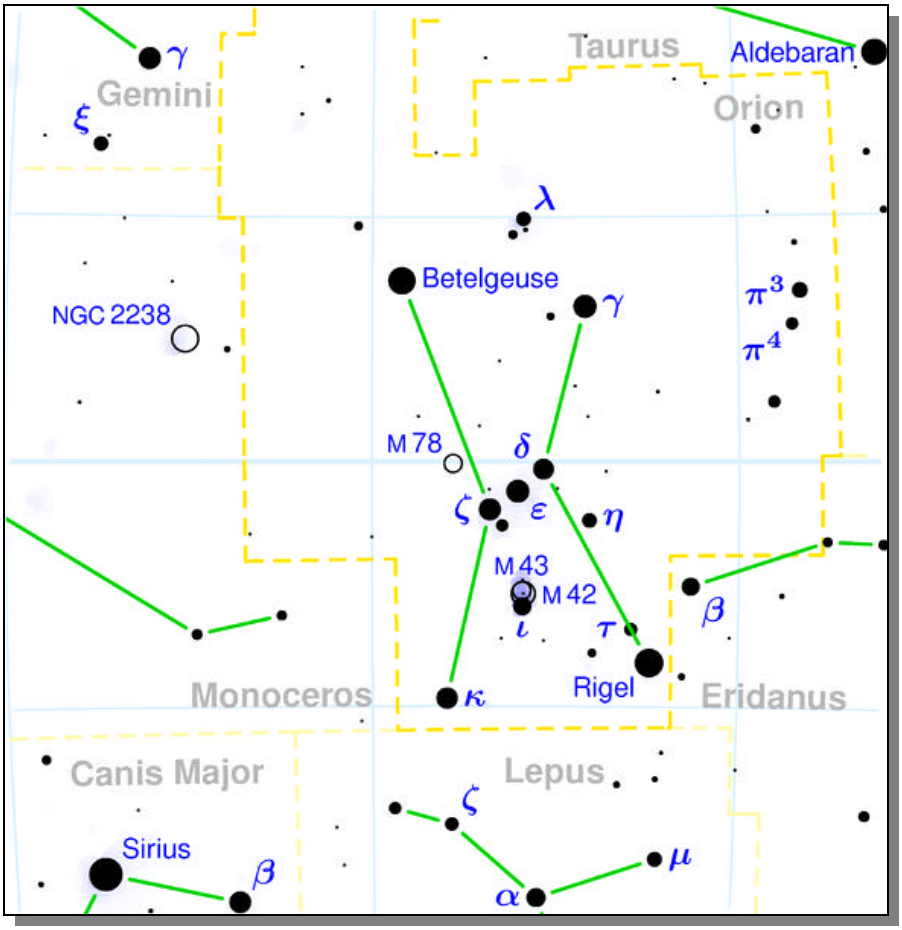
by Don Knabb, CCAS Secretary & Observing Chair

At star parties it is always fun to share star clusters that have distinctive shapes, such as the Coat Hanger Cluster, Kathy's Triangle, NGC 457 (which looks like ET), or Kemble's Cascade, a long string of 20 colorful stars that are in a nearly straight line (see the December 2008 issue of Observations for an article about Kemble's Cascade). Another of these clusters is Collinder 70, the group of stars that form Orion's belt. Undoubtedly you have seen this cluster, but you might not have known that it is Collinder 70.

For those new to stargazing, to the right is a star diagram of the constellation Orion the Hunter. The center three stars in a tight group form Orion's belt, and they are part of Collinder 70.

The stars of Orion's belt are collectively called Collinder 70. It was discovered by Swedish astronomer Per Collinder. This star cluster is best viewed with binoculars because it is huge. If you use a telescope it will need to be one that is of short focal length so that it provides a wide field of view, and use the lowest power eyepiece you have.

With a simple pair of binoculars under good viewing conditions you should be able to see at least 100 stars. My favorite part of this cluster is the S shaped curve that wends its way between the center and right side star of the belt. This is a beautiful curve of stars, like jewels decorating



Sky map credit: http://en.wikipedia.org/wiki/File:Orion_constellation_map.png

Orion the Hunter's belt. Below is a screen shot from the free download program Stellarium.

(Continued on page 7)

Image credit: screenshot from Stellarium

Nicholas's Cartoon Corner
by Nicholas La Para

EVIDENCE THAT THERE WAS LIFE ON MARS

Through the Eyepiece (Cont'd)

(Continued from page 6)

At a winter star party this cluster is guaranteed to give a high "Wow" factor. This cluster is about 1500 light years away and the three brightest stars are 20,000 to 40,000 times as bright as our Sun. With the naked eye we only see the brightest nearby stars in our galaxy, the searchlights among the 100 watt bulbs.

Dress warmly and if possible mount your binoculars on a tripod. Take your time and follow the beautiful chain of stars that form the S shaped curve. If you study the stars closely you will see subtle color variations between the stars. To train your eyes to see the most detail and to improve your observing skills, try sketching the cluster. But beware of frostbite on these cold January nights!

Information Credits:

http://www.cloudynights.com/item.php?item_id=438
http://en.wikipedia.org/wiki/Orion_(constellation)
http://www.backyard-astro.com/deepsky/bino/02_b.html

Did You Know?

One of Edwin Hubble's favorite tricks to impress visitors was to sweep all the papers off his desk into the trash when a visitor arrived. After the visitor had gone, Hubble would dig them out again.

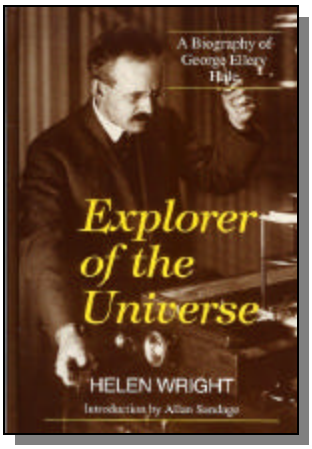
Source: Lonely hearts of the Cosmos, Dennis Overbye

From the CCAS Library
by John Hepler

[Editor's Note: Updating the website for 2010, I added links to books in our library to booksellers online to show how much money members can save by checking out a book from our library rather than purchasing it. I thought it would be a good idea to highlight books from our collection from time to time in the newsletter.]

A biography of famed astronomer George Ellery Hale, who laid much of the foundation of modern astrophysics and observational cosmology. He's best known for the planning and building of the 200-inch Hale Telescope of the Palomar Mountain Observatory.

Drawing on extensive research and interviews with Hale's colleagues, associates, and friends, as well as many of the astronomers he inspired, the author presents an affectionate biography and a revealing look back at the birth and development of modern astrophysics.



Cover of the reprinted edition

Since the history of astrophysics is mostly undocumented, this work provides a rare look at Hale's scientific achievements: his invention of the spectroheliograph, his discovery of the magnetic nature of sunspots, and his legendary leadership in founding the Yerkes, Mount Wilson, and Palomar Mountain Observatories.

Sunglasses for a Solar Observatory

by Patrick Barry

In December 2006, an enormous solar flare erupted on the Sun's surface. The blast hurled a billion-ton cloud of gas (a coronal mass ejection, or CME) toward Earth and sparked days of intense geomagnetic activity with Northern Lights appearing across much of the United States.

While sky watchers enjoyed the show from Earth's surface, something ironic was happening in Earth orbit.

At the onset of the storm, the solar flare unleashed an intense pulse of X-rays. The flash blinded the Solar X-Ray Imager (SXI) on NOAA's GOES-13 satellite, damaging several rows of pixels. SXI was designed to monitor solar flares, but it must also be able to protect itself in extreme cases.

That's why NASA engineers gave the newest Geostationary Operational Environmental Satellite a new set of sophisticated "sunglasses." The new GOES-14 launched June 27 and reached geosynchronous orbit July 8.

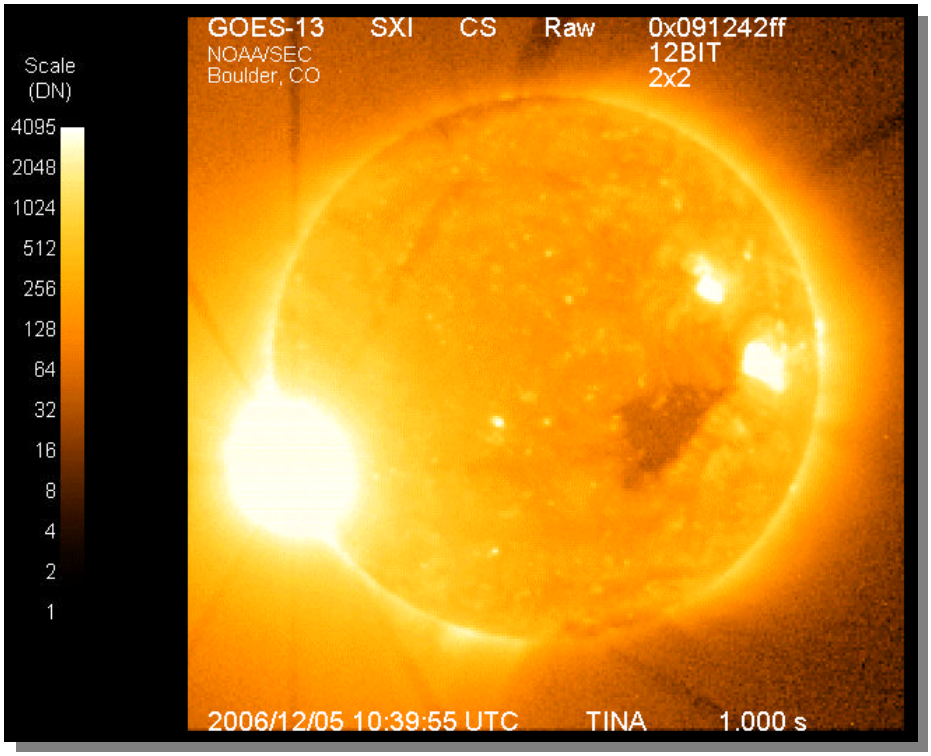
Its "sunglasses" are a new flight-software package that will enable the SXI sensor to observe even intense solar flares safely. Radiation from these largest flares can endanger military and civilian communications satellites, threaten astronauts in orbit, and even knock out cities' power grids. SXI serves as an early warning system for these flares and helps scientists better understand what causes them.

"We wanted to protect the sensor from overexposure, but we didn't want to shield it so much that it couldn't gather data when a flare is occurring," says Cynthia Tanner, SXI instrument systems manager for the GOES-NOP series at NASA's Goddard Space Flight Center in Greenbelt, Maryland. (GOES-14 was called GOES-O before achieving orbit).

Shielding the sensor from X-rays also reduces the amount of data it can gather about the flare. It's like stargazing with dark sunglasses on. So NASA engineers must strike a balance between protecting the sensor and gathering useful data.

When a dangerous flare occurs, the new SXI sensor can protect itself with five levels of gradually "darker" sunglasses. Each level is a combination of filters and exposure times carefully calibrated to control the sensor's exposure to harmful high-energy X-rays. As the blast of X-rays from a major solar flare swells, GOES-14 can step up the protection for SXI through these five levels. The damaged sensor on

(Continued on page 9)



X-9 class solar flare December 6, 2006, as seen by GOES-13's Solar X-ray Imager. It was one of the strongest flares in the past 30 years.

CCAS Original Astrophotography: M27, The Dumbbell Nebula

by Gaston Baudat

The planetary nebula Dumbbell (M27) in the constellation Vulpecula (the fox) taken on Friday November 6th, 2009 (7:37 pm) from my back yard observatory at Glenmoore PA. 36 x 2 minutes exposure, dark and flat frame corrected, stacked, aligned, and processed with Maxim DL.

Telescope: Celestron C11 at f/6.3.

Mount: CGE.

Imager: SBIG ST4000XCM with AO8 + "Orion" Skyglow imaging filter.

Guider: Home made on-axis guider + SBIG remote guider head.

Sunglasses (cont'd)

(Continued from page 8)

GOES-13 had only two levels of protection—low and high. Rather than gradually increasing the amount of protection, the older sensor would remain at the low level of protection, switching to the high level only when the X-ray dose was very high. "You can collect more science while you're going up through the levels of protection," Tanner says. "We've really fine-tuned it."

Forecasters anticipate a new solar maximum in 2012-2013, with plenty of sunspots and even more solar flares. "GOES-14 is ready," says Tanner.

For a great kid-level explanation of solar "indigestion" and space weather, check out spaceplace.nasa.gov/en/kids/goes/spaceweather.

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

Did You Know?

The moving parts of the 200-inch Hale telescope at Mount Palomar weigh 1 million pounds, yet it is driven by a 1/12th horsepower motor the size of a grapefruit.

Source: First Light, Richard Preston

Guest Speakers (Cont'd)

(Continued from page 3)

the discoveries of water on Mars, and how scientists made the discoveries.

Our final presentation for the 2009-2010 season is by Dr. Beth Willman, from Haverford College. She studies the least luminous galaxies in the Universe.

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

(Continued on page 18)

Fall 2009 CCAS Survey Results
by John Hepler, CCAS Webmaster & Newsletter Editor

At the beginning of August 2009, CCAS mailed out a questionnaire to society members asking them for their opinions on a wide range of subjects, covering everything from meeting attendance to astrophotography instruction. Based on the membership at the time, 65 surveys were mailed. Out of those, we received 30 responses, representing just under 50% of the membership (this is considered good for a survey). Below and on the following pages are the survey results in a graphical presentation and an interpretation of them.

1) CCAS has a strong direction and purpose?

Strongly Disagree — Strongly Agree

0	1	2	3	4	5	6	7	8	9
3%					7%	14%	28%	28%	20%

2) CCAS follows its purpose and direction.

Strongly Disagree — Strongly Agree

0	1	2	3	4	5	6	7	8	9
3%					7%	7%	33%	24%	17%

3) How many monthly Meetings did you attend last year? (Fall '08 – Spring '09)

0	1	2	3	4	5	6	7	8	9
24%	14%	14%	7%	10%	3%	10%		7%	10%

4) How many Community Out-reach or astronomy introduction programs did you attend last year? (Fall '08 – Spring '09) (If more than 12 choose 12)

0	1	2	3	4	5	6	7	8	9	10	11	12
57%	10%	7%	10%	3%	3%			3%				7%

5) How many Hercules Cluster meetings did you attend last year? (Fall '08 – Spring '09)

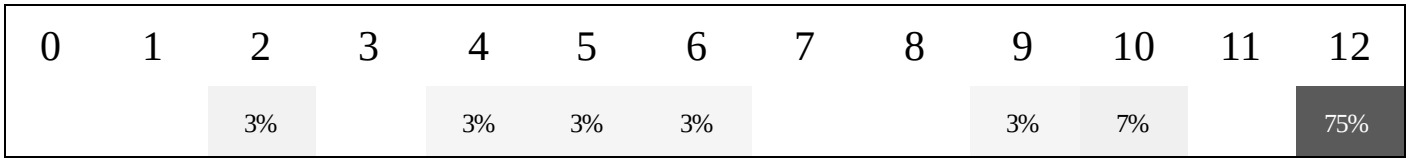
0	1	2	3	4	5	6	7	8	9	10	11	12
80%	10%	7%						3%				

Questions 1 & 2: Respondents feel that CCAS has a strong direction and purpose *and* follows them.

Question 3: Two-thirds of respondents attended 4 or less monthly meetings during the Fall '08—Spring '09 season.

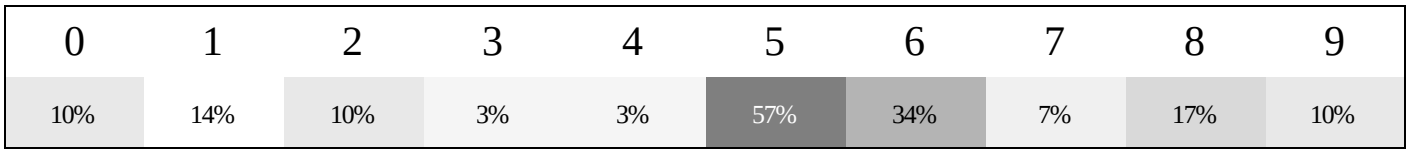
Fall 2009 CCAS Survey Results (Cont'd)

6) How often do you read the CCAS newsletter in a year?

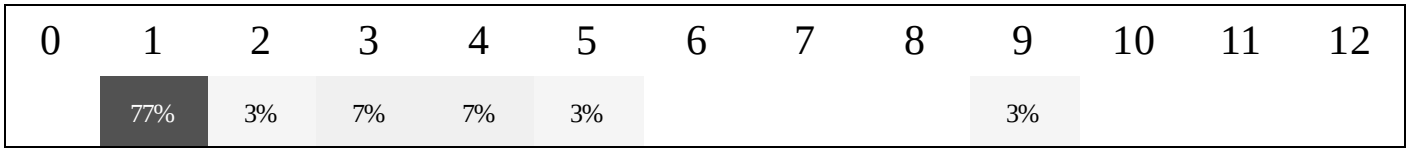


7) Do you use the published events to help plan your activities?

Seldom Often

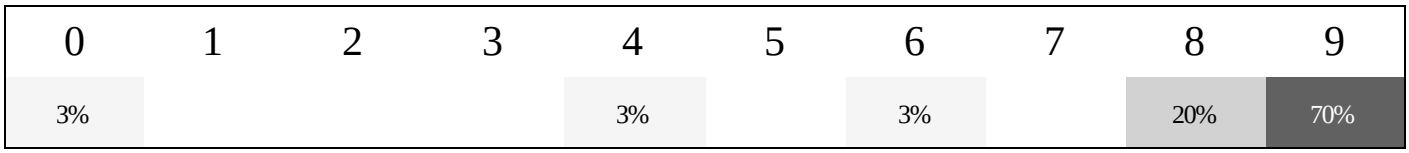


8) In **days**, about how often do you check your e-mail? (If you check it more than once a day, choose 1)
(If you don't use e-mail or check it less than once every 12 days, choose 12)



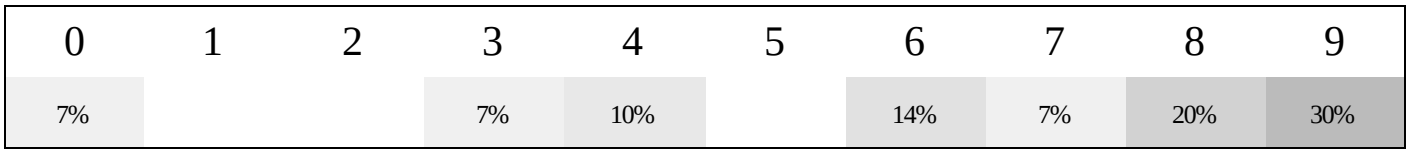
9) How do you feel about communicating by computer?

Difficult Easy



10) The Constellation of the Month program is useful and interesting

Disagree Agree



Questions 4 & 5: The majority of respondents did not participate in either community outreach/introductory astronomy classes or in Hercules Cluster observing sessions.

Questions 6 & 7: 75% of respondents read the newsletter monthly and a majority use the newsletter to plan participation in society activities.

Questions 8 & 9: The vast majority of users check e-mail at least once daily and find communicating via computer to be easy.

Question 10: A majority of respondents believe that the Constellation of the Month program is useful and interesting. *Based on that response, how about some more volunteers?*

Fall 2009 CCAS Survey Results (Cont'd)

11) How many Astronomical League observing clubs have you or are you participating in?

0	1	2	3	4	5	6	7	8	9
50%	27%		17%		3%	3%			

12) I would like the Monthly Speaker to Present first in the monthly agenda.

Disagree Agree

0	1	2	3	4	5	6	7	8	9
7%	7%	7%		3%	14%	3%	10%	17%	27%

13) I would like the Monthly Speaker to present last in the monthly agenda.

Disagree Agree

0	1	2	3	4	5	6	7	8	9
40%	14%	7%		3%	10%		3%	10%	

14) I would like to chair a CCAS committee.

Disagree Agree

0	1	2	3	4	5	6	7	8	9
34%	17%	7%	7%	7%	10%	7%	7%		

15) I would like to be a member of a CCAS committee.

Disagree Agree

0	1	2	3	4	5	6	7	8	9
14%	17%	3%	7%	3%	14%	3%	10%	10%	7%

Question 11: Half the respondents are not pursuing any AL observing awards; a little over a quarter of the respondents are at least pursuing one award.

Questions 12 & 13: The majority of respondents do not want the main speaker to present last during the monthly meetings. A slightly smaller majority of respondents want the main speaker to present first. *Does that leave the middle? Perhaps after small presentations or discussions on the latest astronomy-related news, but before the formal society business (chair updates, voting, elections, etc.)?*

Questions 14 & 15: The majority of respondents do not want to chair a committee, but the response to participating on a committee was more balanced across the scale.

Fall 2009 CCAS Survey Results (Cont'd)

16) CCAS has enough members to accomplish its purpose and direction.

Not enough — More than enough

0	1	2	3	4	5	6	7	8	9
10%		7%	3%	10%	34%	17%	7%	3%	3%

17) I would like CCAS membership to be larger.

Disagree — Agree

0	1	2	3	4	5	6	7	8	9
		3%	3%	7%	14%	24%	20%	14%	10%

18) How often did you attend the pre-meeting videos last year? (Fall '08 – Spring '09)

(Frequency of attendance)

0	1	2	3	4	5	6	7	8	9
40%	3%	14%	3%	7%	7%	3%	10%	7%	7%

19) For planning purposes does it help to know the subject of the videos before hand?

Not Helpful — Very Helpful

0	1	2	3	4	5	6	7	8	9
20%					3%	3%	30%	10%	24%

20) What decade does your age fall within? (i.e. if between 40 & 50 choose 4)

0	1	2	3	4	5	6	7	8	9
		3%	14%	17%	30%	17%	10%	27%	

Questions 16 & 17: The majority of respondents believe that CCAS has enough members to accomplish its purpose and direction, but a majority of respondents would like the society to have more members.

Questions 18 & 19: 40% of respondents did not attend any of the pre-meeting videos; the balance of respondents were across the board in the frequency of their attendance. For those that did attend, knowing the subject of the video in advance was important.

Question 20: The majority of respondents were in their 50's, while the next largest response came from those in their 80's.

Fall 2009 CCAS Survey Results (Cont'd)

21) How many optical instruments do you own?

0	1	2	3	4	5	6	7	8	9
3%	14%	30%	17%	3%	10%	10%	7%		7%

22) Would you like to learn basic astrophotography with simple equipment?

Not Interested Very Interested

0	1	2	3	4	5	6	7	8	9
10%	10%	10%	7%		3%	3%	17%	14%	20%

23) Would you like to learn advanced astrophotography with more complex equipment?

Not Interested Very Interested

0	1	2	3	4	5	6	7	8	9
17%	7%	7%	3%		17%	10%	14%	7%	14%

24) My knowledge of Astronomy is?

Minimal Extensive

0	1	2	3	4	5	6	7	8	9
		7%	24%	2 (7%)	30%	14%	10%	7%	3%

25) How likely would you be to attend three or more social events a year? (i.e. summer picnic, party, winter holiday gathering)

Not Likely Very Likely

0	1	2	3	4	5	6	7	8	9
	10%	10%	7%	3%	7%	10%	17%	20%	14%

Question 21: The majority of respondents own 1 to 3 optical instruments.

Questions 22 & 23: The majority of respondents are interested in learning about astrophotography, with a stronger response to learning at least basic astrophotography with simple equipment. Note that a third of respondents were not interested in learning about astrophotography at all.

Question 24: Respondents rated themselves as middling in their knowledge of astronomy.

Question 25: Response to participating in more social events was dilute across the scale, with a mild trend to being more likely to attend.

Fall 2009 CCAS Survey Results (Cont'd)

26) It would be a great idea to have an additional meeting geared to younger members.

Disagree Agree

0	1	2	3	4	5	6	7	8	9
3%	3%	3%	10%	3%	14%	17%	17%	10%	17%

27) How many CCAS observing sessions did you attend last year? (Fall '08 – Spring '09)

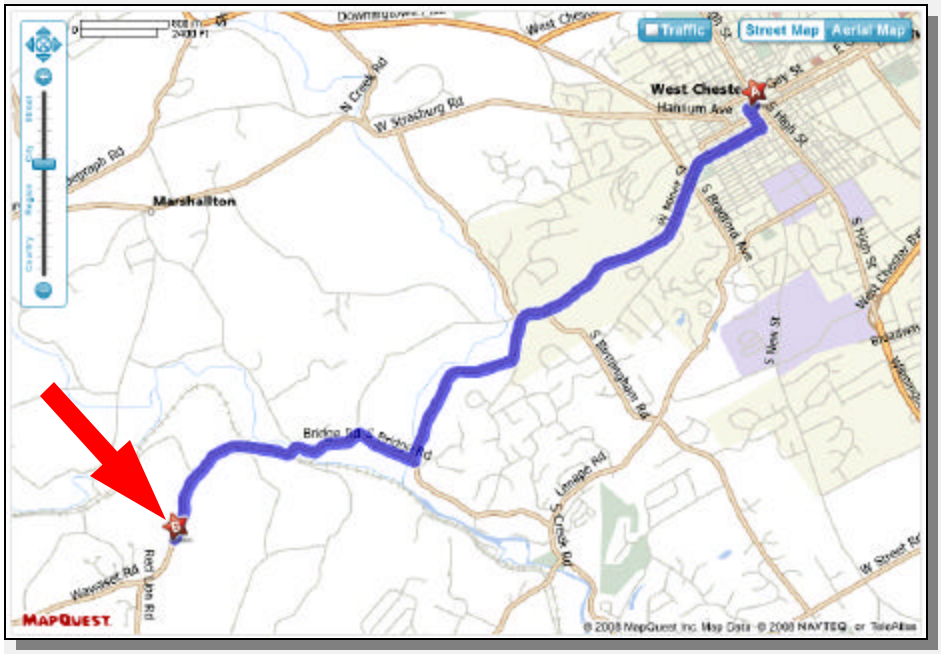
0	1	2	3	4	5	6	7	8	9
44%	14%	24%	7%		7%			3%	

Question 26: Once again, the response was dilute across the board, but with a stronger trend to agreeing with the idea to have meetings geared to younger members.

Question 27: The majority of respondents have participated in three or less observing sessions during the Fall '08—'09 season. Weather conditions play a factor in participating, respondents may have wanted to participate more but were prevented from doing so by unfavorable weather.

[Editor's Note: Converting to percentages and rounding to whole numbers slightly affects the response values. Some questions were left blank by several respondents, skewing values slightly as well. The final multiple choice question, concerning different ways of communicating with members, is not included as I did not have access to the response data.]

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 left off Route 842 into the parking lot by the office: look for the signs to the office along Route 842. From that parking lot, go left through the gate and drive up the farm lane about 800 feet to the top of the hill. The observing area is on the right.

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

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.

46th International Astronomical Youth Camp, IAYC 2010

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

The International Astronomical Youth Camp (IAYC) 2010 will take place in the small town of Klingenthal in the eastern Germany, from August 1st through the 21st, 2010.

Klingenthal (9,000 inhabitants) lies in the region called "Vogtland" which forms the geographical border between the two German federal states Bavaria and Saxony. The nearest large towns in the surrounding are Hof in Bavaria (45 km), Plauen in Saxony (30 km) and Karlovy Vary in the Czech Republic (40 km). The camp house itself will be a very pleasant youth hostel called "Jugendherberge Aschberg", right on the border with the Czech Republic (5 m).

Celebrating our 46th year in 2010, the IAYC is an international youth camp with participants from about 20 different countries. Participants work for three weeks in one of the 7 working groups - together with other young people - on astronomical projects. The projects vary from night-time observations to theoretical problems, depending on the participants' own interests. The working groups will be led by young scientists from the IAYC team.

IAYC 2010 will offer a wide range of working groups and topics, ranging from practical astronomy and basic theoretical astronomy over simulations in astronomy and electronic-robotronic engineering to high energy astrophysics, astrochemistry and not-so-introductory physics. There will be something for everyone from the complete beginner to the ambitious student.

As well as the astronomical program, there are many non-astronomical activities such as group games, sporting events, singing evenings, hiking tours and an excursion. 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.

Anyone from 16 to 24 years old and able to communicate in English may participate in the IAYC 2010. The fee for accommodation, full board and the whole program, including the excursion, will be € 620 (Euros), or approximately $855 (1 € = $0.68 as of 01/04/2010). However, early applications submitted before April 15th, 2010, receive a € 30 reduction, making the camp fee € 590. For interested persons who are not able to pay the camp fee themselves, a limited number of grants is available.

What is IAYC life like?

Observing at night and still catching enough sleep is only possible when you wake up late. Therefore, the IAYC day starts with breakfast at 12:00 noon. After breakfast, the first working group session takes place. What students do in this session depends on the working group they choose.

The working group session lasts

(Continued on page 17)

IAYC 2010 (Cont'd)

(Continued from page 16)

about two hours, and after that there is some free time. students can participate in one of the sport activities, learn how to develop photos, build and launch micro-rockets, sing in a choir, take a walk with friends, etc. If a student feels like organising something with other participants, great!

After dinner, it's NAP time. NAP stands for "Non-Astronomical Programme" and is made up of lots of group activities. The evening working group session takes place after NAP and lasts about two hours. Around midnight we have a light meal and afterwards, if the sky is clear, there is the opportunity to observe. This gives you an idea of what a normal day in the camp is like, but there are some exceptions. One day is reserved for a special NAP programme: the excursion day. Another day is a free day students can spend any way they want. They could go on a trip with some IAYC friends, catch up on some sleep, go hiking, etc.

Most of the astronomical activities in the camp take place in the working groups. There are seven working groups; each one has seven or eight participants and one leader who is responsible for the group. Each working group focuses on a different topic. Each member of the group works on his or her project, either alone or in groups of two or three. The group leader provide projects students can choose from.

The working group leaders help students if they encounter problems, but students should not expect an instructor-led classroom environment. At the end of the camp, each student writes a short report on the project he/she has worked on. All these reports are then collected and made into a book which is sent to participants after camp is over. The book makes a nice souvenir and a good way to know what everyone worked on during the camp.

Our observing sessions are mainly be focused on getting results for student projects rather than gathering observational data that can't be used in the camp. Of course there will be time for stargazing as a tourist too, for the fun of seeing the marvels of our universe. If participants are not experienced in observing they can learn from the leaders and other students. There will also be an introduction to observation and using telescopes in the beginning of the camp.

Detailed information about

IAYC 2010 will be made available later this month. If you have any questions or wish to be notified when more information becomes available, please contact:

Ondrej Urban
28 Oktobra 43/21
91101 Trencin
Slovakia

tel.: +421 903 885628
e-mail: info@iayc.org
website : http://www.iayc.org/

Page 16 Photo: Students & their Dobsonian mounted Newtonian reflector telescopes.

Page 17 Photos: (l. to r.) Students construct a reflector telescope; NGC 7000 by Hermann Gumpp; Group photo from 2007 camp.

CCAS Directions

West Chester University Campus

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

Guest Speakers (Cont'd)

(Continued from page 9)

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

If you have any suggestions for future speakers, or are interested in being a speaker yourself, please contact Dave Hockenberry at programs@ccas.us.

CCAS Membership Information and Society Financials

Treasurer's Report
by Bob Popovich

November 2009 Financial Summary

Beginning Balance	$1,657
Deposits	$210
Disbursements	$163
Ending Balance	$1,704

Welcome New Members!

This month we welcome Sunny Gupta, from Philadelphia, PA.

We're glad you decided to join us again 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.

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:

http://www.darksky.org

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

Dark-Sky Website for PA

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

http://www.POLCouncil.org

Find out about Lyme Disease!

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

http://www.LymePA.org

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

CCAS Event Information

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

Good Outdoor Lighting Websites

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

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**

http://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**

http://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**

http://www.skiesunlimited.net

★ ★ ★ ★ ★

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

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**

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:

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.

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:	Roger Taylor 610-430-7768
Vice Pres:	Kathy Buczynski 610-436-0821
ALCor and Treasurer:	Bob Popovich 484-467-5562
Secretary and Observing:	Don Knabb 610-436-5702
Librarian:	OPEN POSITION
Program:	Dave Hockenberry 610-558-4248
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: 484-467-5562
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.**