



# Observations

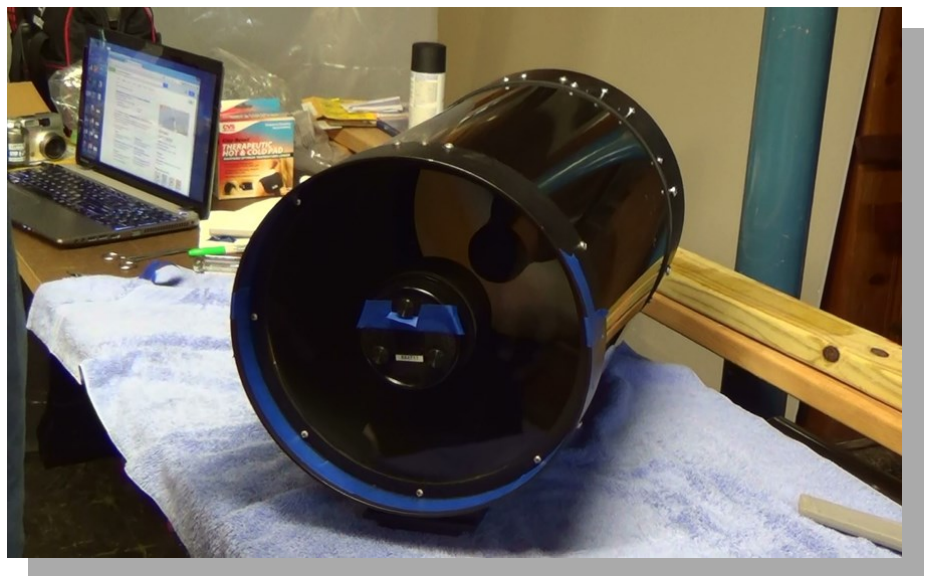
A Monthly Publication Of The  
CHESTER COUNTY ASTRONOMICAL SOCIETY

Vol. 22, No. 10 Two-Time Winner of the Astronomical League's Mabel Sterns Award ☼ 2006 & 2009 October 2014

## In This Issue

CCAS Autumn 2014 Events.....	2
September Meeting Minutes .....	2
Nicholas's Humor Corner .....	2
Movin' On Up .....	3
October 2014 Meeting Agenda .....	3
The Sky Over Chester County:	
October 2014.....	4
October 2014 Observing	
Highlights .....	5
Through the Eyepiece:	
The Pleiades: Jewels of the	
Night .....	8
NASA Space Place.....	10
CCAS Directions: Brandywine	
Valley Association.....	11
Membership Renewals .....	12
New Member Welcome .....	12
CCAS Directions:	
WCU Map.....	12
Treasurer's Report.....	12
CCAS Information	
Directory .....	13-14

## Movin' On Up



*OTA Taped for Corrector Alignment.  
For more information about Steve Leiden's experience upgrading  
from a Wedge to his first GoTo scope, see pg. 3.*

## Membership Renewals Due

10/2014	Rosenblatt & Family Toth Zandler
11/2014	Buczynski Cavanaugh Hepler Holenstein Sigler Smith
12/2014	Kurtis

## Important October 2014 Dates

- 1st** • First Quarter Moon, 3:33 p.m.
- 8th** • Full Moon, 6:51 a.m.
- 8th** • Total Lunar Eclipse, 7:26 a.m.
- 15th** • Last Quarter Moon, 3:12 p.m.
- 23rd** • Partial Solar Eclipse
- 23rd** • New Moon, 5:57 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 18, 2014.** CCAS special observing session at Anson Nixon Park, Kennett Square. The observing session is from 8:00 to 9:30 PM.
- ☼ **Saturday, November 22, 2014.** CCAS star party at Hoopes Park, West Chester. The observing session is from 7:00 to 9:00 PM.

## Autumn 2014 Society Events

### October 2014

**1st** • PA Outdoor Lighting Council monthly meeting, 1438 Shaner Drive, Pottstown, PA 19465, starting at 7:30 p.m. For more information and directions, visit the [PA Outdoor Lighting Council](#) website.

**4th** • [Autumn Astronomy Day](#). Learn more about Astronomy Day events by checking the web site of the Astronomical League.

**9th-10th** • The von Kármán Lecture Series: [Rosetta—A Lesson on Comets, the Solar System and Mysteries of Earth](#), at the Jet Propulsion Laboratory, Jet Propulsion Laboratory, Pasadena, California. Live stream of free lecture presented by NASA & Caltech.

**10th** • West Chester University Planetarium Show: "Our Milky Way Galaxy," in the Schmucker Science Building. The show starts at 7 p.m. and run approximately one hour. For more information, visit the [WCU Public Planetarium Shows](#) webpage.

**14th** • CCAS monthly meeting in Room 112, Merion Science Center, WCU. Meet & Greet over coffee and refreshments from 7:10 to 7:30 p.m. The meeting starts at 7:30 p.m. Guest Speaker: Dr. Rob Thornton, professor of Physics at West Chester University.

**18th** • CCAS Special Observing Session at Anson Nixon Park, Kennett Square. The observing session is from 8:00 to 9:30 PM.

**20th** • Open call for articles and photographs for the November 2014 edition of [Observations](#).

**26th** • Deadline for newsletter submissions for the November 2014 edition of [Observations](#).

### November 2014

**5th** • PA Outdoor Lighting Council monthly meeting, 1438 Shaner Drive, Pottstown, PA 19465, starting at 7:30 p.m. For more information and directions, visit the [PA Outdoor Lighting Council](#) website.

**6th-7th** • The von Kármán Lecture Series: [Asteroid Redirect Mission: Rearranging the Solar System](#), at the Jet Propulsion Laboratory, Jet Propulsion Laboratory, Pasadena, California. Live stream of free lecture presented by NASA & Caltech.

**11th** • CCAS monthly meeting in Room 112, Merion Science Center, WCU. Meet & Greet over coffee and refreshments from 7:10 to 7:30 p.m. The meeting starts at 7:30 p.m. Guest Speaker: Dr. Karen Schwarz, "Demonstration of the New WCU Planetarium."

**14th** • West Chester University Planetarium Show: "Men are from Mars," in the Schmucker Science Building. The show starts at 7 p.m. and run approximately one hour. For more information, visit the [WCU Public Planetarium Shows](#) webpage.

**20th** • Open call for articles and photographs for the December 2014 edition of [Observations](#).

**26th** • Deadline for newsletter submissions for the December 2014 edition of [Observations](#).

**27th** • CCAS star party at Nottingham County Park. The event is scheduled for 7:30 PM to 8:30 PM.

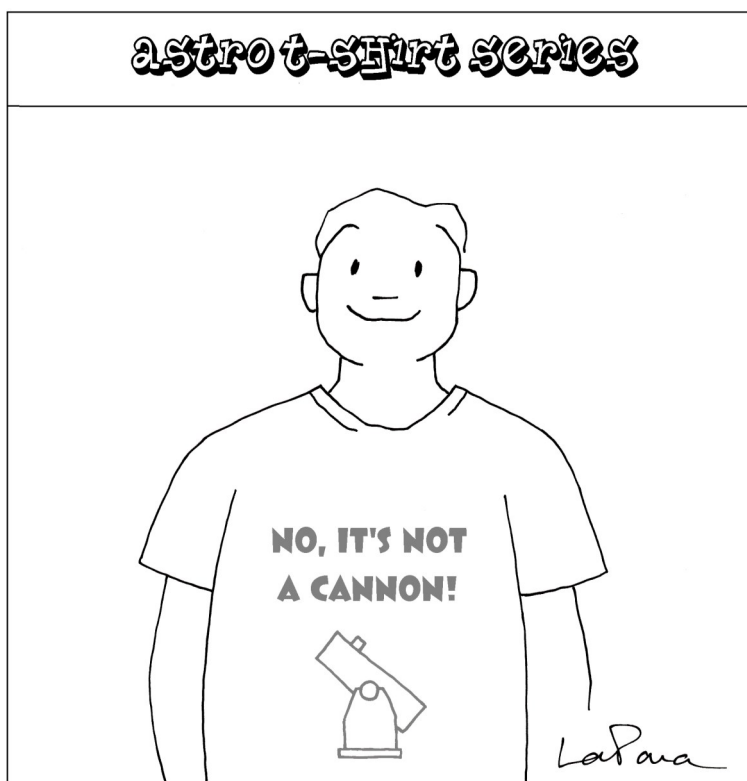
## Minutes from the September 9, 2014, Monthly Meeting

by Ann Miller, CCAS Secretary

- David Hockenberry welcomed 21 guests and members to the September 9, 2014 meeting of CCAS.
- Don Knabb, observing chairman, announced the following upcoming events:
  - Saturday, September 13, 2014-CCAS summer picnic at the home of Don and Barb Knabb
  - Friday, September 26-CCAS observing session at BVA
  - Saturday, September 27-Star Party at Nottingham Park
  - Saturday, October 18-Star Party at Anson Nixon Park in Kennett Square, PA
  - Saturday, November 22-Star Party at Hoopes Park in West Chester, PA
- Don Knabb presented a Stellarium tour of the September sky. Highlights for the month include Uranus seen at Magnitude 6.
- Dave Hockenberry introduced our guest speaker for the evening, Dr. Jamie Holder from the University of Delaware. Dr. Holder presented "Veritas/Gamma Ray Astronomy-Exploring the Extreme Universe with Veritas Observatory."

## Nicholas's Humor Corner

by Nicholas La Para



## Movin' on Up (Converting from Wedge to GEM)

by CCAS Member Steve Leiden



Figure 1. Before - Celestron Ultima 11 Heavy Duty Wedge Mount

Analogous to moving up socially as in the popular theme song to the “Jeffersons” TV show, last fall the time came to set

aside the Celestron Deluxe Heavy Duty mount with analog setting circles and sans any dec-

ination motor and move on up to my first GoTo scope.

After looking at several GEMs, on the I-net, I selected a candidate the Celestron CGE Pro. Seeking some opinions from the SCT-user community moderated by (Uncle) Rod Mollise, I fired off an email and asked was the CGE Pro a good PORTABLE mount for a GoTo scope. The quick reply came from Rod and others that the smart money said, in no uncertain terms, that the CGE Pro was TOO HEAVY and not a portable mount especially for those of us that have passed the 60 year mark. Their counter recommendation was to consider the CGEM or the CGEM DX. The CGEM DX is a beefed up version of the CGEM mount stiffened to be able to handle a 14 inch OTA. Both have computerized GoTo capability and will easily handle my

*(Continued on page 6)*

## October 2014 CCAS Meeting Agenda

by Dave Hockenberry, CCAS Program Chair

Our next meeting will be held on October 14, 2014, starting at 7:30 p.m. The meeting will be held in Room 112, Merion Science Center (former Boucher Building), West Chester University. Our guest speaker will be Dr. Rob Thornton, professor of Physics at West Chester University.

Please note that inclement weather or changes in speakers' schedules may affect the pro-



Dr. Rob Thornton

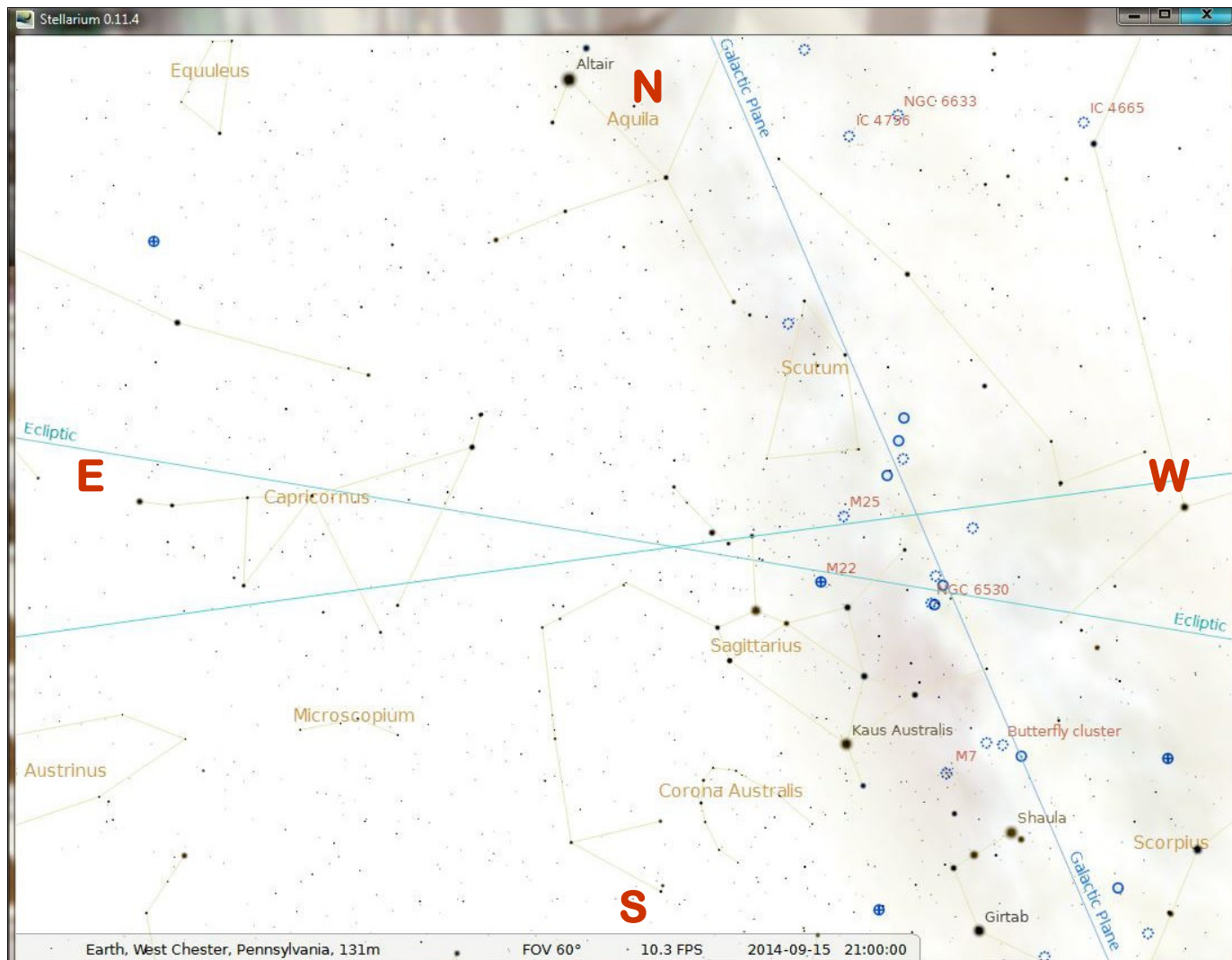
gram. In the event there is a change, CCAS members will be notified via e-mail with as much advance notice as possible.

We are looking for presenters for future meetings in our 2015 season. If you are interested in presenting, or know someone who would like to participate, please contact me at [programs@ccas.us](mailto:programs@ccas.us).

# The Sky Over Chester County

October 15, 2014 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](http://www.stellarium.org).



Date	Civil Twilight Begins	Sunrise	Sunset	Civil Twilight Ends	Length of Day
10/01/2014	6:30 a.m. EDT	6:57 a.m. EST	7:43 p.m. EDT	7:10 p.m. EST	11h 46m 05s
10/15/2014	6:44 a.m. EDT	7:11 a.m. EDT	6:21 p.m. EDT	6:48 p.m. EDT	11h 10 m 04s
10/31/2014	7:01 a.m. EDT	7:29 a.m. EDT	6:00 p.m. EDT	6:28 p.m. EDT	10h 30m 58s

### Moon Phases

First Quarter	10/01/2014	3:33 p.m. EDT	Full Moon	10/08/2014	6:51 a.m. EDT
Last Quarter	10/15/2014	3:12 p.m. EDT	New Moon	10/23/2014	5:57 p.m. EDT
First Quarter	10/30/2014	10:49 p.m. EDT			

## October 2014 Observing Highlights

by Don Knabb, CCAS Treasurer & Observing Chair

1	First Quarter Moon
7	Uranus is at opposition
8	Full Moon and total lunar eclipse
15	Last Quarter Moon
17	The Lunar X is visible
19	Comet Siding Spring is near Mars
21	Orionid Meteor shower peaks
23	New Moon and partial solar eclipse
30	First Quarter Moon

**The best sights this month:** The Moon rules October! On the 8<sup>th</sup> we can see part of a total lunar eclipse, then on the 17<sup>th</sup> we can view the Lunar X, and finally on the 23<sup>rd</sup> we can catch the beginning of a partial solar eclipse. October is a great month for lunatics!

**Mercury:** Mercury can be seen just before dawn at the end of October.

**Venus:** Our sister planet passes behind the Sun on October 25<sup>th</sup>. Thus this is not a good month to observe Venus, but it will reappear low in the west just after sunset in late November.

**Mars:** The red planet sets about 3 hours after sunset during October. On October 19<sup>th</sup>, faint Comet Siding Spring is about 2 degrees away from Mars in the evening sky.

**Jupiter:** The king of the planets rises around 1 a.m. by the end of October and will be high in the sky as dawn approaches.

**Saturn:** The ringed beauty begins the month only 10 degrees above the horizon an hour after sunset and disappears into the glow of the sunset by month's end. Saturn filled the eyepiece of my telescope many times this summer, but alas it is time to

say goodbye for a few months.

**Uranus and Neptune:** Uranus reaches opposition on October 7<sup>th</sup> and is therefore visible all night. Neptune rises about 2 hours before Uranus.

**The Moon:** Full Moon occurs on October 8<sup>th</sup>. This full Moon is often referred to as the Full Hunter's Moon, Blood Moon, or Sanguine Moon. Many moons ago, Native Americans named this bright moon for obvious reasons. The leaves are falling from trees, the deer are fattened, and it's time to begin storing up meat for the long winter ahead. Because the fields were traditionally reaped in late September or early October, hunters could easily see fox and other animals that come out to glean from the fallen grains. Probably because of the threat of winter looming close, the Hunter's Moon is generally accorded with special honor, historically serving as an important feast day in both Western Europe and among many Native American tribes.

We can see the start of a total lunar eclipse when the Earth is between the Sun and the Moon just before dawn on October 8<sup>th</sup>. The event begins at 5:15 a.m. and total eclipse is reached at 6:25 a.m., lasting until 7:24 a.m. But the Moon will set at 7:08 a.m. so we'll only have a brief look at totality.

About two weeks later the Moon is between the Earth and the Sun causing a partial solar eclipse. Once again we are on the edge of this event and will just get a glimpse of the partial eclipse just before sunset on October 23<sup>rd</sup>. **Remember – you can never look directly at the Sun without a safe solar filter!**

**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.

*(Continued on page 9)*

## Movin' On Up (Cont'd)

*(Continued from page 3)*

Ultima 11 inch SCT OTA. So with credit card in hand, a call went out to OPT for the CGEM DX mount (price on Celestron site was the same as Opt). To facilitate the conversion from the wedge to the GEM mount, I needed a dovetail plate to attach the OTA to the mount head. The order was placed for the following:

- Celestron CGEM DX (Deluxe) mount
- Losmandy ADM "D" Series C11 Dovetail Plate
- Celestron SkySync GPS – All Scope GoTo Models.

The last item was in the "go-for-the gold" mindset.

On December 21, 2013, I received my new mount considered to be a Christmas present and advanced retirement present. But alas, it is Christmas and the conversion will have to wait. So with my hand truck, I carted all the boxes around to my basement door in the back of the house and stored the mount and accessories for a later time.

### First Contact

After Christmas, on New Years Eve, I decided to see what I had received, and especially why two of the larger boxes were so HEAVY. When I opened the box with the mount, a quick tug on the mount head told me quickly that this was no kid's toy. The mount was packed very



*Figure 2. Tub Carts for transport*

well and practically buried in Styrofoam. At first I couldn't get it out of the packing so I went to the manual to understand how it was packed. It became clear that the RA and Dec bearings were locked in place. This was necessary for safe shipping, it also turns out to be better for handling too. As with any major project I embark upon at home, it's not true blue unless I draw blood. This was to be no exception. I decided to partially set up the mount in the basement to set my sights on my future. After setting up the tripod, I managed to get the mount out of the box and felt how HEAVY it was and realized that it can hurt me. While handling the counterweight bar nut (weighing about 3 pounds on its own), it slipped through my fingers and fell on my right foot. Although I didn't

go to any medical facility, I severely bruised two toes. I bet they were probably crushed. With this, I decided time to end first contact realizing that I needed a good plan for storage, transport from storage, set up and transport back to storage.

- January – final month of work, prep for retirement;
- Feb – retire, shovel snow;
- March – Taxes,
- April/May/June – house renovation;
- July – Janice's birthday;
- August – Don't remember;
- early Sept. – vacation.

### NOW It's Time

In April, I had a brief discussion with a friend with access to a lightweight machine shop about

*(Continued on page 7)*

## Movin' On Up (Cont'd)

*(Continued from page 6)*

my first plan for mount transport – a dedicated aluminum hand truck with an aluminum closeable box. I was convinced by my friend that my first plan to construct a box and attach to the hand truck for transport was going to be an expensive and HEAVY proposition. So during July and August, I settled in on Tub carts for transport. Purchasing two carts, bolting on the legs per a reco from the I-net and lining with heavyweight foam. The handtruck was assigned to the tripod for transport. I needed a ramp and a neighbor happened to have a couple of 2X8X10 with ramp heads on them.

### OTA Conversion

On August 29<sup>th</sup> I began the conversion of the OTA from the Fork Mount to the Losmandy Dovetail. Initially, during this mount conversion I considered removing and cleaning the corrector plate. In the “if it ain't broke don't fix it” mindset decided not to do this.

The OTA conversion was fairly straightforward with removing 4 screws that attached the fork to the OTA and then sliding the Fork with the drive (that had showed signs of end-of-life) away from the OTA. Time to install the dovetail bar. This would prove to be straightforward, with the only hitch being that there were no instructions.



*Figure 4. CGEM DX Configuration with GPS*

Although seemingly simple, the fact that the screw threading was different between the front OTA screw holes and the back OTA holes led to some trial and error checking each screw. The screws in the back of the OTA were identified quickly even though somewhat by chance. For the front screws, seemed no matter which screws I tried, nothing seemed to fit. With a more methodical approach, I finally got the right front screws identified, so on went the dovetail. During the screw trials, some small metal shavings fell into the OTA, especially one sizable one. Of course, now this meant that I had to remove the corrector plate. Might as well clean it too. This

was done reasonably simpler than I ever imagined, doing so without removing the secondary mirror housing, and using blue painters tape to keep the plate properly aligned.

### First Light

On Sept 16, I set my sights on a forecasted clear night for Wednesday the 17<sup>th</sup>. I screwed a guard on the ramps for better control of the carts and began early in the day with plenty of daylight. Walking the carts up my backyard to the ramps (good exercise for the legs). The setup steps in the manual start with aligning the leading leg of the tripod facing north, then screwing on the head adapter on top of that and then placing the mount head on top. With the cart approach this turned out to be a cinch. Ergonomically this is about the best for portability. The mount is on the top of the cart so the pickup is from the waist height to the tripod top, maybe a foot higher. It didn't seem anywhere near as heavy done in this way. Then, of course, from the tripod back to the cart. I guess you could say a little downhill. Since the cart is wheeled right up to the tripod, it makes this really easy minimizing any walking with a heavy load. After fully assembled, I stepped back in admiration, only to realize something quite awry.

*(Continued on page 9)*

## Through the Eyepiece: The Pleiades, Jewels of the Night!

by Don Knabb, CCAS Treasurer & Observing Chair



Picture source: [http://en.wikipedia.org/wiki/Image:Pleiades\\_large.jpg](http://en.wikipedia.org/wiki/Image:Pleiades_large.jpg)

This month the “Eyepiece” is a set of binoculars. The subject of this article covers too much sky to be seen in most telescopes. But I don’t mind setting my telescope aside at this time of the year. As the end of October nears I look forward to crisp, clear nights that are not too cold for a good observing session. One of the many sights I look forward to is M45, the Pleiades.

The Pleiades is an open cluster in the constellation of Taurus, but I think of them as an object of their own. It is among the nearest

to Earth of all open clusters and has been observed since ancient times. No wonder, they are indeed the jewels of the night sky.

The Pleiades are mentioned three times in the Bible, in Homer’s *Iliad* and *Odyssey* and were known to Australian Aborigines and the Sioux of North America. The Pleiades are a true cluster, not a chance alignment of stars near and distant. But you had better hurry and study these gems since astronomers estimate that after about 250 million years the cluster will have dispersed

due to gravitational interactions with the spiral arms of the galaxy and giant molecular clouds. The Pleiades also carries the name “The Seven Sisters” but only 6 stars stand out under Chester County skies if you have good vision. I immediately grab my binoculars for the best view of this cluster. The total star count in the cluster is estimated at 500 mostly faint stars that spread out over a piece of sky four times the diameter of the Moon.

(Continued on page 12)



## Moving On Up (Cont'd)

It turns out what Celestron meant by the leading leg facing north and what I thought they meant were 180 degrees apart. Tear it down and redo.

By daylight checking the optics with some distant trees, I found as I had thought that the corrector plate was rotated just slightly off alignment. So after loosening the screws, I was able to make a slight adjustment that brought out the leaf details nicely. I figured that would be the best I could do until nightfall and I could work with the stars. That night and after a small collimation tweak, the stars were beautiful pin points (the dimmer ones, e.g. Polaris' companion), I felt the optics were just perfect.

At this point I felt victory was mine for this battle. So I decided to give it a Go(To). The first attempt at Two Star alignment proved a challenge when the list of stars to select had only one name familiar to me, Vega. I aligned to Vega (not exactly following the book – after all it was dark by then). I then chose a star vaguely familiar to me and when the mount stopped slewing, the telescope may have been pointing in one of my neighbor's bedroom windows. I didn't look, and started all over again. Vega, then Rasalgethi. I think I actually pointed the scope to Rasalhague and aligned. When I selected GoTo M13, it was off by several degrees. Another Two Star Align and then tried the second GoTo

M13 was again off by several degrees. With a couple more attempts at the Two Star alignment, I was pleased to see the Ring Nebula in the eyepiece when selected for GoTo. Did I mention that the sky was about 50% clouded over during these alignments? I typically had to wait 5 minutes or so for an opening on a selected star. Suffice it to say that I now have a lot of learning curve for the Two Star alignment to go through. Transporting the equipment back to storage was lovely since it was all downhill.

### Second Light

Since I needed a picture of the CGEM DX set-up, I set my sights on Monday Sept 22, having seen the forecast in the West Chester Clear Sky Chart for better than average transparency and a cloud free sky. Well of course on Monday the conditions just plain deteriorated leaving me again with partially clear skies. I completed the Two star Alignment and added two calibration stars (seems like a four star alignment to me). Scanning the clear spots among the clouds, it looked like M10 might just be visible so I commanded GoTo M10, voila' sure enough right in the eyepiece. SUCCESS.

The night continued and the eventual take over 2 hours was: M13 (several takes), M57, M27, M29, M15, M57 (tracked solid for at least 5 min), M39 and finally Neptune. M15 and M57

were auto-located well inside the eyepiece FOV using a 16mm Nagler and 2X barlow (220X including the 6.3 Reducer/Corrector). And get this, I have motorized control of RA and Dec in the palm of my hand – amazing.

Well closing for now, future looks bright and the CGEM DX can handle a 14 inch OTA – hmmm.

## Observing (Cont'd)

*(Continued from page 5)*

**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.

**Comets:** Comet Siding Spring will pass only 81,000 miles from Mars on October 19<sup>th</sup>. That puts it within 2 degrees from our point of view. The closest approach is at 3 p.m., so look for this fuzzy traveler from the outer solar system as soon as it is fully dark. You'll need a fairly dark

*(Continued on page 11)*

## Twinkle, Twinkle, Variable Star

by Dr. Ethan Siegel

As bright and steady as they appear, the stars in our sky won't shine forever. The steady brilliance of these sources of light is powered by a tumultuous interior, where nuclear processes fuse light elements and isotopes into heavier ones. Because the heavier nuclei up to iron (Fe), have a greater binding energies-per-nucleon, each reaction results in a slight reduction of the star's mass, converting it into energy via Einstein's famous equation relating changes in mass and energy output,  $E = mc^2$ . Over timescales of tens of thousands of years, that energy migrates to the star's photosphere, where it's emitted out into the universe as starlight.

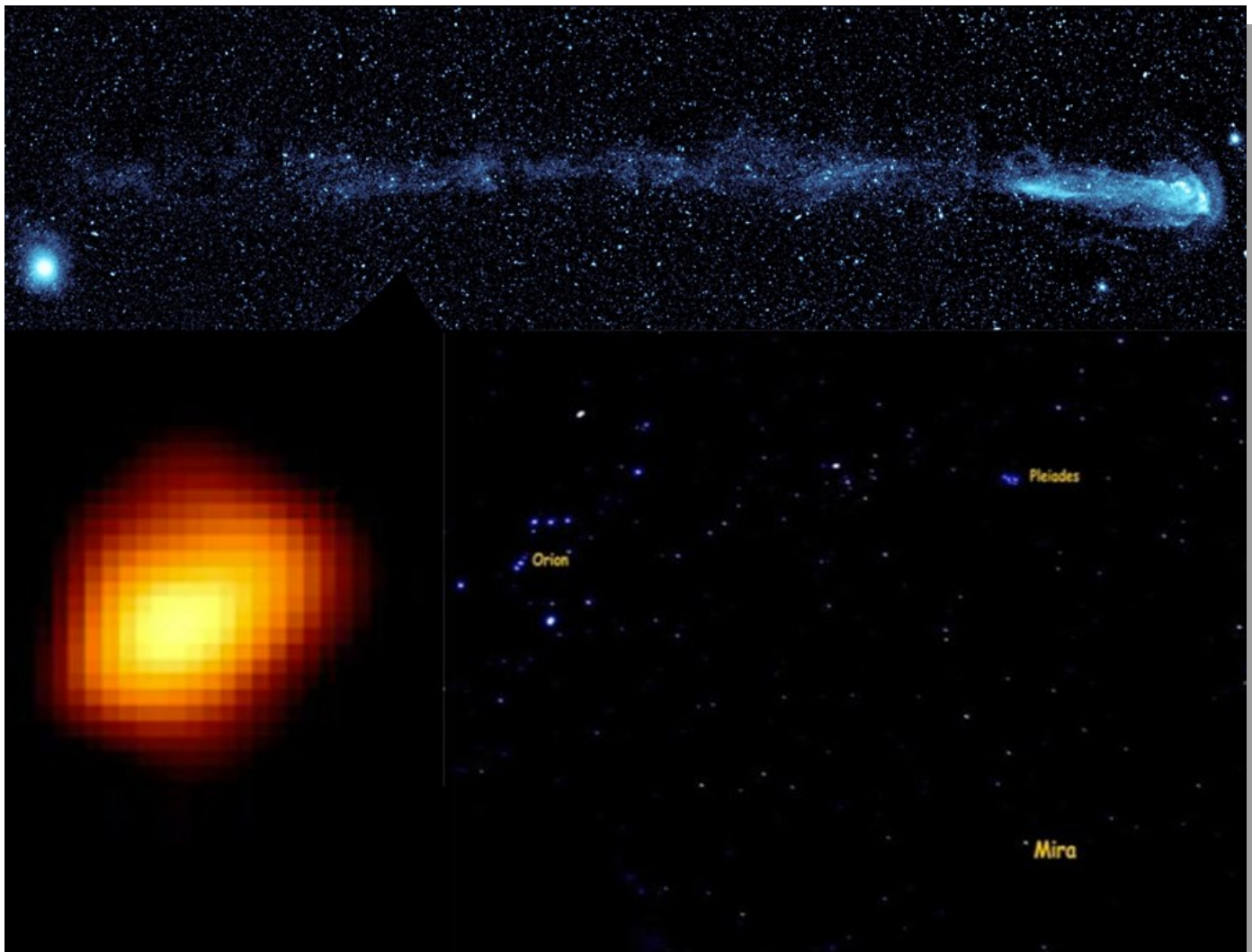


There's only a finite amount of fuel in there, and when stars run out, the interior contracts and heats up, often enabling heavier elements to burn at even higher temperatures, and causing sun-like stars to grow into red giants. Even

though the cores of both hydrogen-burning and helium-burning stars have consistent, steady energy outputs, our sun's overall brightness varies by just ~0.1%, while red giants can have their brightness's vary by factors of thousands or more over the course of a single year! In fact, the first periodic or pulsating variable star ever discovered—Mira (omicron Ceti)—behaves exactly in this way.

There are many types of variable stars, including Cepheids, RR Lyrae, cataclysmic variables and more, but it's the

*(Continued on page 11)*



Images credit: NASA's Galaxy Evolution Explorer (GALEX) spacecraft, of Mira and its tail in UV light (top); Margarita Karovska (Harvard-Smithsonian CfA) / NASA's Hubble Space Telescope image of Mira, with the distortions revealing the presence of a binary companion (lower left); public domain image of Orion, the Pleiades and Mira (near maximum brightness) by Brock-en Inaglory of Wikimedia Commons under CC-BY-SA-3.0 (lower right).

## Space Place (cont'd)

(Continued from page 10)

Mira-type variables that give us a glimpse into our Sun's likely future. In general, the cores of stars burn through their fuel in a very consistent fashion, but in the case of pulsating variable stars the outer layers of stellar atmospheres vary. Initially heating up and expanding, they overshoot equilibrium, reach a maximum size, cool, then often forming neutral molecules that behave as light-blocking dust, with the dust then falling back to the star, ionizing and starting the whole process over again. This temporarily neutral dust absorbs the visible light from the star and re-emits it, but as infrared radiation, which is invisible to our eyes. In the case of Mira (and many red giants), it's Titanium Monoxide (TiO) that causes it to dim so severely, from a maximum magnitude of +2 or +3 (clearly visible to the naked eye) to a minimum of +9 or +10, requiring a telescope (and an experienced observer) to find!

Visible in the constellation of Cetus during the fall-and-winter from the Northern Hemisphere, Mira is presently at magnitude +7 and headed towards its minimum, but will reach its maximum brightness again in May of next year and every 332 days thereafter. Shockingly, Mira contains a huge, 13 light-year-long tail -- visible only in the UV -- that it leaves as it rockets through the interstellar medium at 130 km/sec! Look for it in your skies all winter long, and contribute your results to the AAVSO (American Association of Variable Star Observers) International Database to help study its long-term behavior!

Check out some cool images and simulated animations of Mira here: [http://www.nasa.gov/mission\\_pages/galex/20070815/v.html](http://www.nasa.gov/mission_pages/galex/20070815/v.html)

Kids can learn all about Mira at NASA's Space Place: <http://spaceplace.nasa.gov/mira/en/>

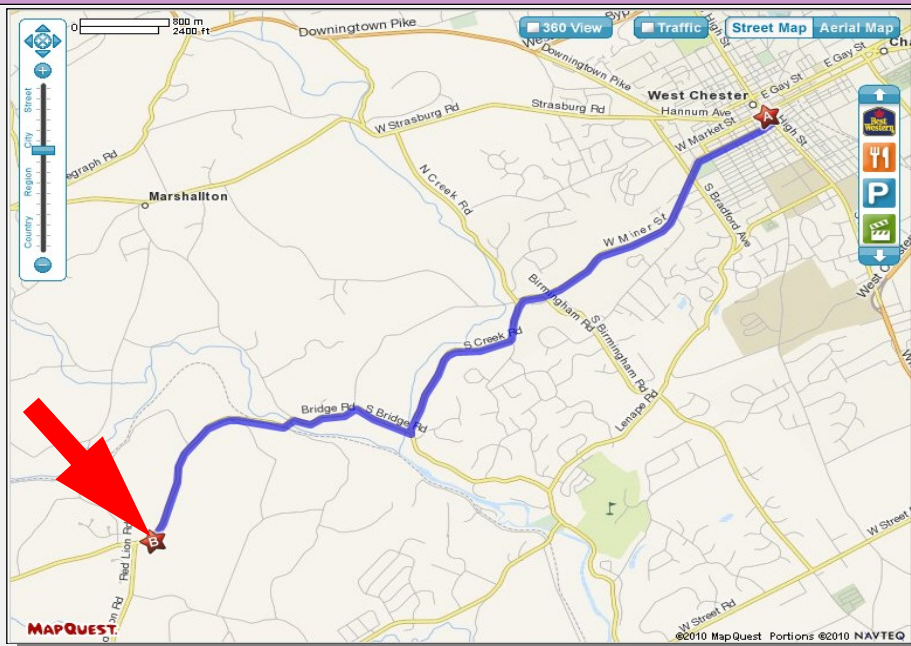
## Observing (Cont'd)

(Continued from page 9)

observing site and the larger the telescope the better, preferably a telescope with at least a 6 to 8 inch aperture.

**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 not rise until 5 a.m. This meteor shower is made up of dust particles from Comet Halley and usually peaks at 25 meteors per hour. The peak of this shower is broad, so look for shooting stars a few days before and after the peak.

## 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.

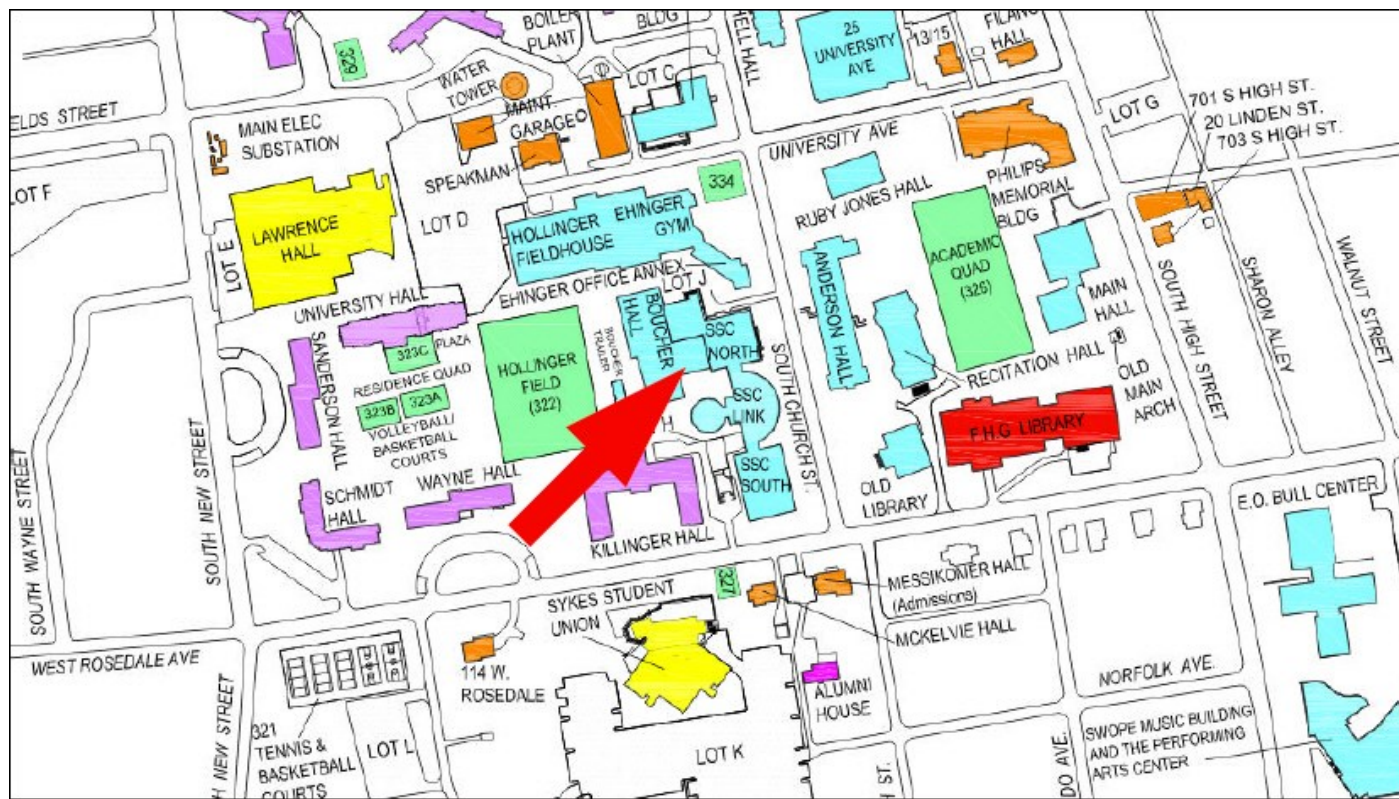
To get to the Myrick Conservation Center from West Chester, go south on High Street in West Chester past the Courthouse. At the next traffic light, turn right on Miner Street, which is also PA Rt. 842. Follow Rt. 842 for about 6 miles. To get to the observing site at the BVA property, turn left off Route 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 112 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).



### Eyepiece (cont'd)

(Continued from page 8)

The Pleiades are easy to find in the late October sky but are better viewed in winter when they are higher in the sky. Look for Aldebaran, the eye of Taurus the Bull, then look up and to the right. The cluster is a great object in binoculars or a rich-field telescope showing more than 100 stars.

A sure way to get a “WOW” from a friend new to studying the night sky is to mount your binoculars on a tripod and put the Pleiades in the field of view. Share this wonderful sight with your friends and family!

### CCAS Membership Information and Society Financials

#### Treasurer's Report by Don Knabb

##### Sept. 2014 Financial Summary

Beginning Balance	\$1,926
Deposits	\$182
Disbursements	<u>\$102</u>
Ending Balance	\$2,006

#### **New Member Welcome!**

Welcome new CCAS member Alex Baran from West Chester. 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:

**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](mailto: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](mailto:newsletter@ccas.us)

Or mail the contribution, typed or handwritten, to:

**John Hepler**  
313 South Queen St.  
Chestertown MD 21620

### 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 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 (443) 282-0619 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 "nights out" for school, scout, and other civic groups.

### CCAS Executive Committee

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

<b>President:</b>	Roger Taylor 610-430-7768
<b>Vice President:</b>	Liz Smith 610-842-1719
<b>ALCor, Observing, and Treasurer:</b>	Don Knabb 610-436-5702
<b>Secretary:</b>	Ann Miller 610-558-4248
<b>Librarian:</b>	Barb Knabb 610-436-5702
<b>Program:</b>	Dave Hockenberry 610-558-4248
<b>Education:</b>	Kathy Buczynski 610-436-0821
<b>Webmaster and Newsletter:</b>	John Hepler 443-282-0619
<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 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](mailto: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**.