



Observations

A Monthly Publication Of The
CHESTER COUNTY ASTRONOMICAL SOCIETY

Vol. 20, No. 10

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

October 2012

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Solar Observing at Longwood Gardens



Solar observing at the "Display of Lights" event at Longwood Gardens, September 14th, 2012. Over 5,000 people attended the event that evening. For more info, see pg. 9.

Membership Renewals Due

10/2012	Hicks Sterrett
11/2012	Buczynski Hepler Holenstein O'Hara Taylor Zibinski
12/2012	Bogusch Franchi O'Leary Phipps Ramasamy

Important October 2012 Dates

- 8th** • Last Quarter Moon, 3:33 a.m.
- 15th** • New Moon, 8:03 a.m.
- 21st** • Orionid Meteor Shower Peaks
- 21st** • First Quarter Moon, 11:32 p.m.
- 29th** • Full Moon, 3:49 p.m.



CCAS Upcoming Nights Out

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

☼ **Saturday, October 13th** at Warwick Park. Private event for Boy Scout Pack #140 starts at 8:30 p.m.

☼ **Saturday, October 20th** is Fall Astronomy Day. The theme of Astronomy Day 2012 is "Bringing Astronomy to the People," CCAS Monthly Observing Session, Hoopes Park, West Chester. The observing session starts at sunset.

Autumn 2012 Society Events

October 2012

3rd • PA Outdoor Lighting Council monthly meeting, 1438 Shaner Drive, Pottstown, PA 19465, starting at 7:30 p.m. Meetings are open to the public. For more information and directions, visit the [PA Outdoor Lighting Council](#) website.

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

9th • CCAS Monthly Meeting, Room 113, Merion Science Center (former Boucher Building), West Chester University. The meeting starts at 7:30 p.m. Guest Speaker: Dr. Veronique Petit will present "Xray Astronomy and Magnetic Fields in Very Large Stars."

13th • The von Kármán Lecture Series: [Herschel Opens Up the Cool Universe](#), Jet Propulsion Laboratory, Pasadena, California. Live stream of free lecture presented by NASA & Caltech.

20th • [Fall Astronomy Day](#). The theme of Astronomy Day 2012 is "Bringing Astronomy to the People," CCAS Monthly Observing Session, Hoopes Park, West Chester. The observing session starts at sunset.

20th • Open call for articles and photographs for the November 2012 edition of [Observations](#).

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

November 2012

2nd • West Chester University Planetarium Show: "Dethroning Earth," in the Schmucker Science Building. The show starts at 7 p.m. and run approximately one hour in length. For more information and reservations, visit the planetarium's [webpage](#).

4th • Daylight Savings Time Ends - Set Clock Back 1 Hour.

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

8th • The von Kármán Lecture Series: [Exploring New Worlds with the Dawn Mission](#), Jet Propulsion Laboratory, Pasadena, California. Live stream of free lecture presented by NASA & Caltech.

13th • CCAS Monthly Meeting, Room 113, Merion Science Center (former Boucher Building), West Chester University. The meeting starts at 7:30 p.m. CCAS Member Speaker: Frank Angelini will present "the Trials, Tribulations, and Triumphs of Setting up a Home Observatory."

20th • [Fall Astronomy Day](#). The theme of Astronomy Day 2012 is "Bringing Astronomy to the People," CCAS Monthly Observing Session, Hoopes Park, West Chester. The observing session starts at sunset.

20th • Open call for articles and photographs for the November 2012 edition of [Observations](#).

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

Minutes from the September 11, 2012 CCAS Monthly Meeting by Ann Miller, CCAS Secretary

- The 2012-2013 schedule of CCAS lectures opened with an overwhelming success on September 11, 2012 with 74 members and guests in attendance.
- Dr. Derrick Pitts, chief astronomer of the Franklin Institute, was introduced by David Hockenberry. Dr. Pitts spoke on three topics: Curiosity Arrives at Mars, What's Happening in Space Exploration Today, and Amateur Astronomy-Dark Sky Preservation.
- Dr. Pitts also invited the club members and guests to join in two outreach programs associated with the Franklin Institute.
- First is a program called "Planetarium on the Parkway" on October 2, 2012 from 8:30p to 9:30pm done in conjunction with the "Open Air" light show on the Philadelphia Parkway. Dr. Pitts will be given control of the lights to use them to do a "planetarium show" of the night sky. He ask for amateur astronomers to bring their telescopes and binoculars to assist in showing the attendees the night sky.

(Continued on page 11)

Nicholas's Humor Corner by Nicholas La Para



Help with "Open Air"

by Kathy Buczynski, CCAS Education Chair

Many of you have heard about the Light Art project called "Open Air" on the Benjamin Franklin Parkway and the objection to it by environmentalists and astronomers.

http://www.huffingtonpost.com/2012/09/16/open-air-rafael-lozano-hemmer_n_1888159.html

The artist, Rafael Lozano-Hemmer, has met an objector in Chief Astronomer at the Franklin Institute, Derrick Pitts. Derrick has taken the lemons of "Open Air" and has made astronomical lemonade by turning the spotlights of the Parkway into an educational opportunity. The two have agreed that Derrick will be taking over the installation to point the spotlights at astronomical objects. Many of you heard Derrick talk about this when he spoke at our Sept 11th CCAS meeting.

http://articles.philly.com/2012-09-21/news/33978386_1_light-show-light-pollution-audrey-fischer

The original date of the "takeover" of the art project was to be Tuesday, Oct. 2 with a cloud date of Oct. 3. However, due to poor weather conditions this week, the date has been moved to Friday, October 12. The show starts at 8:00 but the educational portion starts at 8:30.

Derrick Pitts is asking for our help. In addition to controlling the lights, Derrick would like to see some telescopes on the Park-

October 2012 Guest Speaker

by Dave Hockenberry, CCAS Program Chair

Our next meeting will be held on October 9, 2012, starting at 7:30 p.m. The meeting will be held in Room 113, Merion Science Center (former Boucher Building), West Chester University. Our guest speaker is Dr. Veronique Petit, who will present "Xray Astronomy and Magnetic Fields in Very Large Stars."

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

We are looking for presenters for our Spring 2013 monthly sessions, please contact me at programs@ccas.us.

way for additional urban astronomical viewing. He is looking into getting permission for parking right on the Parkway so that equipment does not need to be hauled far.

I suggest the participants get there before 8:00 to set up and get ready. I will be going, weather permitting, and was wondering if anyone was interested in joining me. Please let me know so I can let Derrick know how many parking permits are needed. Contact me at education@ccas.us if you can make it.

Mars is Waiting

by Lydia Netzer

Most technological advances are actually just improvements. One thing builds on the next: from shoddy to serviceable, from helpful to amazing. First you had a carriage, then a car, and then an airplane; now you have a jet. You improve on what is there. Technological advances are like that.

Except for the one that involved landing on the Moon. When a human went and stood on the Moon and looked back at the Earth, that was a different kind of breakthrough. Nothing tangible changed when Neil Armstrong's foot dug into the lunar dust and his eyes turned back at us. We didn't get faster wheels or smaller machines or more effective medicine. But we changed, fundamentally. What had been unknown, was known. What had been unseen was seen. And our human horizon popped out a quarter million miles. Forever, we would see the Earth differently, because we had seen it from someplace truly foreign.

This is why Mars is important. When we get a human to Mars - in the next few decades, NASA has predicted -- our horizon will expand 1,000 times farther, and it will never go back.

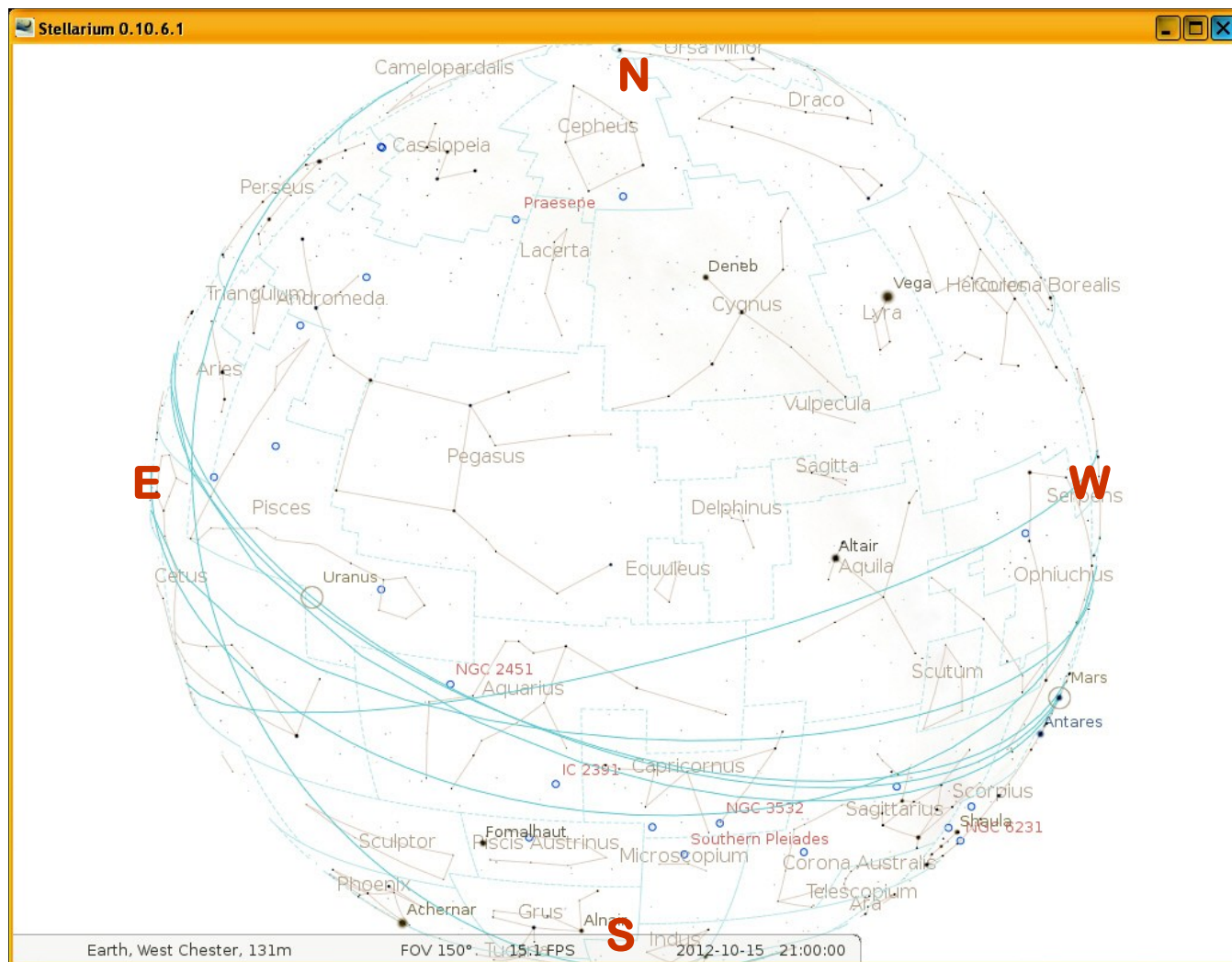
Watching the first images from the rover, Curiosity, which landed on Mars last month, I was reminded of a short story by Ray Bradbury called "Mars Is Heaven!" In it, Mars is populat-

(Continued on page 10)

The Sky Over Chester County

October 15, 2012 at 9:00 p.m. ET

Note: This screen capture is taken from Stellarium, the free planetarium software available for download at www.stellarium.org.



Date	Civil Twilight Begins	Sunrise	Sunset	Civil Twilight Ends	Length of Day
10/01/2012	6:30 a.m. EDT	6:57 a.m. EDT	6:42 p.m. EDT	7:09 p.m. EDT	11h 44m 49s
10/15/2012	6:44 a.m. EDT	7:12 a.m. EDT	6:20 p.m. EDT	6:48 p.m. EDT	11h 08m 50s
10/31/2012	7:01 a.m. EDT	7:29 a.m. EDT	5:59 p.m. EDT	6:27 p.m. EDT	10h 29m 51s

Moon Phases					
Last Quarter	10/08/2012	3:33 a.m. EDT	First Quarter	10/21/2012	11:32 p.m. EDT
New Moon	10/15/2012	8:03 a.m. EDT	Full Moon	10/29/2012	3:49 p.m. EDT

October 2012 Observing Highlights

by Don Knabb, CCAS Treasurer & Observing Chair

3	Venus and Regulus are very close in the pre-dawn sky
8	Last Quarter Moon, 3:33 a.m.
15	New Moon, 8:03 a.m.
21	The Orionid meteor shower peaks
21	First-quarter Moon, 11:32 p.m.
29	Full Moon, 3:49 p.m.

The best sights this month: Field trip announcement: On October 6th, the waning gibbous Moon will occult Jupiter in the morning sky; in Australia. The CCAS sub-orbital rocket ship will depart – oh, sorry, we cut the rocket ship from this year’s budget, never mind.

Closer to home, we can watch the Orionid meteor shower on October 21st for up to 30 “shooting stars” per hour. The Moon will have set by the time the shower reaches peak activity. I am also thrilled every October by the return of the Pleiades to the evening sky. I never tire of looking at these jewels of the night.

Mercury: Mercury is too close to the Sun to see during October.

Venus: Our sister planet continues to light up the pre-dawn sky, rising about 3 hours before the Sun. On October 3rd, Venus and Regulus are very close in the sky about an hour before the Sun rises. Two objects in the sky cannot get much closer without an occultation occurring.

Mars: The red planet sets about 2 hours after the Sun for the rest of the year. It is quite low in the sky just after darkness falls. On October 20th Mars is close to Antares, the red star in the constellation Scorpius. This is a great opportunity to compare their colors.

Jupiter: By the end of the month Jupiter is rising at the reasonable hour of 8 p.m. If you want to see it at its brightest, go outside in the morning before dawn and look straight up. The brightest object you see

directly overhead is Jupiter. Venus rising in the East is much brighter.

Saturn: The ringed planet is just about lost in the glare of the Sun as darkness falls, so you will need binoculars if you want to have one last glimpse at this planet before it disappears from the evening sky until next spring.

Uranus and Neptune: Both of these distant gas giants are well positioned for telescopic viewing just after the sky becomes fully dark. Sky maps to locate these planets can be found at skypub.com, the website of Sky and Telescope magazine.

The Moon: The Moon is full on October 29th. The October full Moon is the first full Moon after the Harvest Moon and it is called the Hunter’s Moon. The Hunter’s Moon is so named because plenty of moonlight is ideal for hunters shooting migrating birds in Northern Europe, and the name is also said to have been used by Native Americans as they tracked and killed their prey by autumn moonlight, stockpiling food for the winter ahead.

Constellations: During October we begin to lose the summer triangle and all the delights it holds, but here come the fall and winter treasures! The dim but huge Great Square of Pegasus dominates the southern sky and by 9:00 we can find the jewels of the night: the Pleiades, rising in the east. Stay up late and Taurus the Bull leads Orion the Hunter up from the eastern horizon.

Messier/deep sky: October is a great month to study the Andromeda galaxy, M31. This is the most distant object you can ever see without binoculars or a telescope to help, although you’ll need to go to a dark sky site to pick out its soft glow. It is many times further away than any star in the sky. It is so far away that the light you see as that fuzzy spot in the sky left Andromeda 2.5 million years ago! In Chester County skies we need to use binoculars or a telescope, but the view is still wonderful.

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Doing Science with a Spacecraft's Signal

by David Doody

Mariner 2 to Venus, the first interplanetary flight, was launched August 27 fifty years ago. This was a time when scientists were first learning that Venus might not harbor jungles under its thick atmosphere after all. A Russian scientist had discovered that atmosphere during the rare Venus transit of 1761, because of the effects of sunlight from behind.

Mariner 2 proved interplanetary flight was possible, and our ability to take close-up images of other planets would be richly rewarding in scientific return. But it also meant we could use the spacecraft itself as a “light” source, planting it behind an object of our choosing and making direct measurements.

Mariner 4 did the first occultation experiment of this sort when it passed behind Mars as seen from Earth in July 1965. But, instead of visible light from the Sun, this occultation experiment used the spacecraft's approximately 2-GHz radio signal.

The Mariner 4 experiment revealed Mars' thin atmosphere. Since then, successful radio science occultation experiments have been conducted at every planet and many large moons. And another one is on schedule to investigate Pluto and its companion Charon, when the New Horizons spacecraft flies by in July 2015. Also, during that fly-by, a different kind of radio science experiment will investigate the gravitational field.

The most recent radio science

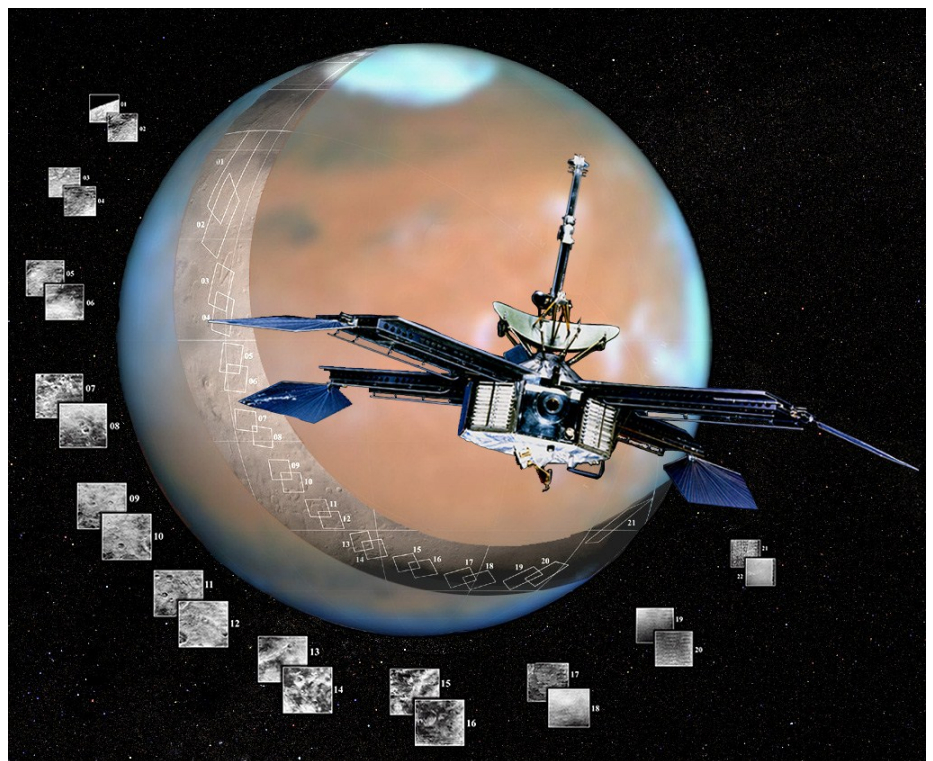


occultation experiment took place September 2, 2012, when the Cassini spacecraft carried its three transmitters behind Saturn. These three different frequencies are all kept precisely “in tune” with one another, based on a reference frequency sent from Earth. Compared to observations of the free space for calibration just before ingress to occultation, the experiment makes it possible to tease out a wide variety of components in Saturn's iono-

sphere and atmosphere.

Occultation experiments comprise only one of many categories of radio science experiments. Others include tests of General Relativity, studying the solar corona, mapping gravity fields, determining mass, and more. They all rely on NASA's Deep Space Network to capture the signals, which are then archived and studied.

Find out more about spacecraft science experiments in “Basics of Space Flight,” a website and book by this author, <http://www2.jpl.nasa.gov/basics>. Kids can learn all about NASA's Deep Space Network by playing the “Uplink-Downlink” game at <http://spaceplace.nasa.gov/dsn-game>.



In this poster art of Mariner 4, you can see the parabolic reflector atop the spacecraft bus. Like the reflector inside a flashlight, it sends a beam of electromagnetic energy in a particular direction. Credit: NASA/JPL/Corby Waste.

Through the Eyepiece: The Serpens-Ophiuchus Double Cluster (the “Other Double Cluster”)

by Don Knabb, CCAS Treasurer & Observing Chair

At nearly any summer or fall star party one of the favorite objects for observing in binoculars or a wide field telescopic view is the famous Double Cluster in Perseus. The Double Cluster is the common name for the naked-eye open clusters NGC 884 and NGC 869, which are close together in the constellation Perseus.

But this summer I became aware of another beautiful double cluster, the Serpens-Ophiuchus Double Cluster, or more easily called the S-O double cluster. This pair of open clusters is made up of IC4756 and NGC 6633.

I came across this pair of objects in the book *Summer Stargazing*, by Terence Dickinson. I was researching objects for a program that Barb and I presented at Hickory Run State Park that we called “Binocular Stargazing.” The idea of the program was that when most people go camping they carry a pair of binoculars, and many people are not aware that any pair of binoculars will reveal a host of beautiful objects in the sky. We had about 40 participants and the program was well received.

I could not find a good star chart that shows the S-O double cluster. The best I could do is the Stellarium screen capture below. IC 4756 and NGC 6633 are the two circles in the very center of the image. The double cluster is easy to find with binoculars if you scan between Ophiuchus and Aquila. On a very clear night with no Moon, both clusters can be glimpsed at the very edge of naked eye visibility.

IC 4756 has an apparent magnitude of 4.6 and lies about 1600 light years away. It is estimated to be 700 million years old. NGC 6633 was discovered in 1745 by Philippe Loys de Chéseaux and was independently rediscovered by Caroline Herschel, and been included in her brother's catalog as H VIII.72. This cluster is nearly as large as the full moon, and contains 30 stars which make it shine at a total magnitude of 4.6; the brightest star is of mag 7.6. Its age is estimated at 660 million years.

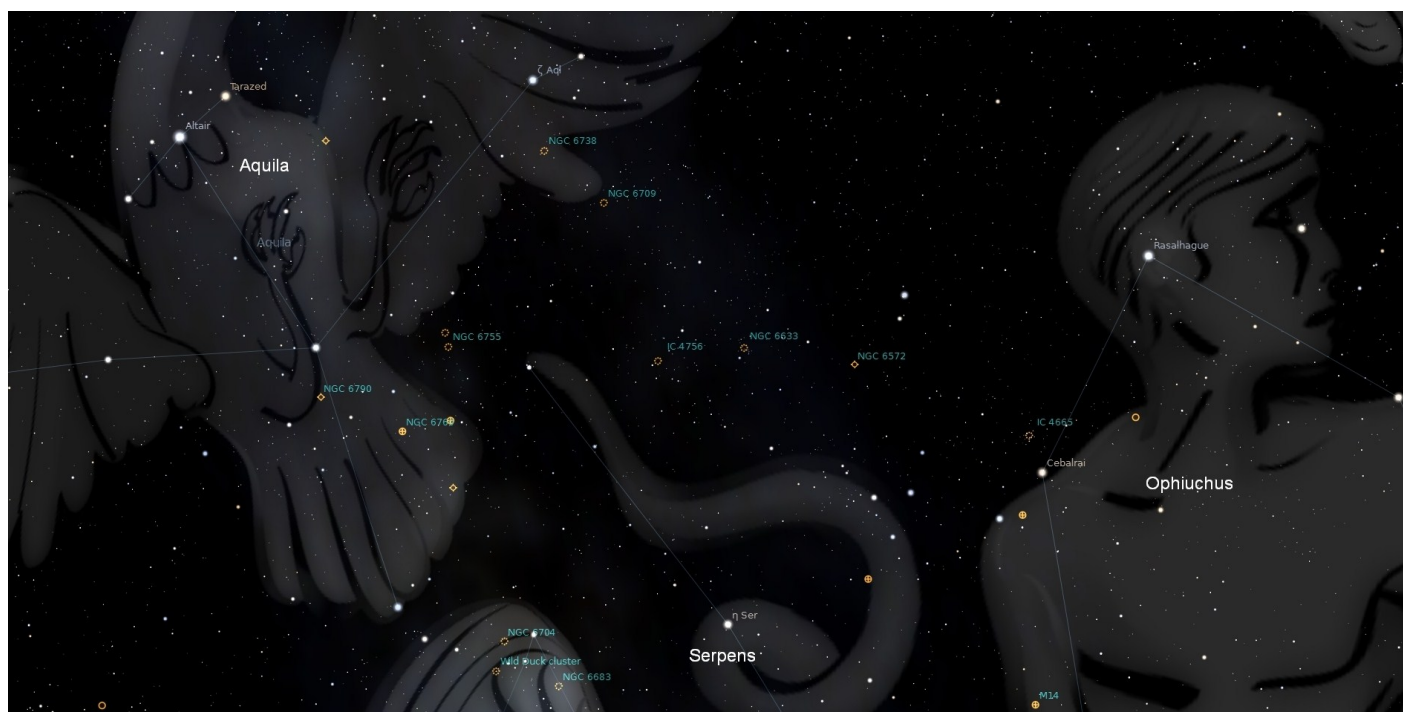
An open cluster is a group of up to a few thousand stars that were formed from the same giant molecular cloud and have roughly the same age. More

than 1,100 open clusters have been discovered within the Milky Way galaxy, and many more are thought to exist. They are loosely bound to each other by mutual gravitational attraction and become disrupted by close encounters with other clusters and clouds of gas as they orbit the galactic center.

Open clusters generally survive for a few hundred million years. In contrast, the more massive globular clusters of stars exert a stronger gravitational attraction on their members, and can survive for many billions of years.

Information credits:

- Dickinson, Terence 1996. *Summer Stargazing*. Firefly Books
- Stellarium planetarium software
- SkySafari Pro iPad app



The Serpens-Ophiuchus Double Cluster, image from Stellarium.org

Dr. Derrick Pitts Presents at CCAS

by Don Knabb

On September 11, 2012, Dr. Derrick Pitts, Chief Astronomer of the [Franklin Institute](http://www.franklininstitute.org), presented at our monthly meeting. There were approximately 74 attendees at the meeting, including CCAS members and the general public. Our Program Chair, Dave Hockenberry gave Dr. Pitts a wonderful, warm introduction, then Dr Pitts spoke from about 7:45 to 9:15, including some questions from the audience. He covered a wide range of topics, spending good bit of time on Mars, the NASA budget and our next steps into space.



"Display of Lights" Event at Longwood Gardens

by Don Knabb, CCAS Treasurer & Observing Chair

On Friday, September 14, 2012, CCAS participated in the "Display of Lights" event at Longwood Gardens in Kennett Square. It certainly ended up being one for the record books! 16 members came out to help with the event, and I am grateful to everyone who helped because we sure needed help. There were 5,000 people at Longwood on Friday evening according to the Longwood Security folks who transported our equipment to and from the observing area. I don't know how many stopped to speak with us and look through our telescopes and binoculars, but it had to be a good percentage of the crowd.

During the early hours of the event many people came by our table to ask about the telescopes and if we would be allowing people to look at the starry sky when it became dark. We said yes of course, then directed people to the solar telescopes. There were three solar telescopes and two "Sunspotters" from West Chester University set up and we enjoyed watching the Sun whenever it presented a clear image through the high clouds.

When darkness fell the crowd lined up at every scope, sometimes a dozen deep or more. I was with our large binoculars and I had not a moment of rest from around 8 to about 9:20 when the Longwood folks asked us to pack up our equipment. Even then we had to turn people

(Continued on page 11)



Upcoming Public Event at Haverford College

by Dave Hockenberry

CCAS members have been invited to and asked to participate in a special event at Haverford College on Thursday, October 25, 2012. The event is being hosted by Dr. Beth Willman, who many of our members remember giving a great presentation to CCAS 2 years ago on the smallest galaxies.

She has invited independent filmmaker and Director David Gaynes and visiting Yale Astronomer Nitya Kallivayalil to a hosted screening of the new 2012 documentary film "Saving Hubble." This event will take place starting at 7:00 PM in the Stokes Auditorium on the Haverford College Campus.

After the presentation there will be a star party in and around the Haverford College Strawbridge Observatory, and CCAS members have been asked to bring telescopes and help out with this event if the skies are clear. The program is free and open to the public.

Interested CCAS members can contact Dave Hockenberry (toxophilus1@verizon.net) or our Observing Chair Don Knabb. This looks to be a fun event and a great way for our Club to reach out to the academic community at Haverford.

Waiting (cont'd)

(Continued from page 3)

ed by aliens who fool visiting Earthlings into thinking they're in a familiar environment before murdering them. It's about how stupid nostalgia is, how it tricks us into wanting things that were never that great in the first place. What strikes me about the story is that, just over 60 years ago, someone could seriously write about aliens on Mars.

Can you imagine what it was like then? Mars was an impossible frontier; we wouldn't even have decent pictures of the planet until almost 20 years after the story was published. Now it reads like a fairy tale in which the moon is made of cheese, or the sun is a horse-drawn chariot bearing a god, or the stars move in crystal spheres around the sky. When humanity was in its infancy, we thought the universe revolved around us. Then, with Copernicus, we aged into heliocentrism, became aware we were one of a family of planets inside the walls of our house, the solar system. Nearby stars gather like a town, rotating through the galaxy, our country. Clusters are like continents. We realized in stages that we were very insignificant. And then, almost like grown-ups, we pulled our boots on and began to try to leave a significant mark anyway.

We don't get anywhere by staying home from Mars. By pushing our little mine carts around the earth and making speedier mine carts, by connecting long pipes



Daniel Marsula/Post-Gazette

to communicate with one another and then creating better pipes to shout down, louder ways to shout. All of our squabbles with other humans and all of our possessions here on earth, the things we make faster, easier, smaller, really mean very little. How could they, when the universe is so big? Significance is in science -- not the science that leads to better mine carts and more efficient shouting, but the science that leads to more ideas.

Remember Plato's allegory of the cave. In the cave, the people look at shadows moving on the wall. They watch the shadows move, and they think they're alive. What if they could go outside and see the sun? That's us, moving from the Earth to the Moon. That's Neil Armstrong, who died at the age of 82 last weekend, standing on the Moon and looking back at Earth.

The thing about the cave is, it's not just one cave. It's more

caves, and more, all nested within one another. The Moon was our first cave; Mars will be next. And then there will be another cave, and another.

When people scoff at sending humans to Mars and say that pictures of wheel marks on a red desert are not worth the trouble when there are so many things here at home that we could be spending money on, it makes me claustrophobic. It's as if we're trying, out of guilt or shame, to crawl back into the cave and watch the shadows on the wall. We're trying to stay children in our parents' house, knowing that the road leads to town, and then to another town. We're saying, "Look, we made a really great toilet that flushes itself! Remember that printing press? That was pretty neat. We even made pyramids -- those things are huge! Can't we just be happy with making a great toilet even greater? Do we really have to go to Mars?"

But Mars is waiting. It spins now outside our human reach. We must realize that the work of growing up is not something we can cut when the budget gets tight. It is mission critical, for the intellectual life of the species, for the future of humans, not to stagnate, not to wither, but to stretch, and reach, and always to expand.

Lydia Netzer is the author of the novel "Shine Shine Shine." She wrote this for The New York Times. This article appeared in the Pittsburgh Post-Gazette on September 2, 2012.

Observing (cont'd)

(Continued from page 5)

Comets: There are no bright comets in the sky during October. But, if you would like an observing challenge, look for Comet C/2011 Linear as it passes near the globular cluster M5 from October 4th to 8th. A sky chart is in the October issue of [Astronomy](#) magazine.

Meteor showers: The Orionid meteor shower peaks in the early morning hours of October 21st. You could see up to 30 "shooting stars" per hour. This is a good opportunity to see meteors since the Moon will be setting by the time the shower gets into full swing.

(Continued on page 12)

Longwood (cont'd)

(Continued from page 9)

away who wanted to have a look through our equipment. All the while, Roger's green laser danced across the sky as he pointed out the constellations.

I have never been at a CCAS star party where so many people had the opportunity to look at the night sky with us. Yes, the weather could have been better, but we were always able to see the brighter stars and clusters. I really don't know what everyone was aiming their scopes at since I was not able to leave my post due to the constant line of people.

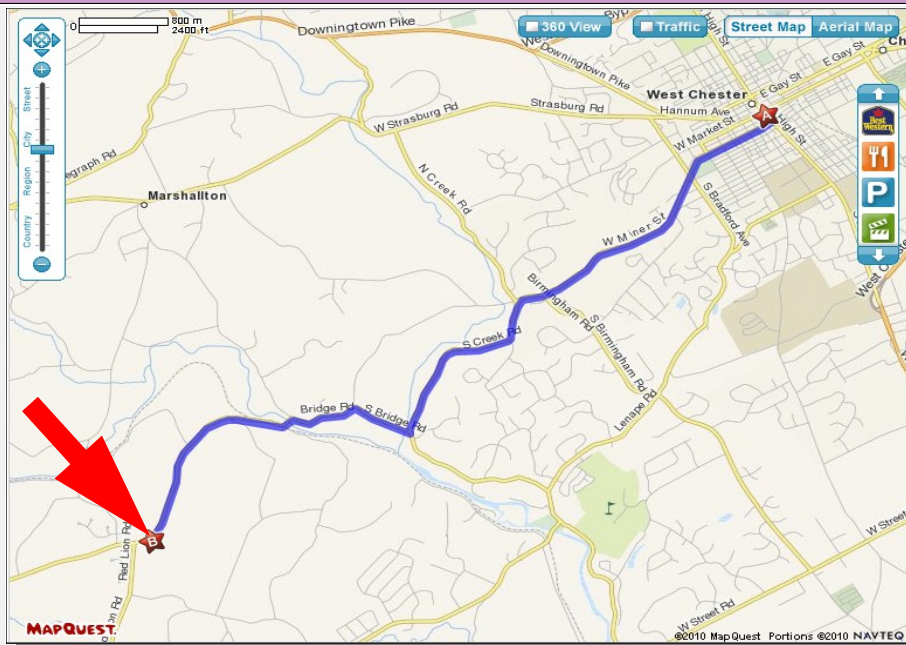
Thanks again to everyone who helped out with the event, it was an incredible success.

Minutes (cont'd)

(Continued from page 2)

- The second program that Dr. Pitts announced was a city wide astronomy outreach program that would pair amateur astronomers or astronomy clubs with community based organizations to show that you can "do astronomy where you live." He has ordered 800 Galileo telescopes and 60 Sunspotters to use in this program. If you are interested in this program contact Dr. Pitts at the Franklin Institute dpitts@fi.edu.
- The evening concluded with questions and photographs with Dr. Pitts.

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 February through November) are held at the Myrick Conservation Center of the Brandywine Valley Association.

To get to the Myrick Conservation Center from West Chester, go south on High Street in West Chester past the Courthouse. At the next traffic light, turn right on Miner Street, which is also PA Rt. 842. Follow Rt. 842 for about 6 miles. To get to the observing site at the BVA property, turn left off Route 842 into the parking lot by the office: look for the signs to the office along Route 842. From that parking lot, go left through the gate and drive up the farm lane about 800 feet to the top of the hill. The observing area is on the right.

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

CCAS Directions

West Chester University Campus

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



New Member Welcome!

Welcome new CCAS members John Conrad of West Chester; Raven Payne, Downingtown; Letitia Vence and Rafael Gonzalez, both from Coatesville; and David Toth from Phoenixville.

We're glad you decided to join us under the stars! Clear skies to you!



CCAS Membership Information and Society Financials

Treasurer's Report by Don Knabb

Aug 2012 Financial Summary

Beginning Balance	\$1,508
Deposits	\$298
Disbursements	\$457
Ending Balance	\$1,349

Observing (Cont'd)

(Continued from page 11)

Late in the month astronomers are predicting the possibility of fireballs from the Taurid meteor shower. This is an unpredictable shower, but keep looking up and you might be pleasantly surprised.

Membership Renewals

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

Don Knabb
988 Meadowview Lane
West Chester PA 19382

The current dues amounts are listed in the *CCAS Information Directory*. Consult the table of contents for the directory's page number in this month's edition of the newsletter.

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!



Light pollution from poor quality outdoor lighting wastes billions of dollars and vast quantities of valuable natural resources annually. It also robs us of our heritage of star-filled skies. Starry Night Lights is committed to fighting light pollution. The company offers the widest selection of ordinance compliant, night sky friendly and neighbor friendly outdoor lighting for your home or business. Starry Night Lights is located in Park City, Utah.

Phone: 877-604-7377
Fax: 877-313-2889

<http://www.starrynightlights.com>



Green Earth Lighting is a dedicated lifetime corporate member of the International Dark-Sky Association. GEL's products are designed to reduce or eliminate the negative effects outdoor lighting can have while still providing the light you need at night.

Green Earth Lighting LLC
620 Onion Creek Ranch Rd
Driftwood, Texas 78619

Phone: 512-944-7354

<http://www.greeneearthlighting.com>

Local Astronomy-Related Stores

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



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

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

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

<http://www.skiesunlimited.net>



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

4403 Main Street
Philadelphia, PA 19127

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

Hours:

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

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

CCAS Information Directory

CCAS Lending Telescopes

Contact Don Knabb to make arrangements to borrow one of the Society's lending telescopes. CCAS members can borrow a lending telescope for a month at a time; longer if no one else wants to borrow it after you. Don's phone number is 610-436-5702.

CCAS Lending Library

Contact our Librarian, Barb Knabb, to make arrangements to borrow one of the books in the CCAS lending library. Copies of the catalog are available at CCAS meetings, and on the CCAS website. Barb's phone number is 610-436-5702.

Contributing to *Observations*

Contributions of articles relating to astronomy and space exploration are always welcome. If you have a computer, and an Internet connection, you can attach the file to an e-mail message and send it to: newsletter@ccas.us

Or mail the contribution, typed or handwritten, to:

John Hepler
2115 Lazor St.
Apt. 227
Indiana, PA 15701

CCAS Newsletters via E-mail

You can receive the monthly newsletter (in full color!) via e-mail. All you need is a PC or Mac with an Internet e-mail connection. To get more information about how this works, send an e-mail request to John Hepler, the newsletter editor, at: newsletter@ccas.us.

CCAS Website

John Hepler is the Society's Webmaster. You can check out our Website at: <http://www.ccas.us>

John welcomes any additions to the site by Society members. The contributions can be of any astronomy subject or object, or can be related to space exploration. The only requirement is that it is your own work; no copyrighted material! Give your contributions to John Hepler at (724) 801-8789 or e-mail to webmaster@ccas.us

CCAS Purpose

The Chester County Astronomical Society was formed in September 1993, with the cooperation of West Chester University, as a non-profit organization dedicated to the education and enjoyment of astronomy for the general public. The Society holds meetings (with speakers) and observing sessions once a month. Anyone who is interested in astronomy or would like to learn about astronomy is welcome to attend meetings and become a member of the Society. The Society also provides telescopes and expertise for "nights out" for school, scout, and other civic groups.

CCAS Executive Committee

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

President:	Roger Taylor 610-430-7768
Vice President:	Liz Smith 610-842-1719
ALCor, Observing, and Treasurer:	Don Knabb 610-436-5702
Secretary:	Ann Miller 610-558-4248
Librarian:	Barb Knabb 610-436-5702
Program:	Dave Hockenberry 610-558-4248
Education:	Kathy Buczynski 610 -436-0821
Webmaster and Newsletter:	John Hepler 724-349-5981
Public Relations:	Deb Goldader 610-304-5303



CCAS Membership Information

The present membership rates are as follows:

REGULAR MEMBER.....	\$25/year
SENIOR MEMBER.....	\$10/year
STUDENT MEMBER.....	\$ 5/year
JUNIOR MEMBER.....	\$ 5/year
FAMILY MEMBER.....	\$35/year

Membership Renewals

Check the Membership Renewals on the front of each issue of *Observations* to see if it is time to renew. If you need to renew, you can mail your check, made out to "Chester County Astronomical Society," to:

Don Knabb
988 Meadowview Lane
West Chester PA 19382-2178

Phone: 610-436-5702

e-mail: treasurer@ccas.us

Sky & Telescope Magazine Group Rates

Subscriptions to this excellent periodical are available through the CCAS at a reduced price of **\$32.95**, much less than the newsstand price of \$66.00, and also cheaper than individual subscriptions (\$42.95)! Buying a subscription this way also gets you a 10% discount on other Sky Publishing merchandise.

To **start** a new subscription, make **sure** you make out the check to the **Chester County Astronomical Society**, note that it's for *Sky & Telescope*, and mail it to Don Knabb.

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 Don first at 610-436-5702.

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 Don Knabb**.