Observations

A Monthly Publication Of The CHESTER COUNTY ASTRONOMICAL SOCIETY

Vol. 19, No. 7 *Two-Time Winner of the Astronomical League's Mabel Sterns Award ¤ 2006 & 2009* *July 2011*

In This Issue

Happy Independence Day!

Abell 2744: Pandora's Cluster of Galaxies
Image Credit: NASA, ESA, J. Merten (ITA, AOB), & D. Coe (STScI)

The above picture combines optical images from the Hubble Space Telescope and the Very Large Telescope with X-ray images from the Chandra X-Ray Observatory. Abell 2744, dubbed Pandora's cluster, spans over two million light years and can best be seen with a really large telescope toward the constellation of the Sculptor.

Membership Renewals Due

08/2011	Given & Family Knabb & Family Loving & Family Lurcott Fragale Morgan
09/2011	Arunapuram Baudat & Family Catalano-Johnson & Family De Lucia Lurcott
11/2011	Buczynski Hepler Holenstein O'Hara

Important July 2011 Dates

1st • New Moon 4:54 a.m.

8th • First Quarter Moon 2:29 a.m.

15th • Full Moon 2:40 a.m.

23rd • Last Quarter Moon 1:02 a.m.

28th -30th • The Southern Delta Aquarid meteor shower peaks

30th • New Moon 2:40 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.

¤ **Friday, July 8, 2011** - Night Out at Springton Manor Farm, Glenmoore, PA. The event is from 9 p.m. to 10 p.m.

¤ **Saturday, October 1, 2011** - Fall National Astronomy Day. Anson Nixon Park, Kennett Square, PA.

Summer 2011 Society Events

July 2011

6th • PA Outdoor Lighting Council monthly meeting starting at 7:30 p.m. Meetings are open to the public. For more information and directions, visit the PA Outdoor Lighting Council website.

20th • Open call for articles and photographs for the August 2011 edition of *Observations*.

22nd • CCAS Monthly Observing Session, Myrick Conservancy Center, BVA (inclement weather date July 23rd). The observing session starts at sunset.

26th • Deadline for newsletter submissions for the August 2011 edition of *Observations*.

August 2011

3rd • PA Outdoor Lighting Council monthly meeting starting at 7:30 p.m. Meetings are open to the public. For more information and directions, visit the PA Outdoor Lighting Council website.

19th • Reservations start for the September 9th planetarium show at the WCU Planetarium. For more information, please contact Dr. Karen Vanlandingham, Planetarium Director, via the planetarium's webpage.

20th • Open call for articles and photographs for the September 2011 edition of Observations.

26th • CCAS Monthly Observing Session, Myrick Conservancy Center, BVA (inclement weather date August 27th). The observing session starts at sunset.

26th • Deadline for newsletter submissions for the September 2011 edition of *Observations*.

Minutes from the June 12, 2011 CCAS Monthly Meeting

by Don Knabb, CCAS Secretary and Observing Chair

- Approximately 14 members were in attendance.
- DVD presentation: "Ripples in the Cosmic Background Radiation", a half-hour video presentation of a lecture by Professor Alex Filippenko, UC Berkeley.
- During the DVD presentation, members of the group were involved in casual discussions with Jerry Lodriguss, the accomplished astrophotographer and author who presented the evening's program.
- New DVD collection: We will begin showing *Experiencing Hubble: Understanding the Greatest Images of the Universe*, at the September meeting.
- Program: Jerry Lodriguss presented Secrets of DSLR Astrophotograhy.

Nicholas's Humor Corner

by Nicholas La Para

September 2011 Guest Speaker

by Dave Hockenberry, CCAS Program Chair

Our first meeting of the 2011-2012 season is scheduled for September 13, 2011 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. Andrej Prsa, from Villanova University. His presentation is entitled, "Research on Eclipsing Binary Star Systems in the Kepler Fields."

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.

We are looking for presenters for our 2011-2012 season. If you are interested in presenting or know someone who would be an interesting guest speaker, please contact our Program Chairperson Dave Hockenberry at programs@ccas.us.

We are also looking for Constellation of the Month (COM) presenters for the 2011-2012 season. 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.

New CCAS Treasurer

by Roger Taylor, CCAS President

After many years of dedicated service, Bob Popovich decided not run again for the office of treasurer in our recent election. Running unopposed, Liz Smith was elected at the May meeting.

Effective July 1, 2011, Liz has assumed her new role as CCAS Treasurer. Please direct all questions about membership, magazine subscriptions, and the Astronomical League to Liz. Her contact information is on the last page of this newsletter. You can also reach her on line by sending an e-mail to treasurer@ccas.us.

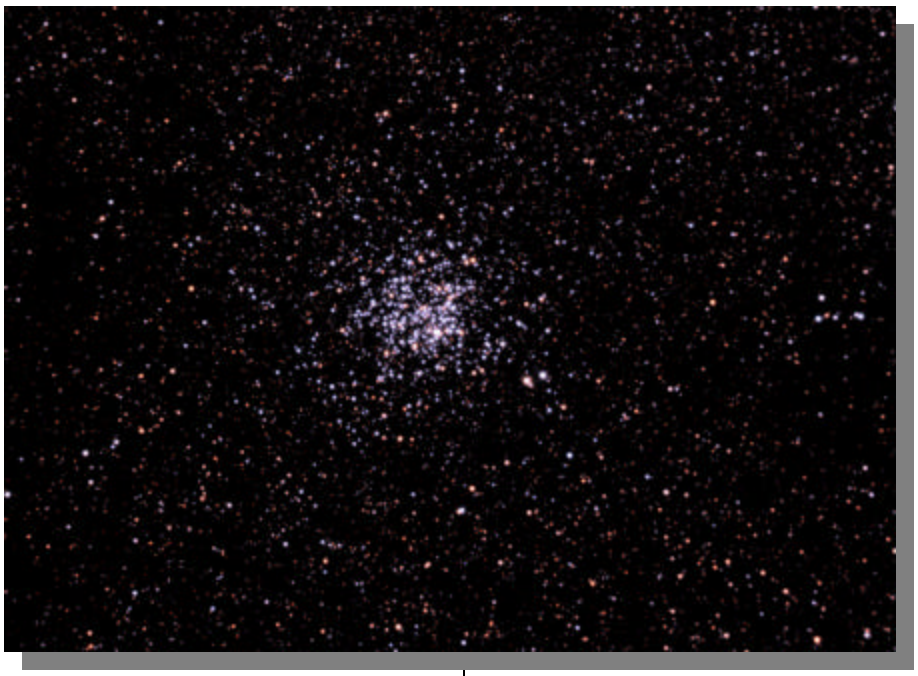
Thank you Liz, for assuming the responsibility of this important Society position.

CCAS Member Astrophotography: M11, the Wild Duck Cluster

by Dave Hockenberry, CCAS Program Chair

This is one of the most compact of the open clusters in the sky, and at about 6,000 light years away is practically in our own cosmic "back yard." Given the moniker "Wild Duck" by British Admiral Smyth in the middle 1800's, he observed this cluster through a 6" refractor, one of the better amateur telescopes of its day. He thought it looked like a flock of wild ducks through his optics.

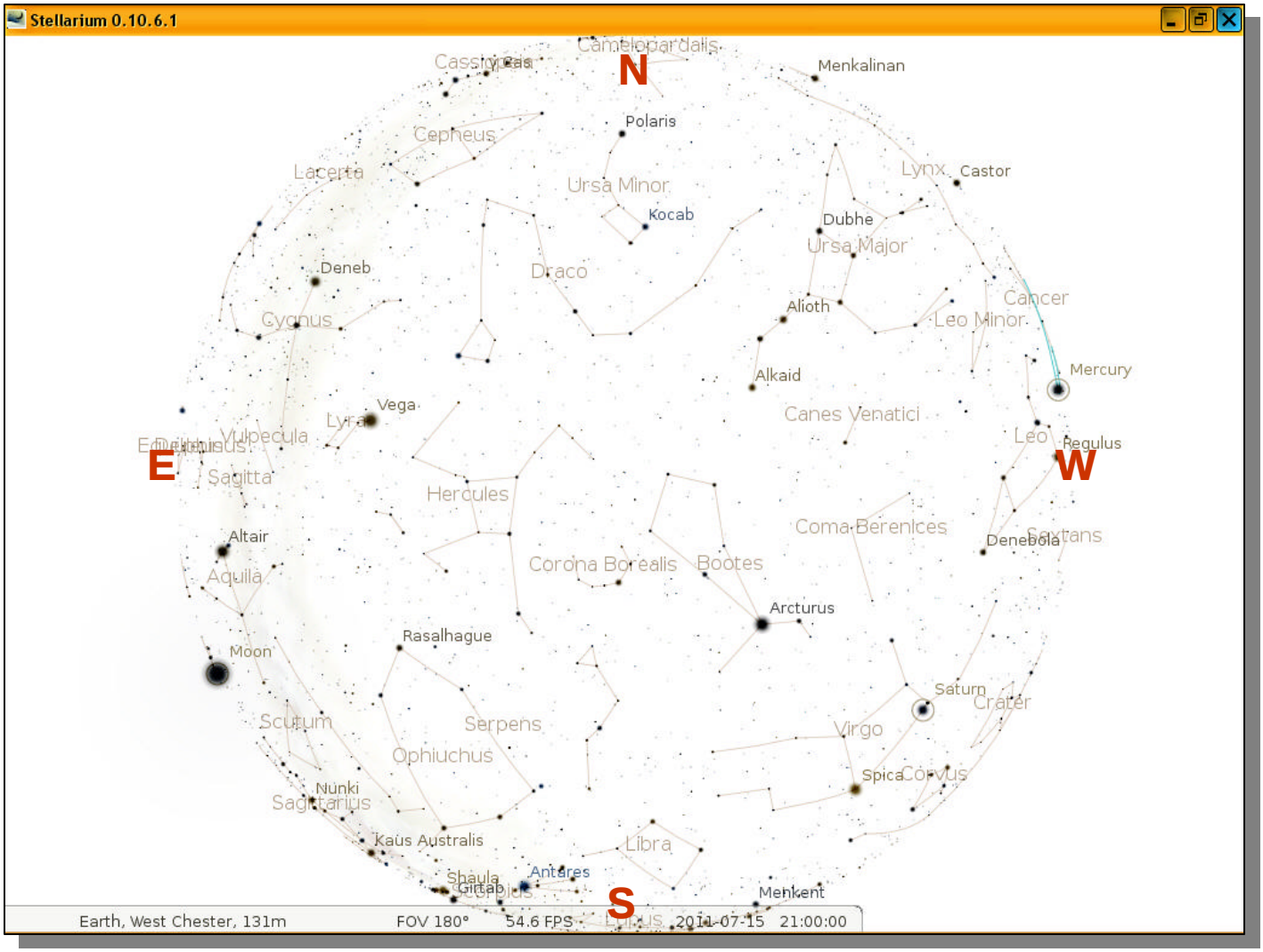
Shot 6/2/11 though Astrotech AT8RC telescope with QSI 583 wsg camera, one hour stack of 30 second Luminance images, 30 minutes 30 second frames each RGB. Autoguided with SX Lodestar camera and MaxIm DL 4, on Losmandy G11 mount. Calibrated, hot pixel removal, stacked, DDP adjusted, and RGB merge in CCDStack. Final LRGB merge and finish processing in Photoshop CS3. This cluster is right on the edge of the Scutum star cloud, the beginnings of which are seen at the bottom on the photo here.



The Sky Over Chester County

July 15, 2011 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
7/01/2011	5:03 a.m. EDT	5:35 a.m. EDT	8:33 p.m. EDT	9:06 p.m. EDT	14h 58m 00s
7/15/2011	5:12 a.m. EDT	5:44 a.m. EDT	8:29 p.m. EDT	9:00 p.m. EDT	14h 44m 21s
7/31/2011	5:27 a.m. EDT	5:58 a.m. EDT	8:16 p.m. EDT	8:46 p.m. EDT	14h 17m 48s

Moon Phases					
New Moon	7/01/2011	4:54 a.m. EDT	Full Moon	7/15/2011	2:40 a.m. EDT
First Quarter	7/08/2011	2:29 a.m. EDT	Last Quarter	7/23/2011	1:02 a.m. EDT
			New Moon	7/30/2011	2:40 p.m. EDT

July 2011 Observing Highlights

by Don Knabb, CCAS Secretary & Observing Chair

July 1	**New Moon 4:54 a.m.**
July 1-19	**Mercury is in good position for evening viewing**
July 2-4	**Mercury is near the thin crescent Moon**
July 6-8	**The Moon passes below Saturn and Spica**
July 8	**First-quarter Moon 2:29 a.m.**
July 15	**Full Moon 2:40 a.m.**
July 23	**Last Quarter Moon 1:02 a.m.**
July 28-30	**The Southern Delta Aquarid meteor shower peaks**
July 30	**New Moon 2:40 p.m.**

The best sights this month: Saturn continues to be the best object for telescopic observation during July, and with a little effort you can also see Mercury as the sky darkens. If you are at a dark sky site step away from the eyepiece and enjoy the glow of the Milky Way.

Mercury: July is a good opportunity to see the elusive planet Mercury from the 1st to the 20th. Look low in the west-northwest about 45 minutes after sunset. From July 2 – 4 a thin crescent Moon will not be far from Mercury.

Venus: Venus continues to shine brightly in the east just before the Sun rises at the start of the month, but will be hard to find in the glow of the Sun at month's end.

Mars: Mars is visible, but dim, in the eastern sky just before the glow of the dawn brightens the sky.

Jupiter: The king of the planets is rising around midnight at the end of July. The best time for observation is just before the sky begins to brighten with the sunrise when Jupiter is high in the sky.

Saturn: Saturn is still reasonably high in the southwest as the sky becomes dark. Set up your telescope as the Sun is setting so you can see Saturn when it is highest in the sky and therefore through the least amount of hazy July atmosphere.

Uranus and Neptune: Uranus and Neptune will be in much better viewing position later in the year when they enter the evening sky. But if you want to see these distant gas giants go to the Sky and Telescope website for charts to guide your search for these dim dots in the sky.

The Moon: Full moon occurs on July 15th. Native Americans called this the Full Buck Moon because July is normally the month when the new antlers of buck deer push out of their foreheads with coatings of velvety fur. It was also often called the Full Thunder Moon, since thunderstorms are most frequent during this time of year.

If we have a really hot and humid July and you'd like something to remind you that cooler weather is not far away, get up before dawn on July 26th or 27th and you can see the waning crescent Moon near the Pleiades and Hyades clusters in Taurus the Bull.

Constellations: I love the warm July nights! Settle back in a lounge chair on a clear July night and enjoy the wonderful stars of summer! In the west is bright Arcturus in Boötes with the beautiful Corona Borealis, the Northern Crown, just to its east. Then we pass through Hercules to the Summer Triangle with the Milky Way filling the spaces within the triangle. Lean back with a pair of binoculars and gaze into the triangle and you will see hundreds of stars! It just doesn't get any better than this!

Messier/deep sky: While the southern constellations of summer, Sagittarius and Scorpius, are visible don't miss the chance to gaze into the heart of the Milky Way. M4, a globular cluster near red Antares in Scorpius is a nice sight in binoculars or a telescope. Then look high overhead with binoculars and find the coat hanger cluster between Vega and Altair. This is a great object to share with friends.

(Continued on page 12)

Report on a Trip to Cherry Springs State Park

by Roy Kalinowski

Armed with my observing plan and a desire to see the Milky Way, I set off with a friend to Cherry Springs state park to attend the Astronomical Society of Harrisburg's (ASH) Memorial Day weekend star party. The party is one of two large observing events held there yearly and typically draws about 400 registrants. Cherry Springs is a state park dedicated to astronomy and is located at the northern side of the Pennsylvania Susquehannock State Forest in Potter county PA. Its remote location and elevation (2300 ft.) make it one of the darkest and clearest observing sites in Pennsylvania.

The trip to CS takes approximately 5 hrs. and is 255 miles. Exiting off of route 80 near to a town called Jersey Shore, Cherry Springs is yet another 60 some miles north via Rt. 44. One begins to sense the remoteness from here —it's God's country from there on in to CS.

Upon arrival Thursday afternoon we had our first hint of bad weather as a drenching thunderstorm rolled through. My friend, and other observers I spoke to at CS, said it's worth going to the park even in bad weather as the skies, they say, can unexpectedly open up for long periods.

We set up our tents next to one of the coveted electrical outlet boxes. There are 17 of these and getting near one is why you want to arrive at the party as early as you can. Each box has six 20-amp GFCI outlets to power scope drives, computers, and for charging devices. The park has a modern restroom, non-potable water, and red lighting in addition to five telescope pads, three domes and a sky shed (which require reservations for use). Verizon cell phone service is available here (T-mobile is not). The park provides free wifi but it has limited bandwidth but two vendors also had free wifi available for the event. As for food, it was available only from 11am to 2pm which was a turn from previous ASH parties where a local vendor served food round the clock.

Thursday night we waited until 11 pm. for the clouds to clear but no luck. Radar was showing clouds and T-Storms for the reminder of the night and that is exactly what we got.

Friday's events included four lectures starting with “Electrical Power for Telescope Observing at Remote Sites” by Mike Snider M.D., Ph.D., and President of ASH. I found this talk particularity interesting. Mike knew his batteries —“his “home built” solar system has provided 35% of the power in his home for the last 12 years. Mike spoke at length about astronomical power supplies.

“Emerald Isle, Emerald Stars” was presented by John Flannery of the Irish Federation of Astronomical Societies. Publications that he has worked on include the IFAS Binocular Astronomy Handbook (available on http://www.irishastronomy.org as one of the “observing challenges”) and an annual guide to the night sky (2008 to 2010 editions) on http://www.mediafire.com/skyguide.

“A Finder and a Mount for Center Post Binoculars” presented by ASH's Secretary Harry Capper. Harry is retired from AMP Inc. where he has been named on 23 patents during his career.

“Weather Forecasting for Astronomy” by Jon Nese, Senior Lecturer in Penn State University's Meteorology department. Jon is writer/Producer/host of the television program “Weather World”.

The talks were roughly an hour in length and were held in the Park's pavilion. They were well attended with approximately 70 persons per talk.

Friday was another cloudy night and since there was no observing I'll just mention here that if you come to CS you'll want to stay two or three days, and camp overnight on the observing field. This allows you to maximize your sky time and avoid the drive to the nearest town of Coudersport (14 miles away) for a restaurant or hotel. If you are looking for foodstuffs, gas, or other necessities you can visit the local country store about a mile from the park. They have

(Continued on page 7)

Cherry Springs (Cont'd)

(Continued from page 6)

everything you need (from souvenirs to camping supplies) in case you've forgotten something.

Saturday's events included "The Astronomer Zhang Heng and Chinese Astronomy" by Willie K. Yee M.D. I missed this talk, but I did not miss Dr. Yee. Not knowing he was a speaker, I stopped by his to admire his Prius which was detailed to look like a Star Trek shuttle craft. He gave me a tour of the interior, opened the doors and blasted a 10 minute audio featuring every imaginable sound effect from Star Trek. He drew a crowd to say the least. Then he handed out brochures explaining the car. Check out http://www.willieyee.info/ZHintro.html.

"iAstronomy: Astronomy for the iPad, iPhone, and Ipod" was presented by Max Byerly, a young home-schooled student who has a passion for astronomy.

"Nutrinoless double-beta decay and Dark Matter" was presented by Steven Frey MS CHP. This talk included a bit of math and physics but it was interesting nonetheless.

On Saturday we stopped by the Vendor's tent. JGS Enterprises displayed items ranging from jewelry to red lights by Astrogizmo, and the Astrogazer portable observatory and binocular viewing chairs. Telescope Support Systems had mounting rings. Astrozap featured dew shields and Newtonian focusers. Wood Wonders displayed observing chairs and very elaborate wooden eyepiece boxes (very nice). Cherry Springs Optiks was not at the tent - they're located adjacent to the park where you can find, in a rather large shed, a full line of telescopes, eyepieces, power supplies etc. Cherry Springs Optiks, I understand, is new there at CS and besides providing equipment, you could get a cut of turkey (fresh from the deep fryer), baked potato, and glass of beer for $3 per person from 5 to 7 p.m.

Saturday evening featured the prizes drawing. The best of many prizes included a deluxe Celestron weather station (courtesy of Hands On Optics), a 18mm, 82 degree N2 filled eyepiece (Skies Unlimited), a one drawer eyepiece case from Wood Wonders, and a Celestron field power supply. Tickets were a $1 a piece; simply place as many tickets into a box for the particular prize you are shooting for.

Saturday night was our last night there and the skies were still disappointing. The campground was very quiet and few red flashlights were seen. My friend and I were about to wrap it up at 10:30 pm when we suddenly got a "sucker" window; the entire sky became clear. Scopes all around started whirling and the chatter on the field picked up. With the window I got to see the single object that I can to here to see—the Milky Way. Stretching across the sky, and most prominent toward the northeast, it was visible with the naked eye. Not super brilliant (though I was told it does get bright on exceptionally clear nights), but it was definitely discernible under the current conditions. I scanned it with binoculars for some time; the field of view was chock-full of stars and it was indeed a great site.

Then, almost as quickly as it appeared, it faded away as the clouds moved back. With that, our last night was over. Sadly I could only imagine what I could have seen if I had time to search out all the objects on my observing plan.

One of the ASH members told me that they had about 350 registrations for the event—about 50 short of the cutoff. He estimated that only about 200 showed due to the poor weather. However, even considering the weather, the event was a total success and I found the party relaxing, enjoyable and informative. I would go again and encourage anyone who might make the trek to do it.

The next large event is the Black Forrest Star party hosted by the Central Pennsylvania Observers schedule for August 26-28, 2011. For more information visit http://www.bfsp.org/starparty/index.cfm.

Through the Eyepiece: M92, "The Other Globular Cluster" in Hercules

by Don Knabb, CCAS Secretary & Observing Chair

In early summer the constellation Hercules is nearly overhead just after the sky completely darkens. Hercules contains one of the most looked at and beautiful objects visible from the Northern Hemisphere, M13, the Great Globular Cluster. To find M13, first find "the Keystone", an asterism in Hercules. M13 is along one side of the keystone of Hercules.

But Hercules also has another gem of the night sky within his grasp, M92, "the other" globular cluster! M92 is one of the brighter globular clusters in the northern hemisphere, but it is often overlooked by amateur astronomers because of its proximity to the even more spectacular Messier 13. It is visible to the naked eye under very good conditions

Once you've identified the "keystone" asterism in the constellation of Hercules, finding Messier 92 is easy. Simply draw a mental line between Pi and Eta, (the widest part of the keystone and the northern-most two stars) and create a triangle in your mind. Now, scan with binoculars or a telescope to the apex of the triangle and look for a small, smudgy spot just to the north. That's it!

M92 can be spotted in small binoculars and becomes recognizable as a globular cluster in larger models. At close to magnitude 6, it's near unaided

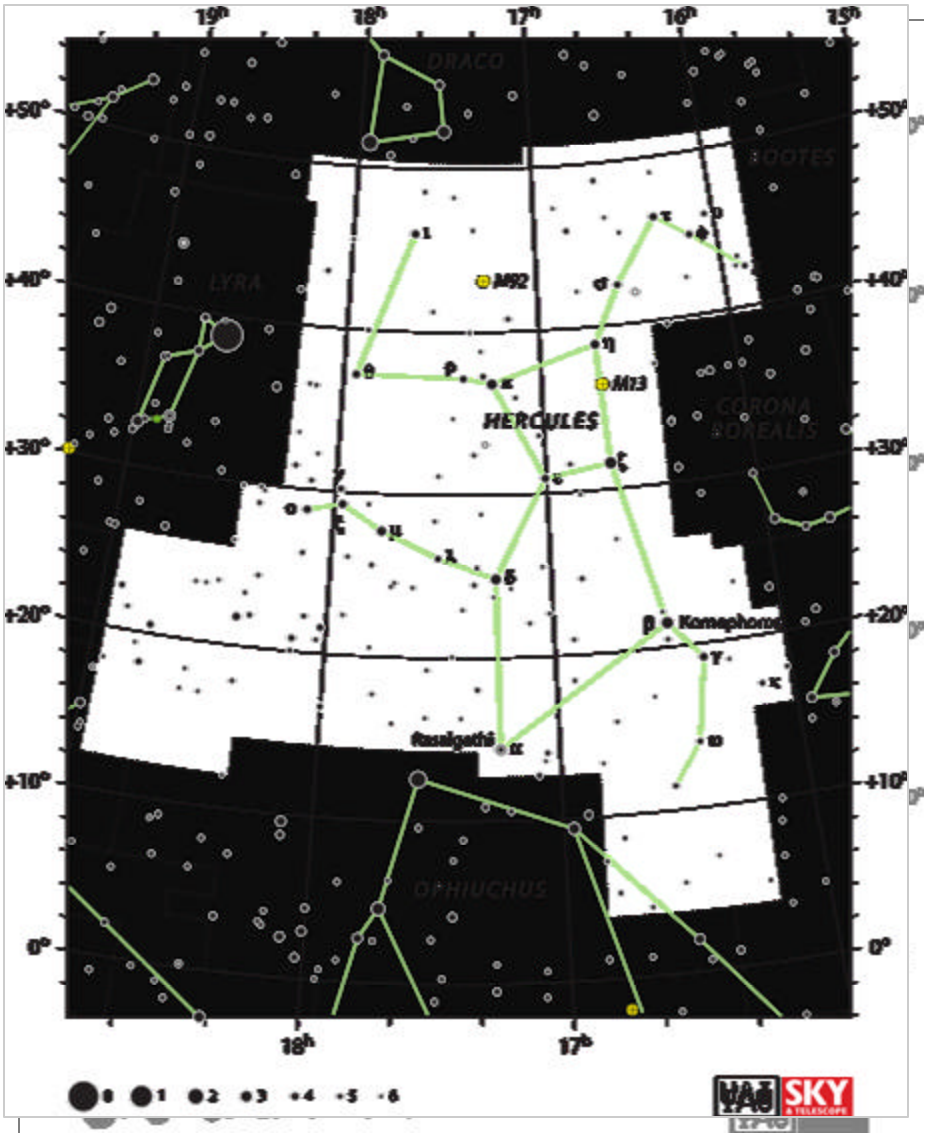


Image credit: IAU and Sky & Telescope magazine (Roger Sinnott & Rick Fienberg), http://en.wikipedia.org/wiki/File:Hercules_IAU.svg

eye visibility from a dark sky location and makes an excellent object for urban telescopes – even on partially moonlit nights! 26,000 light years distant M92 seems to literally explode with stars, and no wonder! This sixteen billion year old globular has perhaps 330,000 of them packed into a 109 light year radius.

I have included two sky maps that you can use to find M13 and M92. They show two different interpretations of how the figure of Hercules fits the stars that make up the constellation. In the first one (see above) Hercules is upside down with his head at the bottom of the diagram and his legs pointing up.

(Continued on page 9)

M92, the Other Globular Cluster (cont'd)

(Continued from page 8)

In the second sky map we see an alternate diagram of the constellation Hercules, based on the book *The Stars — A New Way to See Them* by H. A. Rey.

This globular cluster was originally discovered by Johann Elert Bode on December 27, 1777 who wrote: "A nebula. More or less round with pale glow." Charles Messier would be the next to encounter it on March 18, 1781. In his notes he writes: "Nebula, fine, distinct, and very bright, between the knee and the left leg of Hercules, it can be seen very well in a telescope of one foot. It contains no star; the center is clear and brilliant, surrounded by nebulosity and [it] resembles the nucleus of a large Comet: its brightness, its size, approach much that of the nebula which is in the girdle of Hercules. See No.13 of this Catalog."

M92 is also an excellent target for amateur astrophotograhers. A picture of M92 taken by Dave Hockenberry appears on pg. 11.

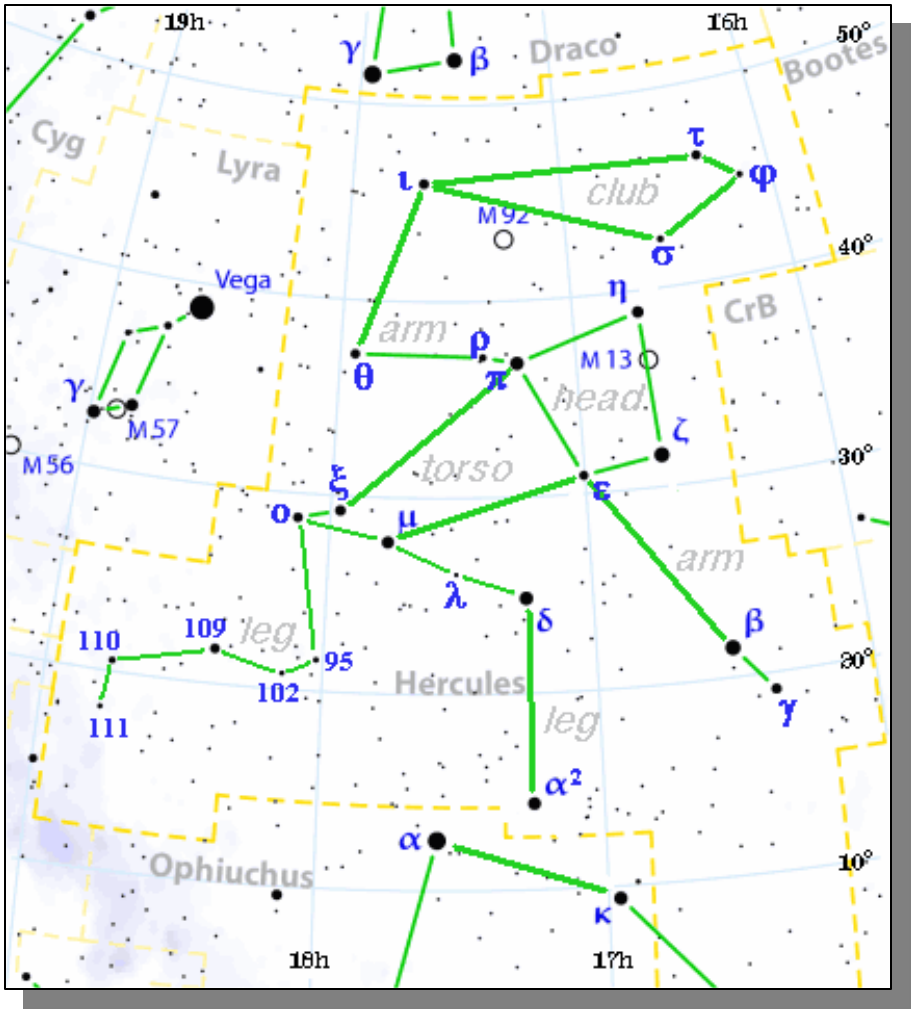


Image credit: http://en.wikipedia.org/wiki/File:Hercules_constellation_map_visualization.PNG

A globular cluster is a spherical collection of stars that orbits a galaxy as a satellite. They can contain anywhere from ten thousand to a million stars. These stars orbit the collective center of mass of the cluster in a veritable bee hive of motion, and the cluster itself orbits the Milky Way as a distinct object, occasionally plunging right through the main disk and out the other side. Although the cluster appears extremely dense, the distance between individual stars is actually quite large. As a result, stars within them rarely collide, and globular clusters survive relatively unscathed by their passage through the galaxy's disk.

It is interesting to contemplate what the night sky might look like if we lived on a planet revolving around a star in M92. Contrary to what seems obvious, one would not be dazzled by a sky swarming with stars. There might be a dozen or so stars much brighter than any we see and perhaps a hundred as bright as our brightest but it would still get dark out. However, as it would be lighter than our darkest skies, we just might not have a clue of the dim galaxies and nebulae that lie outside our cluster. The Milky Way would probably be about as exciting as it is from the middle of football stadium at night.

Information credits:

(Continued on page 11)

Finding Planets among the Stars

by Dr. Tony Phillips

Strange but true: When it comes to finding new extra-solar planets, or exoplanets, stars can be an incredible nuisance.

It's a matter of luminosity. Stars are bright, but their planets are not. Indeed, when an astronomer peers across light years to find a distant Earth-like world, what he often finds instead is an annoying glare. The light of the star itself makes the star's dim planetary system nearly impossible to see.

Talk about frustration! How would *you* like to be an astronomer who's constantly vexed by stars?

Fortunately, there may be a solution. It comes from NASA's Galaxy Evolution Explorer, an ultraviolet space telescope orbiting Earth since 2003. In a new study, researchers say the Galaxy Evolution Explorer is able to pinpoint dim stars that might not badly outshine their own planets.

"We've discovered a new technique of using ultraviolet light to search for young, low-mass stars near the Earth," said David Rodriguez, a graduate student of astronomy at UCLA, and the study's lead author. "These M-class stars, also known as red dwarfs, make excellent targets for future direct imaging of exoplanets."

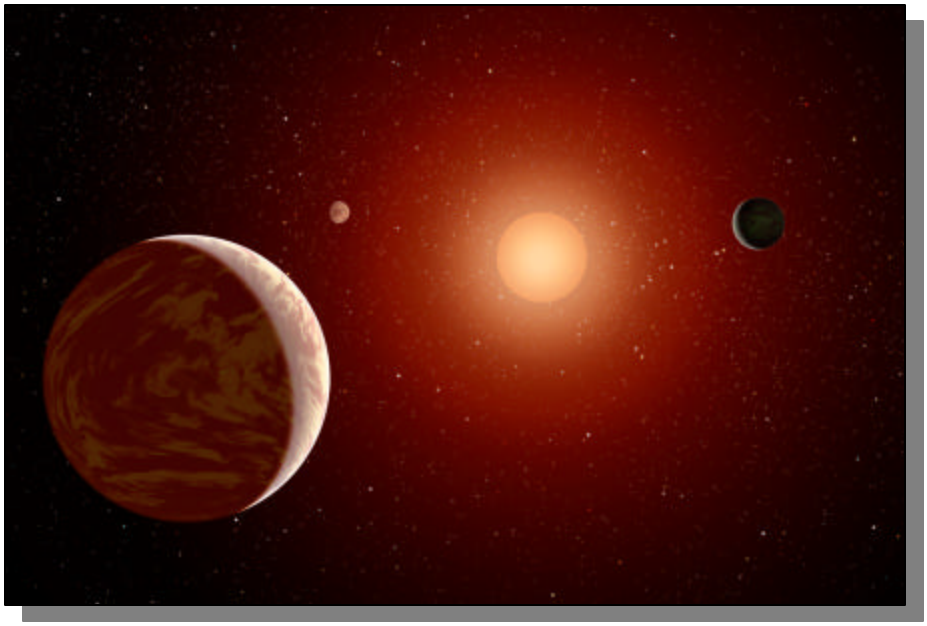
Young red dwarfs produce a telltale glow in the ultraviolet part of the electromagnetic spectrum that Galaxy Evolution Explorer can sense. Because dwarf stars are so numerous—as a class, they account for more than two-thirds of the stars in the galaxy—astronomers could reap a rich bounty of targets.

In many ways, these stars represent a best-case scenario for planet hunting. They are close and in clear lines-of-sight, which generally makes viewing easier. Their low mass means they are dimmer than heavier stars, so their light is less likely to mask the feeble light of a planet. And because they are young, their planets are freshly formed, and thus warmer and brighter than older planetary bodies.

Astronomers know of more than five hundred distant planets, but very few have actually been seen. Many exoplanets are detected indirectly by means of their "wobbles"—the gravitational tugs they exert on their central stars. Some are found when they transit the parent star, momentarily dimming the glare, but not dimming it enough to reveal the planet itself.

The new Galaxy Evolution Explorer technique might eventually lead to planets that can be seen directly. That would be good because, as Rodriguez points out, "seeing *is* believing."

And it just might make astronomers feel a little better about the stars.



Exoplanets are easier to see directly when their star is a dim, red dwarf.

(Continued on page 11)

Space Place (Cont'd)

(Continued from page 10)

The Galaxy Evolution Explorer Web site at http://www.galex.caltech.edu describes many of the other discoveries and accomplishments of this mission.

And for kids, how do astronomers know how far away a star or galaxy is? Play "How Old do I Look" on The Space Place at http://spaceplace.nasa.gov/whats-older and find out!

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

M92, the Other Globular Cluster (cont'd)

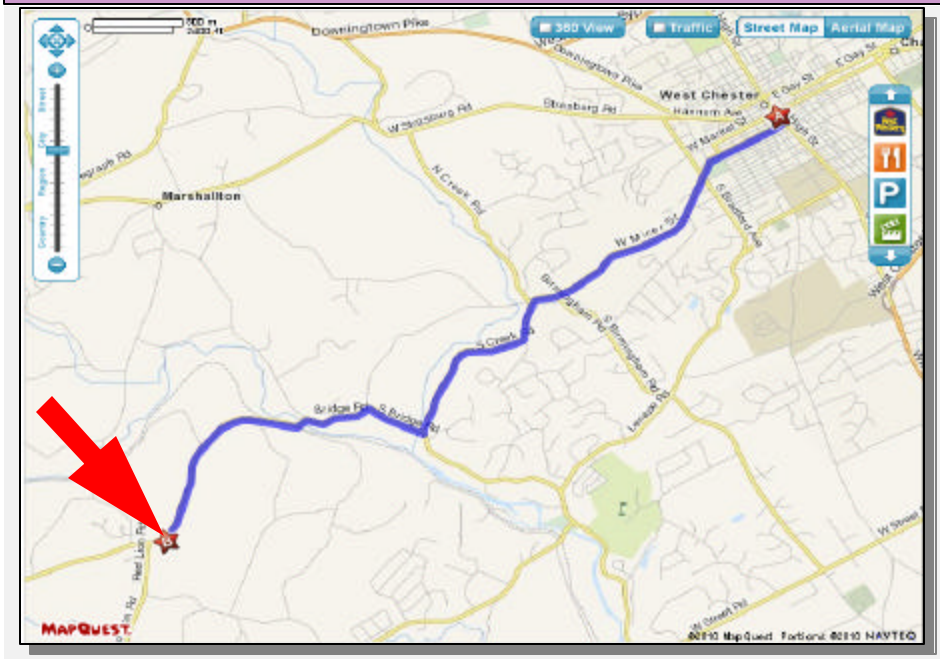
(Continued from page 9)

http://en.wikipedia.org/wiki/Globular_Cluster_M92

http://www.universetoday.com/48377/messier-92/

http://www.optcorp.com/edu/articleDetailEDU.aspx?aid=2056

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).

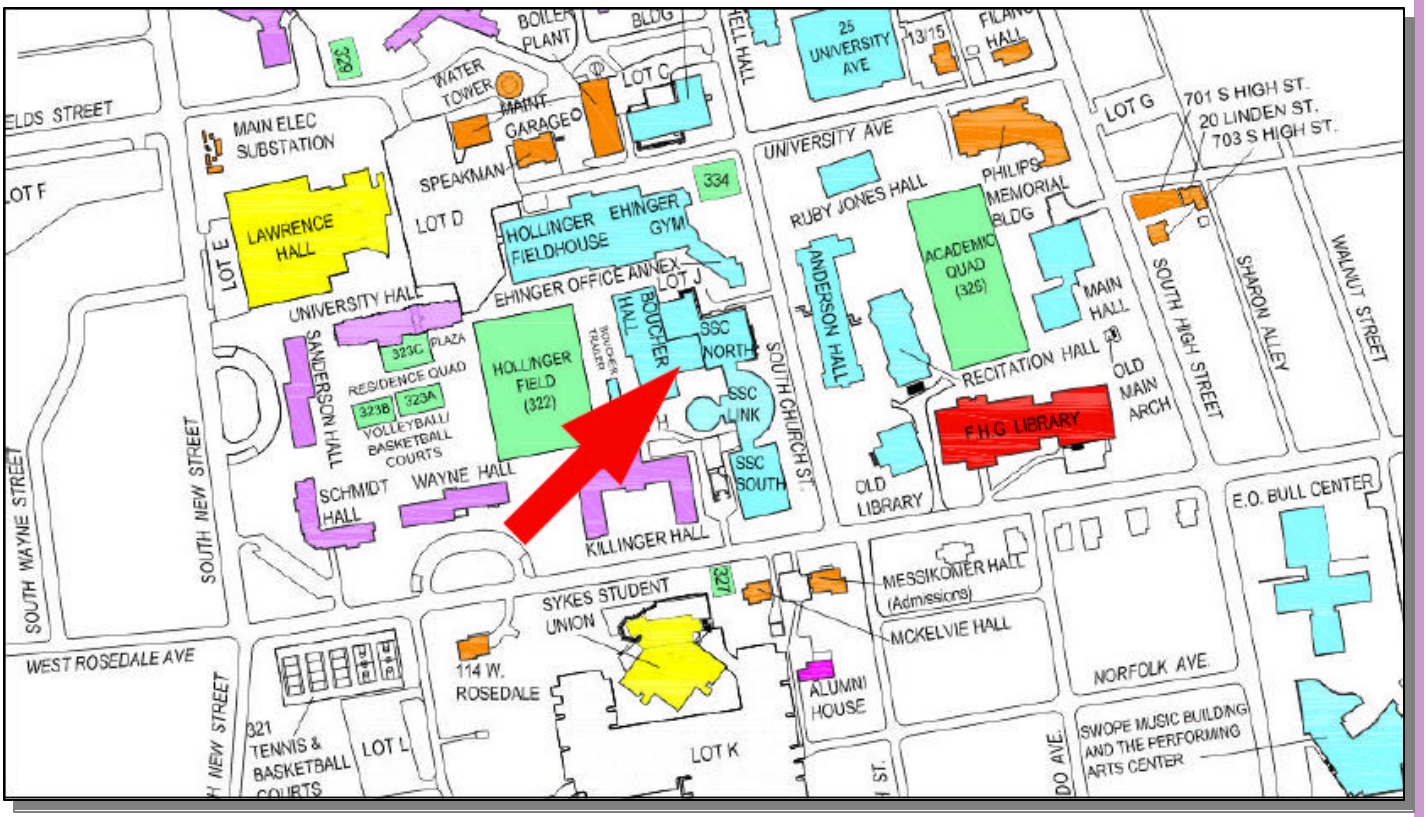
Brandywine Valley Association
1760 Unionville Wawaset Rd
West Chester, PA 19382
(610) 793-1090
http://brandywinewatershed.org/

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.

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).



Observing Highlights (cont'd)

(Continued from page 5)

Comets: There are no bright comets visible during July.

Meteor Showers: The Delta Aquarid meteor shower peaks on July 29th. We won't have an impressive shower, but one might see 10 to 20 fast meteors per hour. The last quarter Moon will not interfere with the fast, small meteors.

CCAS Membership Information and Society Financials

Treasurer's Report
by Liz Smith

May 2011 Financial Summary

Beginning Balance	$1,206
Deposits	$35
Disbursements	$90
Ending Balance	$1,151

New Member Welcome!

Welcome new CCAS member Gary Calobrisi & Family of Phoenixville, PA.

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:

Liz Smith
1567 Shadyside Rd.
West Chester PA 19380

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 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 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 (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 Pres:	Kathy Buczynski 610-436-0821
ALCor and Treasurer:	Liz Smith 610-842-1719
Secretary and Observing:	Don Knabb 610-436-5702
Librarian:	Barb Knabb 610-436-5702
Program:	Dave Hockenberry 610-558-4248
Education:	Kathy Buczynski 610-436-0821
Webmaster and Newsletter:	John Hepler 724-801-8789
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:

Liz Smith
1567 Shadyside Rd.
West Chester PA 19380

Phone: **610-842-1719**
e-mail: **treasurer@ccas.us**

*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 Liz Smith.

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 Liz first at 610-842-1719.

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 Liz Smith.**