Observations

A Monthly Publication Of The
CHESTER COUNTY ASTRONOMICAL SOCIETY

Vol. 19, No. 9 *Two-Time Winner of the Astronomical League's Mabel Sterns Award ¤ 2006 & 2009* *September 2011*

In This Issue

Membership Renewals Due

09/2011	Arunapuram Baudat & Family Catalano-Johnson & Family De Lucia Lurcott
11/2011	Buczynski Hepler Holenstein O'Hara
12/2011	Bogusch

NGC 281, The Pacman Nebula

Look through the cosmic cloud cataloged as NGC 281 and it's almost easy to miss stars of open cluster IC 1590. But, formed within the nebula, that cluster's young, massive stars ultimately power the pervasive nebular glow. The eye-catching shapes looming in this portrait of NGC 281 are sculpted columns and dense dust globules seen in silhouette, eroded by intense, energetic winds and radiation from the hot cluster stars. NGC 281 is about 10,000 light-years away in the constellation Cassiopeia. This composite image was made through narrow-band filters, but combines emission from the nebula's hydrogen, sulfur, and oxygen atoms in a visible spectrum palette. It spans over 80 light-years at the estimated distance of NGC 281. *Image courtesy of J-P Metsävainio.*

Important September 2011 Dates

3rd • The 2.3 magnitude star Delta Scorpii will be occulted by the Moon.

4th • First Quarter Moon 1:39 p.m.

12th • Full Moon 5:27 a.m.

20th • Last Quarter Moon 9:39 a.m.

23rd • Autumn begins at 5:05 a.m.

27th • New Moon 7:09 a.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, September 23, 2011** - CCAS Monthly Observing Session, Myrick Conservancy Center, BVA (inclement weather date September 24th).

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

Summer/Fall 2011 Society Events

September 2011

7th • 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.

16th • West Chester University Planetarium Show, "Our Milky Way Galaxy," in the Schmucker Science Building. The show starts at 7 p.m. Reservations are required. For more information and reservations, visit the planetarium's webpage.

13th • DVD Lecture Series: "The Rationale for a Space Telescope," a half-hour video presentation of a lecture by Dr. David M. Meyer, Northwestern University. The presentation immediately precedes the monthly meeting and starts at 7:00 p.m.

13th • 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. Andrej Prsa, Villanova University. "Research on Eclipsing Binary Star Systems in the Kepler Fields."

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

23rd • CCAS Monthly Observing Session, Myrick Conservancy Center, BVA (inclement weather date September 24th). The observing session starts at sunset.

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

30th • Reservations start for the October 21st planetarium show at the WCU Planetarium. For more information, visit the planetarium's webpage.

October 2011

1st • Fall National Astronomy Day. Night Out at Anson Nixon Park, Kennett Square, PA. The free public event starts at sunset. For more information, contact our Observing Chair, Don Knabb.

5th • 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.

11th • DVD Lecture Series: "Comet Shoemaker-Levy 9 and Jupiter," a half-hour video presentation of a lecture by Dr. David M. Meyer, Northwestern University. Room 113, Merion Science Center (former Boucher Building), West Chester University. The presentation immediately precedes the monthly meeting and starts at 7:00 p.m.

11th • CCAS Monthly Meeting, Room 113, Merion Science Center (former Boucher Building), West Chester University. The meeting starts at 7:30 p.m. Gutest Speaker: TBA.

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

21st • CCAS Monthly Observing Session, Myrick Conservancy Center, BVA (inclement weather date October 22nd). The observing session starts at sunset.

21st • West Chester University Planetarium Show, "The King of the Planets", in the Schmucker Science Building. The show starts at 7 p.m. Reservations are required. For more information and reservations, visit the planetarium's webpage.

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

28th • Reservations start for the November 18th planetarium show at the WCU Planetarium. For more information, visit the planetarium's webpage.

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 education@ccas.us for a COM template to fill out.

Nicholas's Humor Corner

by Nicholas La Para

CCAS Original Astrophotography

by Dave Hockenberry, CCAS Program Chair

Trifid nebula in Sagittarius, about 7600 light years distant and about 50 light years across. Shot 6/8/11 and 8/6/11 with QSI 583 wsg camera through Astro-Tech AT8RC, autoguided with Starlight Xpress Lodestar camera off-axis. Luminance data taken on Losmandy G11 mount, color data on AstroPhysics AP 1200 mount. Image acquisition with MaxIm DL5, all images calibrated, stacked, deconvlved and RGB creation in CCDStack. Final LRGB merge and adjustments made in Photoshop CS3. FITS Liberator courtesey of ESA. 110 minutes Luminance, 25 minutes each RGB with AstroDon filters.

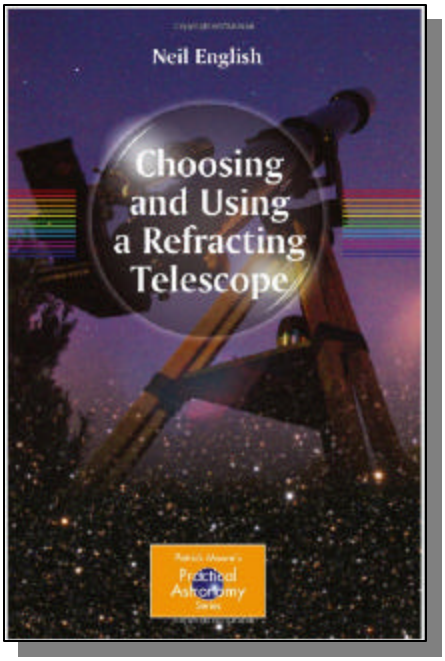
The Trifid Nebula in the Constellation Sagittarius

Book Review: Choosing and Using a Refracting Telescope

by Fred De Lucia

Choosing and Using a Refracting Telescope by Neil English (the not-infrequent contributor to the online forum "Cloudy Nights Telescope Reviews") is one of the latest from Springer's Patrick Moore's Practical Astronomy Series (2011, list $39.95).

While being a guide for refractor telescopes, it also seems to attempt to bring the argument of Apo vs. Achro to a logical conclusion. Although he gives full credit to Apos for their lack of chromatic aberration and other Seidel aberrations, English spares no opportunity to tout the character of long focal length achromatic refractors. The book almost reads like it's aimed at



the enthusiasts who either rarely or never go to a dark site. He never makes mention of applying an Achro to deep sky use where they perform competitively well with their 5x-10x the price Apo cousins. He frequently uses the Double-Double, Sirius, Venus and other bright backyard objects when describing optical performance.

The book is laced with a variety of photographs of refractors, both old and new, in an equal variety of photographic quality. There's more than a nod to Suiter's "Star-Testing Astronomical Telescopes", too. English gives short but quite informative instructions on how to evaluate visually: coatings, astigmatism, coma, spherical aberration and field curvature. By doing so in simple terms he

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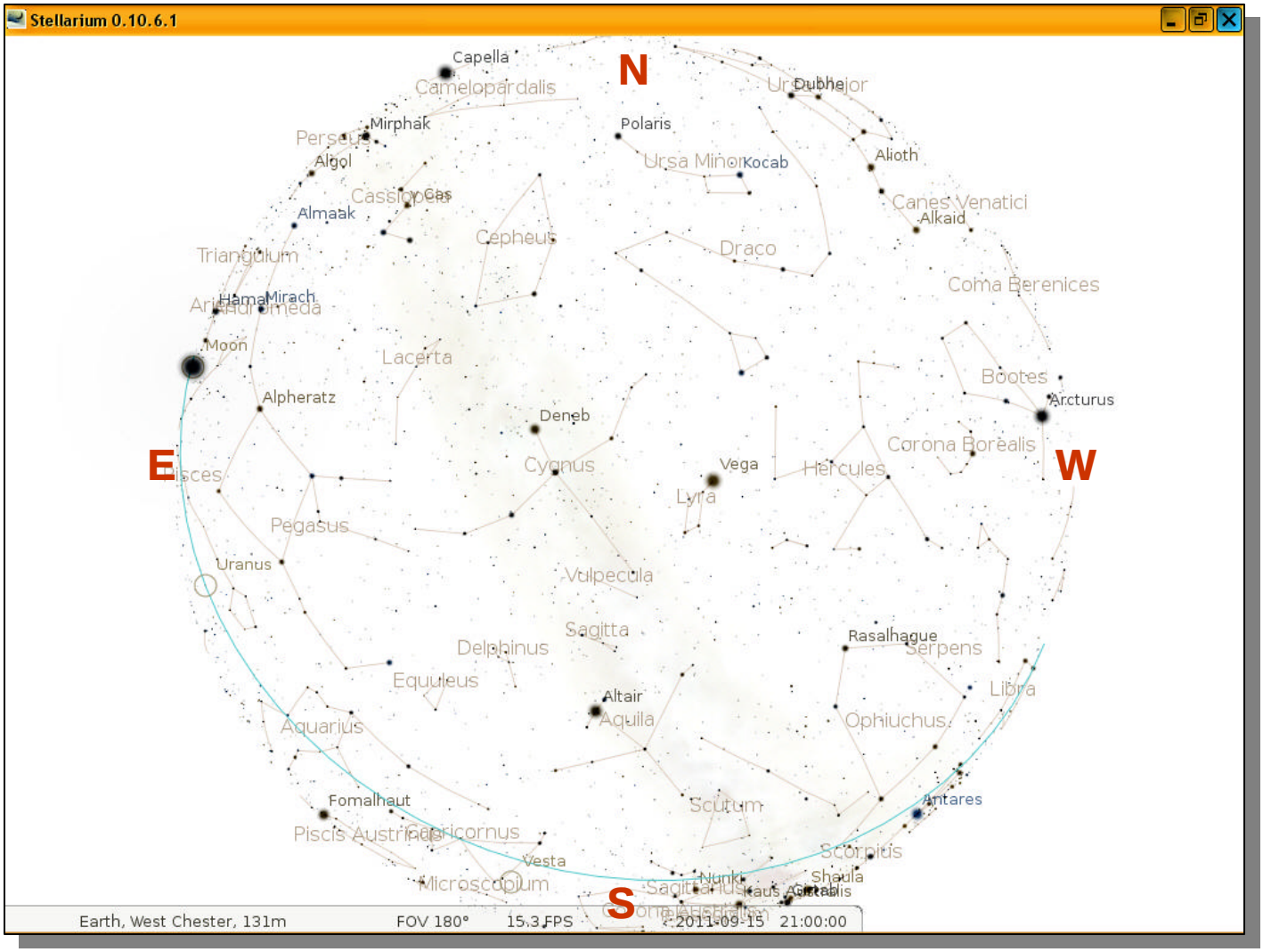
The Sky Over Chester County

September15, 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
9/01/2011	6:00 a.m. EDT	6:28 a.m. EDT	7:32 p.m. EDT	8:00 p.m. EDT	13h 04m 24s
9/15/2011	6:14 a.m. EDT	6:41 a.m. EDT	7:10 p.m. EDT	7:37 p.m. EDT	12h 28m 29s
9/30/2011	6:29 a.m. EDT	6:56 a.m. EDT	6:45 p.m. EDT	7:12 p.m. EDT	11h 49m 22s

Moon Phases					
First Quarter	9/04/2011	1:39 p.m. EDT	Last Quarter	9/20/2011	9:39 p.m. EDT
Full Moon	9/12/2011	5:27 a.m. EDT	New Moon	9/27/2011	7:09 a.m. EDT

September 2011 Observing Highlights

by Don Knabb, CCAS Secretary & Observing Chair

September 3	**The 2.3 magnitude star Delta Scorpii ill be occulted by the Moon. We are on the very edge of the observing range for this event.**
September 4	**First-quarter Moon, 1:39 p.m.**
September 12	**Full Moon, 5:27 a.m.**
September 16	**Jupiter is to the right of the Moon, asteroid Ceres is at opposition**
September 20	**Last Quarter Moon, 9:39 a.m.**
September 23	**Autumn begins at 5:05 a.m.**
September 25/26	**Uranus is at opposition**
September 27	**New Moon, 7:09 a.m.**

The best sights this month: Saturn exits stage right as Jupiter enters stage left in the wonderful play of the night sky! And if you are willing to get up before the Sun you have an excellent opportunity to see Mercury during September.

Mercury: Mercury is at greatest elongation from the Sun on September 3rd when it rises about an hour and a half before the Sun. It will be low in the east and shining at about magnitude -1.0, quite bright for this small planet.

Venus: Our sister planet is too close to the setting Sun to be seen during September. Look for the "evening star" in October.

Mars: The red planet is rising around 2 a.m. during September, too late for me! But if you have your heart set on seeing Mars get up just before the sky begins to brighten with the coming dawn, when Mars will be reasonably high in the sky.

Jupiter: The king of the planets is best viewed late, around 11 p.m. or midnight during the later half of September and later still early in the month. But what a sight it is! Look for the four bright moons that change position from night to night, even hour by hour.

Saturn: Alas, we bid adieu to the beautiful ringed planet until next spring. What great times we had together this summer!

Uranus and Neptune: Uranus is at opposition on September 25th. September is ideal for seeking Uranus since it rises at sunset and sets at dawn. Using a chart available from skyandtelescope.com you can find Uranus with your naked eyes, appearing as a "star" in the southern sky. But if you use a set of binoculars you will be able to see the green disk of the planet and you'll be certain you are seeing Uranus.

And in case you are wondering, the standard way to pronounce Uranus among astronomers is to put the emphasis on the first syllable "ur" and then say the second part "unus". This is the standard literary pronunciation. The more common way people have pronounced it is u-ra-nus, with the "ra" spoken as "ray". The truth is that all the different ways of pronouncing Uranus are perfectly fine, even the way that sounds like a part of your anatomy that we usually avoid talking about.

Neptune is well placed for telescopic viewing during September. You will also find a sky map to find Neptune at skyandtelescope.com. I was thrilled to see Neptune during August, thanks to the help of our Program Chairperson fine tuning the aiming of our "go to" Dobsonian telescope. It is indeed a rare and beautiful sight!

The Moon: Full Moon occurs on September 12th. This full Moon is the Harvest Moon because it is the full Moon that occurs closest to the autumn equinox. In two years out of three, the Harvest Moon comes in September, but in some years it oc-

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Book Review (cont'd)

(Continued from page 3)

arms his audience with enough knowledge to shop for a quality refractor with a fair degree of confidence.

He dwells just long enough on optics and its math to give the basics behind the Fraunhofer, Clark, Cooke and Littrow designs. He provides a very interesting overview of the history of the refractor telescope, emphasizing how long focal length refractors were used in the 18th century astronomical observations.

These astute observations were made with instrumental focal ratios as long as F/50 and focal lengths of 150 feet in some very successful attempts to reduce false color. He points out how such scopes were able to discern details of Saturn's rings and Mars' rotational characteristics in the budding years of astronomical research.

English educates his reader with anecdotal references from telescope collectors that can generate passion for seeking out such instruments, or at least, traveling to where they can be seen and possibly gazed through. In the chapter "Going Retro" he relates how a 9" Clark refractor that was built in 1915 was literally given away by a university in the 1970's just before loading it on a truck for disposal in a dump.

Crown and flint, fluorite, Ohara, Hoya, the ED doublet, triplet and 4-element designs are all duly explained in understandable language, noting their strengths and applications. Spending some time on the color free, flat field Tele Vue Genesis 4" F/5 four-element modified Petzval and other milestones of design, English has a knack for preparing the enthused beginner for what many have already come to recognize as a life changing journey.

Accessories are given due credit including selecting eyepieces, mounts and use of filters. The lens designs for binoculars and sport optics are summarized, also.

Readily admitting that the refractor market is too broad and advancing too quickly to address fully all makes and models, especially regarding the developing shorter focal length larger aperture Apo market, English picks and chooses what he reviews wisely.

Similarly this reviewer is faced with the task of mentioning only highlights of a book that really encompasses more information than that which a review can do justice. The major players like APM, Astro-Physics, Pentax, Stellarvue, Tele Vue, Vixen, Celestron, Orion and others are represented, as well as, lesser known names to the beginner such as Bresser, Swift, or D&G and he gives a respectful bow to Unitron for its "beautiful, high specification" renowned performing achromats.

It's obvious that he has a particular affinity for the Russian made 4" F/10 Tal 100R often referencing it when reviewing other scopes. To expand the scope (pun intended) of his reviewing, he relies on actual user comments by seasoned amateurs such as Pollux Chung, Karl Krasley or Clive Gibbons so as to give the reader more than a one author viewpoint.

Bear in mind also that this book was published in 2011 and as such has value for today's market. His most detailed review is an 8 page report on a Skylight F/15 4" Fraunhoffer achromatic doublet, his personal favorite… and a mouthwatering review it is.

As with every book I've read in this series, Springer's proclivity for grammatical errors and just plain missing words is evident, although much less so than in others in their collection.

The read can be quick, or one can dwell on specifics where unfamiliarity is encountered. It's both an informational review of many of the latest refractor telescopes as well as a casual walk through many readers' chosen avocation.

Choosing and Using a Refracting Telescope is currently available on Amazon.com, with a list price of $39.95, but discounted to $32.54.

A Dazzling View of the Necklace Nebula

by STScI, Baltimore, Maryland

In this composite image, taken July 2, 2011, Hubble's Wide Field Camera 3 captured the glow of hydrogen (blue), oxygen (green), and nitrogen (red).

Image credit: NASA/ESA/the Hubble Heritage Team (STScI/AURA)

A giant cosmic necklace glows brightly in the NASA Hubble Space Telescope image.

The object, aptly named the Necklace Nebula, is a recently discovered planetary nebula, the glowing remains of an ordinary, Sun-like star.

The nebula consists of a bright ring, measuring 12 trillion miles (19 trillion kilometers [2 light-years]) across, dotted with dense, bright knots of gas that resemble diamonds in a necklace. The knots glow brightly due to absorption of ultraviolet light from the central stars.

A pair of stars orbiting close together produced the nebula, also called PN G054.2-03.4. About 10,000 years ago, one of the aging stars ballooned to the point where it enveloped its companion star. This caused the larger star to spin so fast that much of its gaseous envelope expanded into space. Due to centrifugal force, most of the gas escaped

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Observing Highlights (cont'd)

(Continued from page 5)

curs in October. At the peak of harvest, farmers can work late into the night by the light of this Moon. Usually the full Moon rises an average of 50 minutes later each night, but for the few nights around the Harvest Moon, the Moon seems to rise at nearly the same time each night: just 25 to 30 minutes later across the U.S., and only 10 to 20 minutes later for much of Canada and Europe.

Constellations: The September sky is dominated by the constellations of the Summer Triangle, Lyra, Cygnus and Aquila. But stay out a little later and the Great Square of Pegasus is rising and you can find our neighbor galaxy Andromeda with binoculars. A bit later yet and you will get a preview of the fall and winter constellations with the beautiful Pleiades leading the charge.

Messier/deep sky: September is your last chance of 2011 to catch the Messier objects in the southern constellations of Sagittarius and Scorpius. If you can find a clear view of the southern horizon you can find M4, M6, M7, M17, M8 and M22. On the other side of the sky, if you stay out late, you can catch the star clusters in Auriga rising: M36, M37 and M38.

Comets: Comet Garradd, glowing at magnitude 7, passes near the Coat Hanger Cluster on the

(Continued on page 12)

Through the Eyepiece: The Crescent Nebula, NGC 6888 in Cygnus

by Don Knabb, CCAS Secretary & Observing Chair

September is a wonderful time of the year for stargazing. It is finally getting dark at a reasonable hour so that we have time for stargazing between when darkness falls and bedtime. And, the sky is often clear and cool, but not so cold that one cannot handle the cold metal parts of a telescope.

One of my favorite parts of the sky is the Summer Triangle. It is full of interesting objects for naked eye, binocular and telescopic observing. And in particular I like staring into the constellation Cygnus the Swan. The shape of Cygnus is distinctive so it is easily shared with novice stargazers at a star party. And all you need to do is lie down on your back and grab a pair of binoculars then look straight up into Cygnus to fill your eyes with thousands of stars.

Cygnus is a northern constellation lying on the plane of the Milky Way. One of the most recognizable constellations of the northern summer and autumn night sky, it features a prominent asterism known as the Northern Cross. Cygnus was among the 48 constellations listed by the 2nd century astronomer Ptolemy, and it remains one of the 88 modern constellations.

Looking at the star chart of Cygnus you will see NGC 6888 located on the line from the belly of the swan to the head. That object is also known as The Crescent Nebula.

NCC 6888 is a visually interesting object. It's northeast to southwest halo is unevenly illuminated; the brightest portion an arc along the north side. A multitude of Milky Way star fields shine through the nebula, including a bright keystone with 9th and 10th magnitude stars forming the east side and two 7th magnitude stars forming the west. You can see this slightly out of shape keystone in Dave Hockenberry's photo of the nebula. The two bright stars at the center and left side of the nebula form the top of the keystone, and the dimmer two stars at the bottom of the left side of the nebula form the bottom of the keystone. That asterism should make finding this dim object a bit easier.

This is a dim object that is best seen with as large a telescope as you can get your hands on. It shines at magnitude 7.4, so dark

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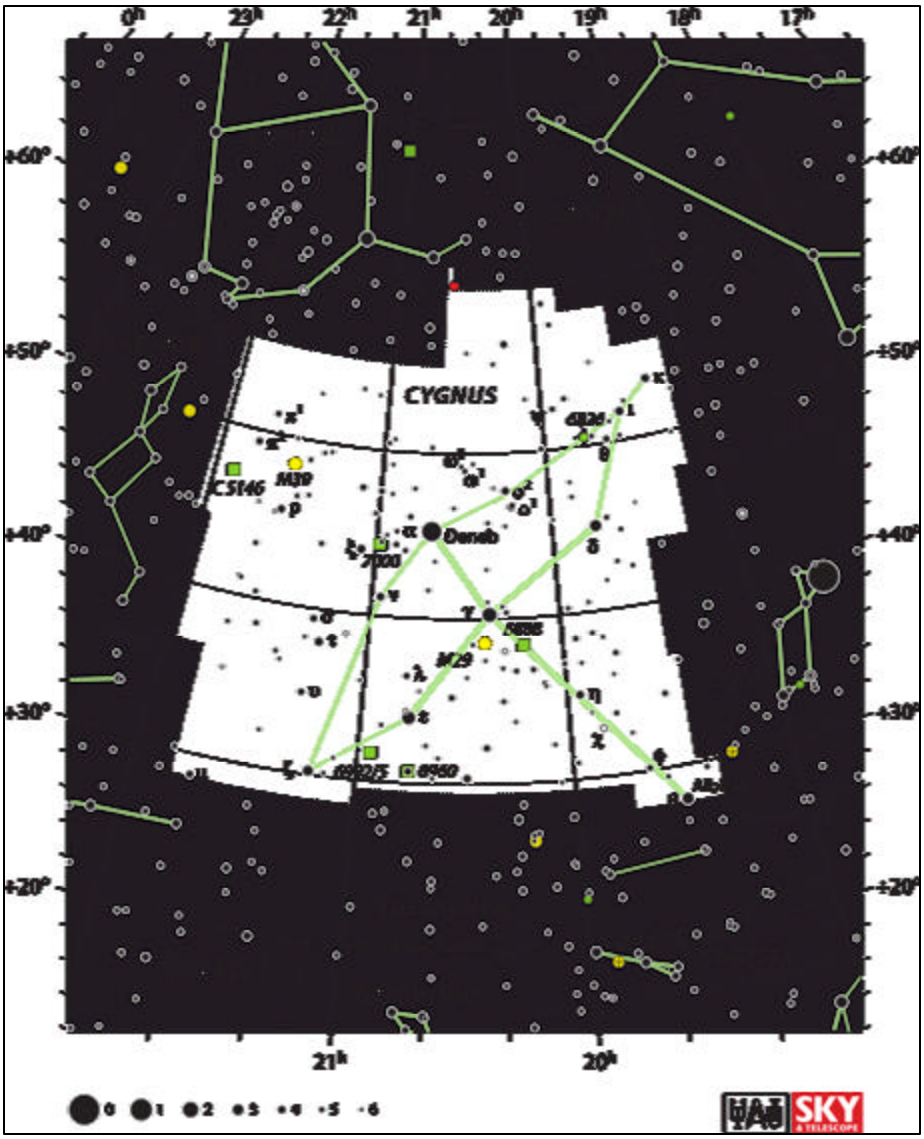

Image credit: http://en.wikipedia.org/wiki/Cygnus

Through the Eyepiece (cont'd)

(Continued from page 8)

skies and averted vision will help bring out the shape of this dim fuzzy object. The nebula appears as a crescent in many telescopes because most of the object is barely visible, just the bright outer "crescent" portion is seen in the eyepiece.

The Crescent Nebula is about 4,700 light years away and is a cosmic bubble formed by the vast stellar wind from the Wolf-Rayet star HD 192163, also known as WR 136. It is a rare planetary nebula surrounding a Wolf-Rayet star. In 1867, the French team Wolf-Rayet identified a class of stars, such as this central star, as massive stars (large stars over 20 times the mass of our sun) which are at a stage of their life where they are losing their mass rapidly by means of very strong stellar winds (speeds up to 4 ½ million miles per hour).

A planetary nebula is a shell of gas that has been shed by a star late in its lifetime. WR 136 is shedding its outer envelope, ejecting the equivalent of the Sun's mass every 10,000 years. This stellar wind is colliding with and energizing a slower-moving wind ejected by the star when it became a red giant around 400,000 years ago. The result of the collision is a shell about 25 light years across. Two shock waves, one moving outward and one moving inward, heat the stellar wind to X-ray emitting temperatures. The central star WR 136 will eventually, in the next million years, go supernova with a final bright burst of gamma rays and then collapse in a final death throe when the core of the star collapses to form a black hole, pulling in the surrounding material.

Information credits:

iPad application Sky Safari Pro
http://apod.nasa.gov/apod/ap090915.html
http://www.noao.edu/image_gallery/html/im0834.html
http://www.astropix.com/HTML/E_SUM_N/NGC6888.HTM
http://lloydbentsen.com/photo_album8.html

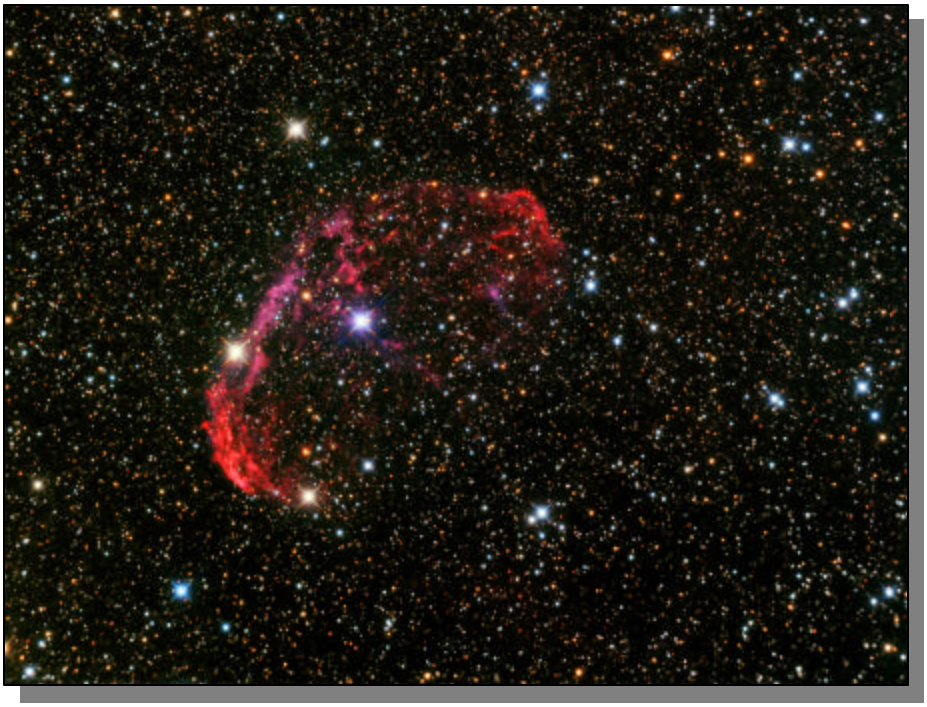

Image credit: Dave Hockenberry, CCAS Program Chair

NGC6888 Crescent Nebula. Shot 8/17/11 and 8/22/11 with QSI 583 wsg camera through AstroTech AT8RC telescope at 1625mm FL, AP 1200 mount, autoguided with SX Lodestar off-axis. Image acquisition with MaxIm DL5. Calibrated, stacked, and deconvolved and RGB creation in CCDStack. L-RGB merge and further adjustments in Photoshop CS3. Stack of 90 minutes Luminance, 40 minutes each Red, Green and Blue Astrodon filters. FITS Liberator courtesy of ESA.

Necklace Nebula (Cont'd)

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along the star's equator, producing a dense ring. The embedded bright knots are the densest gas clumps in the ring.

The stars are furiously whirling around each other, completing an orbit in a little more than a day. (For comparison, Mercury takes 88 days to orbit the Sun.)

The Necklace Nebula is located 15,000 light-years away in the constellation Sagitta the Arrow.

Solar System Size Surprise

by Dr. Tony Phillips

News flash: You may be closer to interstellar space than you previously thought.

A team of researchers led by Tom Krimigis of the Johns Hopkins University Applied Physics Laboratory announced the finding in the June 2011 issue of *Nature*. The complicated title of their article, "Zero outward flow velocity for plasma in a heliosheath transition layer," belies a simple conclusion: The solar system appears to be a billion or more kilometers smaller than earlier estimates.

The recalculation is prompted by data from NASA's Voyager 1 probe, now 18 billion kilometers from Earth. Voyagers 1 and 2 were designed and built and are managed by NASA's Jet Propulsion Laboratory.

Aging but active, the spacecraft have been traveling toward the stars since 1977 on a heroic mission to leave the solar system and find out what lies beyond.

To accomplish their task, the Voyagers must penetrate the outer walls of the heliosphere, a great bubble of plasma and magnetism blown in space by the solar wind. The heliosphere is so big, it contains all the planets, comets, and asteroids that orbit the sun.

Indeed many astronomers hold that the heliosphere defines the boundaries of the solar system. Inside it is "home." Outside lies the Milky Way. For 30+ years, the spacecraft have been hurtling toward the transition zone. Voyager 1 is closing in.

Much of Voyager 1's long journey has been uneventful. Last year, however, things began to

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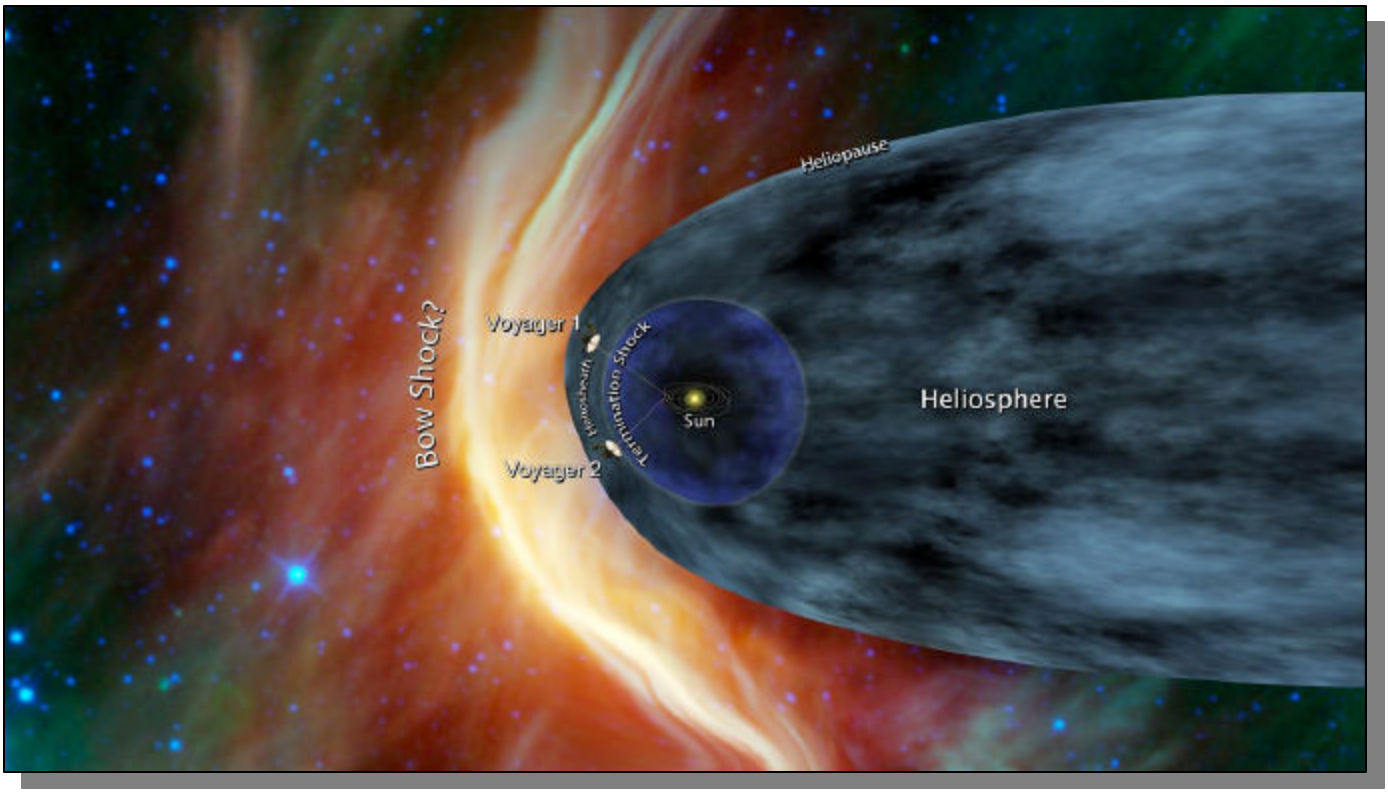

This artist's concept shows NASA's two Voyager spacecraft exploring a turbulent region of space known as the heliosheath, the outer shell of the bubble of charged particles around our sun. Image credit: NASA/JPL-Caltech.

Space Place (Cont'd)

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change. In June 2010, Voyager 1 beamed back a startling number: zero. That's the outward velocity of the solar wind where the probe is now.

"This is the first sign that the frontier is upon us," says Krimigis.

Previously, researchers thought the crossing was still years and billions of kilometers away, but a new analysis gave them second thoughts. Krimigis and colleagues combined Voyager data with previously unpublished measurements from the Cassini spacecraft. Cassini, on a mission to study Saturn, is nowhere near the edge of the solar system, but one of its instruments can detect atoms streaming into our solar system from the outside. Comparing data from the two locations, the team concluded that the edge of the heliosphere lies somewhere between16 to 23 billion kilometers from the sun, with a best estimate of approximately 18 billion kilometers.

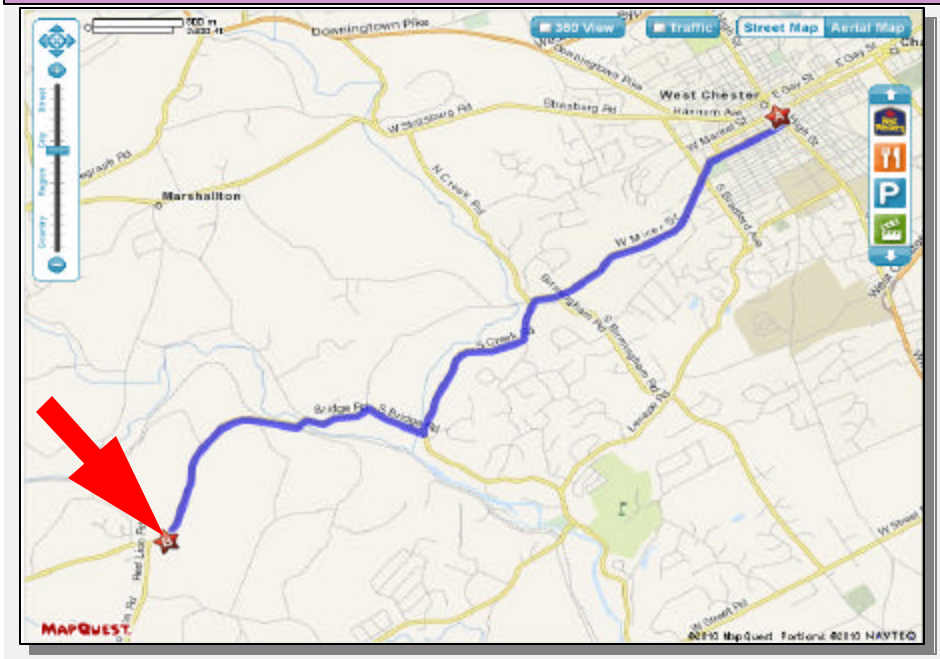
Because Voyager 1 is already nearly 18 billion kilometers out, it could cross into interstellar space at any time—maybe even as you are reading this article.

"How close are we?" wonders Ed Stone, Caltech professor and principal investigator of the Voyager project since the beginning. "We don't know, but Voyager 1 speeds outward a billion miles every three years, so we may not have long to wait."

Stay tuned for the crossing.

For more about the missions of Voyager 1 and 2, see http://voyager.jpl.nasa.gov/. Another Voyager project scientist, Merav Opher, is the guest on the newest Space Place Live cartoon interview show for kids at http://spaceplace.nasa.gov/space-place-live.

CCAS Directions



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

BVA was founded in 1945 and is committed to promoting and protecting the natural resources of the Brandywine Valley through educational programs and demonstrations for all ages.

Brandywine Valley Association

The monthly observing sessions (held year-round) are held at the Myrick Conservation Center of the Brandywine Valley Association.

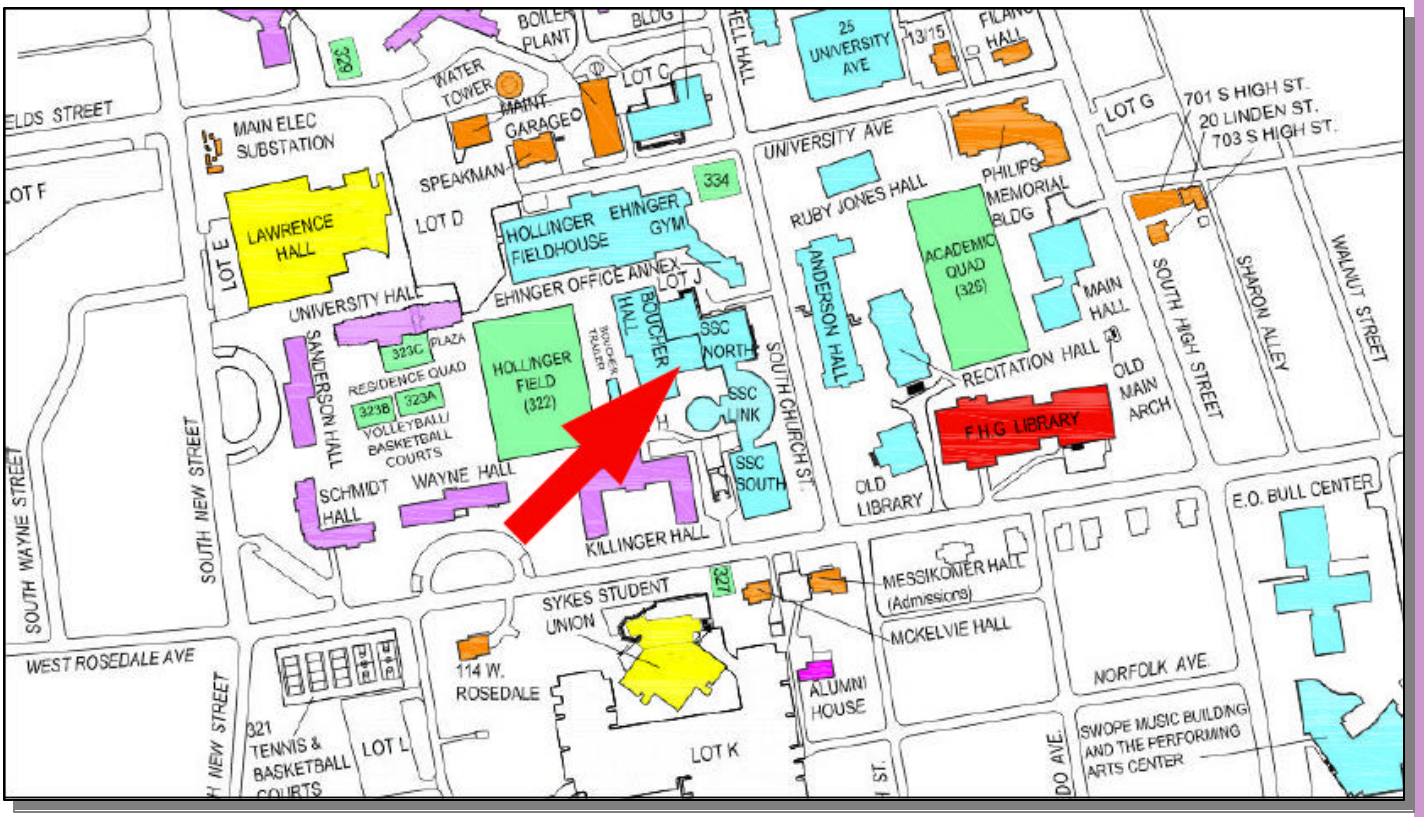
To get to the Myrick Conservation Center from West Chester, go south on High Street in West Chester past the Courthouse. At the next traffic light, turn right on Miner Street, which is also PA Rt. 842. Follow Rt. 842 for about 6 miles. To get to the observing site at the BVA property, turn left off Route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



Observing Highlights (cont'd)

(Continued from page 7)

evenings of September 2nd and 3rd. A finder chart is in the September issue of Astronomy magazine.

It is possible that Comet Elenin could brighten to magnitude 6 next month, so stay posted to your favorite astronomy internet sites for breaking news on this visitor to the inner solar system.

Meteor showers: There are no significant meteor showers during September.

CCAS Membership Information and Society Financials

Treasurer's Report
by Liz Smith

July 2011 Financial Summary

Beginning Balance	$1,816
Deposits	$40
Disbursements	$0
Ending Balance	$1,856

New Member Welcome!

Welcome new CCAS member Garret Bullard of West Chester, 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

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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

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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 President and Observing:	Don Knabb 610-436-5702
ALCor and Treasurer:	Liz Smith 610-842-1719
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 724-801-8789
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.**