Observations

2006 Winner of the Astronomical League's
Mabel Sterns Best Newsletter Award

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CHESTER COUNTY ASTRONOMICAL SOCIETY

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Visit our website at www.ccas.us

In This Issue

Important June 2007 Dates

8 Last Quarter Moon.

12/13 Venus buzzes the Beehive Cluster.

14 New Moon.

15/16 **CCAS Observing Session**
Location: Brandywine Valley Association
Time: sunset, or earlier (see page 4).

21 **Summer Solstice at 2:06 p.m. EDT.**
Summer starts in Chester County!

22 First Quarter Moon, 5:03 p.m. EDT.

30 Full Moon—the Strawberry Moon.

30 Venus and Saturn very close together in the evening sky.

Lunar X image by Vic Long

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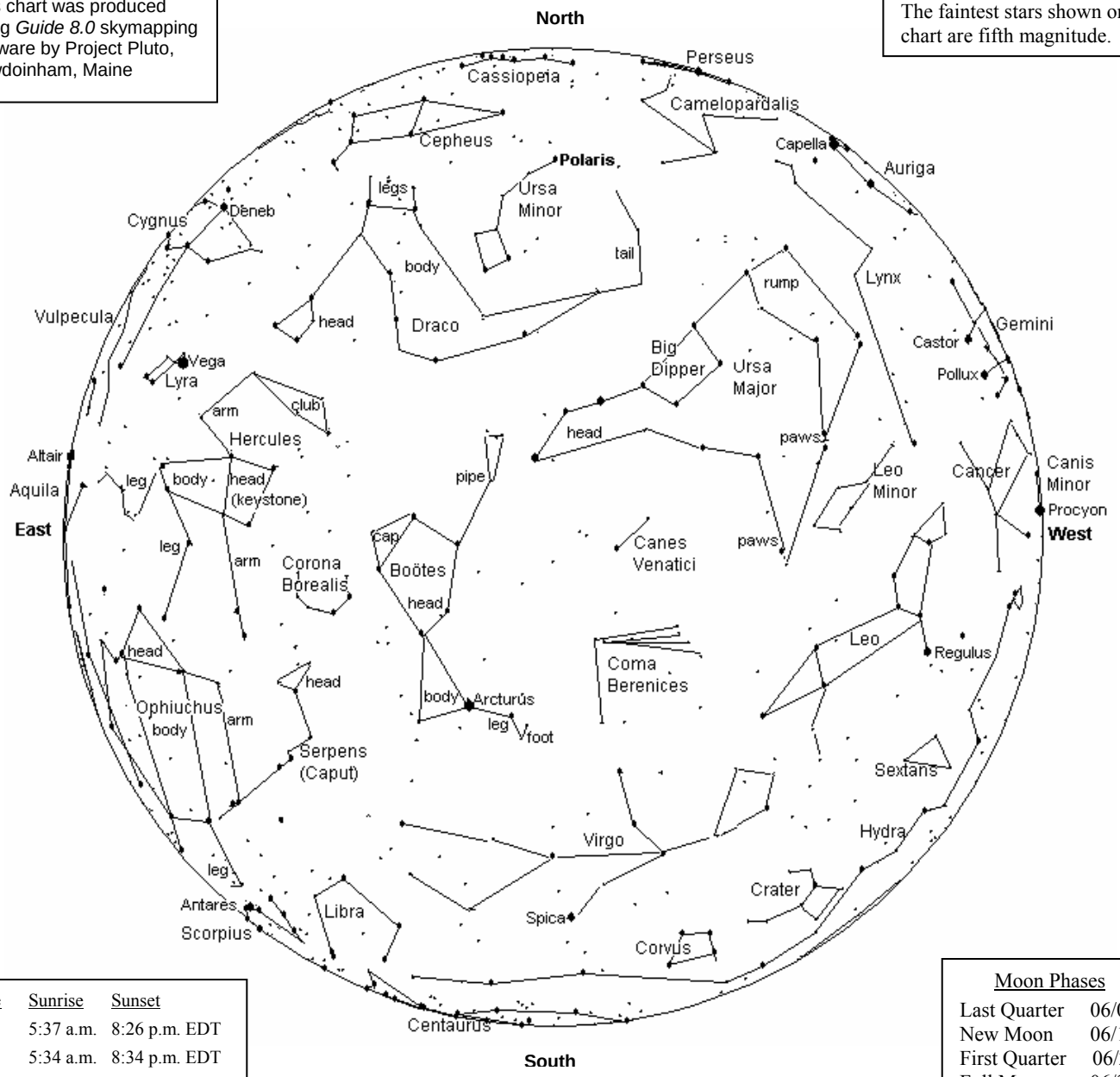
This chart was produced using *Guide 8.0* skymapping software by Project Pluto, Bowdoinham, Maine

The faintest stars shown on this chart are fifth magnitude.



Date	Sunrise	Sunset
6/1	5:37 a.m.	8:26 p.m. EDT
6/15	5:34 a.m.	8:34 p.m. EDT
6/30	5:38 a.m.	8:36 p.m. EDT

Moon Phases	
Last Quarter	06/08
New Moon	06/14
First Quarter	06/22
Full Moon	06/30

The sky over Chester County

June 15, 2007 at 9:00 p.m. EDT

The Planets, by Don Knabb

Mercury: For a glimpse of Mercury in the evening glow of sunset take a look early in June. As June progresses it will be increasingly harder to see Mercury.

Venus: Venus continues its wonderful show and is a beacon in the west as the sun sets and for quite a time after it is fully dark. Although Venus is no longer at its peak altitude in the west it will be showing a "quarter moon" type of profile in a telescope. On June 12 and 13 it will skim the northern edge of M44, the Beehive Cluster. This should make for quite a show in binoculars or a wide field telescopic view! And at month's end Venus and Saturn are very close in the sky!

Mars: Mars is a dim speck low in the glow of the sunrise. Wait until later in the summer to enjoy the Red Planet.

Jupiter: The King of the Planets is now visible without staying out late. It rises around sunset, transits at midnight and sets around sunrise. Watch the dance of its moons from night to night!

Saturn: On June 18 Saturn will be very close to the Moon. This is a great photo opportunity for you astrophotographers! And don't miss the close encounter between Saturn and Venus on June 30. They will be only 2/3º apart!

Uranus & Neptune: The outer gas giants rise after midnight and are well placed for observing before dawn. Finder charts will be available in the July issue of Sky and Telescope.

Pluto: The 14th magnitude "ex-planet" is in Sagittarius during June, but remains a very difficult target in Chester County skies.

Note: the constellation stick figures used on the chart above were adapted from the book *The Stars: A New Way to See Them*, by H. A. Rey. This excellent guide to learning the constellations can be purchased at many area book stores, or from online booksellers.

June Observing Highlights

by Don Knabb, CCAS Observing Chair

Planets: The planetary highlights are brilliant Venus and the ringed beauty Saturn in the evening skies, with mighty Jupiter rising around sunset and remaining visible all night.

Asteroids: Vesta, the brightest asteroid, is at naked-eye brightness (well, maybe not in the skies close to West Chester) early in June, shining far brighter than any other main-belt asteroid ever can. The June issue of *Sky and Telescope* has a finder chart to help locate this unusual target.

Constellations: Yes, we must stay out late just to see the stars in June, but at least it's warm and we have the "stars of the lawn," the fireflies, to keep us company as we nibble on strawberries and gaze at the stars. Leo is now starting to head for the western horizon, but Hercules is well up at 10:00 pm. The summer triangle and all the rich star fields of the Milky Way are rising in the east, and with a good southern horizon we can see the wonders that are in Sagittarius near the center of the galaxy.

Deep sky: I know there are many nice other globular clusters, but M13 in Hercules is an amazing object if the skies are dark and clear. As Dave Bowman said as he looked into the monolith in orbit around Jupiter in the movie *2001, A Space Odyssey*, "Oh my God, it's full of stars!" That's how I feel when I get a good look at M13. Then look low in the south to find M8, the famous Lagoon Nebula and M17, the Omega Nebula.

Meteor shower: There are no meteor showers in June. Save up your meteor watching for the Perseid shower in August.

June 8	Last quarter Moon, 7:43 a.m.
June 12/13	Venus skims the Beehive Cluster.
June 14	New Moon, 11:13 p.m.
June 21	Summer Solstice at 2:06 p.m.
June 22	First quarter Moon, 5:03 p.m.
June 30	Full Moon at 9:49 a.m. The Strawberry Moon, yum!
June 30	Venus and Saturn are very close in the evening sky.

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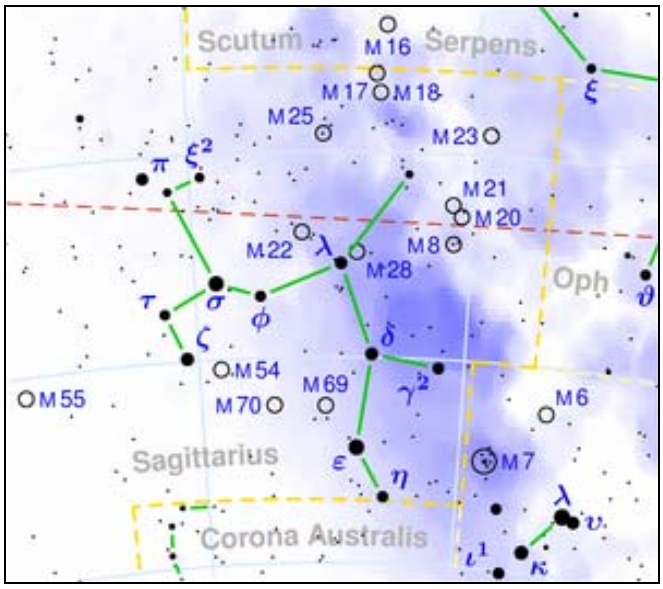
Through the Eyepiece: M22

by Don Knabb, CCAS Observing Chair

With summer not far off we now get our best view of the southern constellations. In Sagittarius is Messier 22, also known as M22 or NGC 6656. M22 is the third brightest and most easily resolved globular cluster in the sky. M22 is the nearest globular cluster to Earth and is approximately 10,000 light years from us. It contains at least a half a million stars.

M22 is a very remarkable object. M22 is easily viewed with any set of binoculars and individual stars can be resolved in a telescope at least four inches in diameter. Under good conditions at higher magnification you will see an eyepiece full of stars with a bright central region.

It's not hard to find M22. Late at night during June, or a bit earlier in July and August find a viewing location with a clear southern horizon. Look for the "teapot" of Sagittarius. Just to the left of the star that is the top of the lid of the teapot is a fuzzy spot. In a dark sky location M22 is a naked eye object, but you'll need your binoculars to see it in Chester County skies.



Map source: http://en.wikipedia.org/wiki/Image:Sagittarius_constellation_map.png

In the chart above the red dashed line is the ecliptic. With M22 so close to it we are occasionally treated to conjuctions with planets.

M22 is an elliptical globular cluster. It was one of the first globulars to be discovered in 1665 by Abraham Ihle and it was included in Charles Messier's catalog of comet-like objects in 1764. The cluster lies a third of the way between Earth and the center of the Milky Way and is home to some the oldest stars in the universe.

Photo credit: N.A.Sharp, REU program, NOAO/AURA/NSF (Kitt Peak)

Information sources for M22:
http://en.wikipedia.org/wiki/Messier_22
http://www.seds.org/messier/m/m022.html
http://www.stardoctor.org/M22.html
Pasachoff, Jay M. 2000. *A Field Guide to the Stars and Planets.* New York, NY. Houghton Mifflin.
Dickinson, Terence 2006. *Nightwatch: a practical guide to viewing the universe*. Buffalo, NY. Firefly Books

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CCAS Election Results

These are the officers elected at the May meeting:

President: Kathy Buczynski

Vice-president: Jim Anderson

Secretary: Don Knabb

Treasurer: Bob Popovich

We extend a big "thank you" to Vic Long, our outgoing Secretary, for helping the Society in that way for the last two years. The newly elected officers two-year term of office begins June 1, 2007.

We also extend a big "thank you" to **Marty Bower** and **Ken Reynolds**, who served as the Election Committee!

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CCAS Observing Session June 15/16, 2007

Note: in June, July and August the CCAS does not hold a regular meeting. The monthly Observing Sessions are the only Society activities in the summer months, although we have special summer events from time to time.

CCAS Observing Sessions are held at the Brandywine Valley Association's Myrick Conservancy Center (see map on page 12) on Fridays starting at sunset; or earlier, if you can get there earlier. If it's too cloudy on Friday, then the Observing Session will be on the next day, Saturday. At the observing sessions, there will be help available to set up and use your telescopes. If you're having trouble using your telescope, or finding your way around the sky, come on out and get some assistance. All members are invited whether they have a telescope or not. Telescope owners are always glad to share the view through their telescope. CCAS Observing Sessions are free of charge and open to the public.

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Minutes from CCAS May Meeting

by Don Knabb, CCAS Observing Chair

For the meeting held on Tuesday May 8, 2007.

Constellation of the Month:

There was no COM presentation this month.

Main Presentation:

Dr. Fiona Hoyle from Widener University presented "The Largest Objects in the Universe," a discussion on galaxies and groups of galaxies.
Widener University holds public viewing sessions. Go to **www.widener.edu/publicviewing** for details.

Education (Kathy Buczynski):

One class remains for the spring season. Planning is ongoing for fall classes with the idea being to focus on observing skills

Observing (Don Knabb):

May 18th is the next planned observing session at Anson B. Nixon Park in Kennett Square. Also, a summer picnic in search of the elusive Lunar X is being planned for July 21 at the Knabb observing circle.

Website (John Hepler):

John continues to fine tune the web site with our new host company. If you think you are not getting "members" e-mails, contact John so he can verify that your e-mail address is correctly set up in the system.

Alcor (Bob Popovich):

The Mid Eastern Astronomical League is looking for board members. Please contact Bob Popovich if you are interested.

Treasurer (Bob Popovich):

Sky & Telescope renewals will be handled differently. We will send checks to *Sky & Telescope* and they will verify our membership with Bob Popovich.

Library (Ed Lurcott):

A new library list was sent to John for the website.

Programs (Jim Anderson):

The PA Outdoor Lighting Council is lined up for September. If anyone has ideas for programs please contact Jim.
We also need volunteers for Constellation of the Month for the fall meetings.

US Naval Observatory trip:

The Naval Observatory trip is not working out. There seems to be more interest to return to the Hayden Planetarium in NYC. There is a NASA artwork exhibit underway now. The idea of a bus trip on a weekend was discussed.

PA Outdoor Lighting Council:

Ed and Kathy attended the May meeting. The Council wants to contact local governments to get regulations in place to control light pollution.

Hercules Cluster:

The Hercules Cluster will start up again this summer. Kathy will follow up with a Members note.

International Sidewalk Astronomy Day:

The first international sidewalk astronomy day was held May 19, 2007. We were not able to have an organized participation this year, but will plan something for 2008.

Election:

The votes were counted and Kathy, Bob and Jim were reelected. Don Knabb replaces Vic Long as Secretary.

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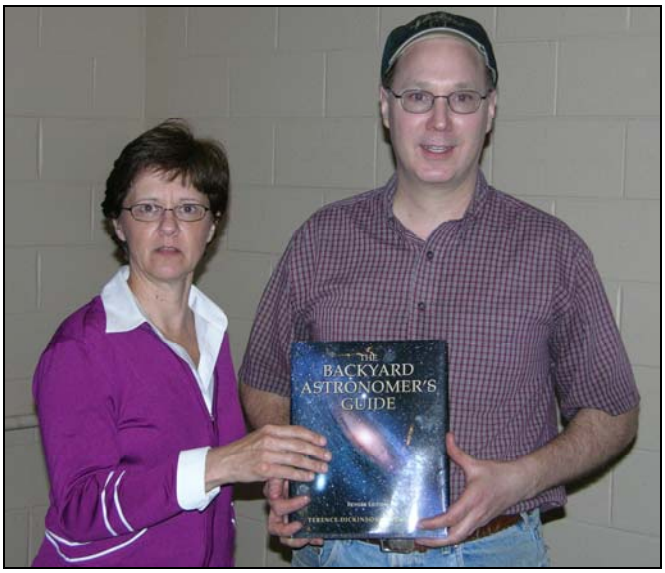
July and August Observing Sessions

July 13/14, 2007 (Friday/Saturday)	CCAS Observing Session Location: Brandywine Valley Assoc. sunset
August 17/18, 2007 (Friday/Saturday)	CCAS Observing Session Location: Brandywine Valley Assoc. sunset

CCAS Introductory Astronomy Class

The Education Committee of the CCAS finished up the Introductory Astronomy class on May 15. Here are the winners of the door-prize drawings for astronomy books.



CCAS President Kathy Buczynski presents *The Backyard Astronomer's Guide*, by Terence Dickinson & Alan Dyer, to winner **John VanWagenen.**

Then Kathy presented our second door prize to **Devon Steward**.

We had two door prize drawings for this class because CCAS member Nicholas La Para generously donated two more books to the Education Committee to use as a door prize. These books were given as one prize. The books were *Celestial Sampler*, by Sue French; and *Pocket Star Atlas*, by Roger W. Sinnott. **Thanks Nicholas!**

Congratulations to John and Devon!

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The Search for the Elusive Lunar X Continues!

All CCAS members and families are invited to set up telescopes or just come to stare at the night sky at the Knabb observing circle for a summer observing party on Saturday evening, July 21 at 7:00. We'll be observing the first quarter Moon and other objects such as Venus, Saturn and Jupiter. If we are lucky, we might see the Lunar X!

As we did last year, everyone is invited to bring a snack, appetizer or dessert upon which we can graze between views of the night sky. We'll have soft drinks and beer. Directions will be sent via a "members" email or included with your mailed July newsletter.

Let's get together whether it is clear or cloudy. We can at least share each other's company for a few hours and perhaps view an astronomy related movie if we run out of observing stories.

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Treasurer's Report by Bob Popovich

April 2007 Financial Summary

Beginning Balance	$1,751
Deposits	454
Disbursements	542
Ending Balance	$1,663

Membership Renewals Due

06/2007	Churchman
	Driedyen
	Hebding
	Limeburner
	Mayer-Kielmann
	Moore
	Siskind
07/2007	Scarfo
	Sleeper
	Tobey
08/2007	Fragale
	Knabb
09/2007:	Bogucki
	Holenstein
	Lurcott

Membership Renewals

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

Bob Popovich
416 Fairfax Drive
Exton, PA 19341-1814

The current dues amounts are listed in the *CCAS Information Directory* on page in this newsletter.

Important Notice Regarding *Sky & Telescope* Subscriptions

For members who have current subscriptions through the Society at the special club discount:

You may now renew directly with the publisher—there is no longer a need to send anything to our Treasurer! You can **renew via mail or telephone** (1-800-253-0245). Sky Publishing will confirm your CCAS membership with Bob.

If you wish to **start** a subscription through the Society, you must still send the check to Bob first. This is only for new subscriptions at the special club rate of $32.95 per year. As in the past, this initial check should be made out to Chester County Astronomical Society. Bob will then forward the needed information and payment on to Sky Publishing. But once you are started, you too can renew directly with Sky Publishing in subsequent years.

If you have **any questions** about this **call Bob** at 610-363-8242.

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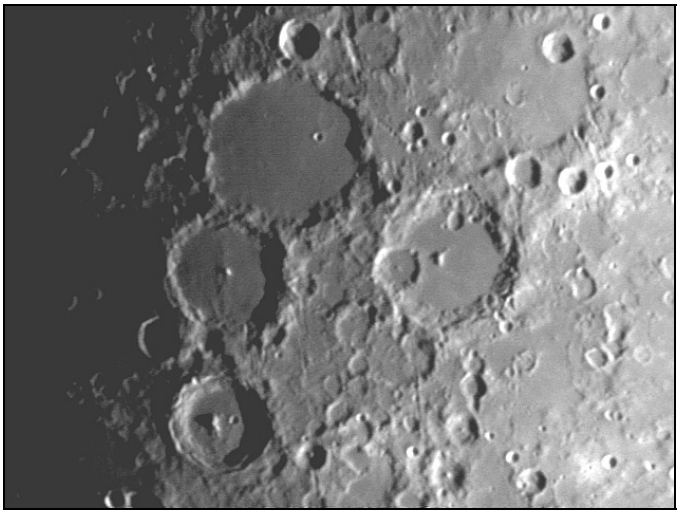
CCAS Members Shoot the Moon

Pete LaFrance captured a very thin crescent moon on May 18, 2007 from his backyard near Avondale.

What is a bit embarassing about this image is that May 18 was the Friday night we were supposed to host a star party at Anson B. Nixon Park. The party was cancelled Friday afternoon at about 1:00 p.m. by Don Knabb and the park superintendent. At that time, the skies were almost completely overcast and all of the several weather forecasts that were consulted said it would stay that way all night. A few hours later the skies cleared, confounding weather forecasters and would-be-star-partiers alike.



On May 24, Vic Long captured this moonscape with a four-inch refracter and a webcam.

Vic's notes: "The three prominent craters on the left side of this photo are (from N to S) Ptolemaeus, Alphonsus and Arzachael.

The floor of Arzachael has been partially flooded with lava, but several small hills and craters are visible.

The rather dark floor of Alphonsus shows several darker patches. Under better lighting, small craters are visible at the center of these patches. At one time these 'dark halo craters' were thought to be volcanic cinder cones, but are now believed to be normal impact craters where the impact explosion has excavated darker mare material. Alphonsus was also the crash-landing site of the U.S. probe Ranger 9.

The northern section of Alphonsus merges into the walled-plain Ptolemaeus. The complex crater Albategnius lies to the SE of Ptolemaeus and contains a prominent central peak. The crater Klein breaks its western wall."

Our thanks to Pete and Vic for sharing these great images with us!

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Astronomus

"Dragon Slayer"

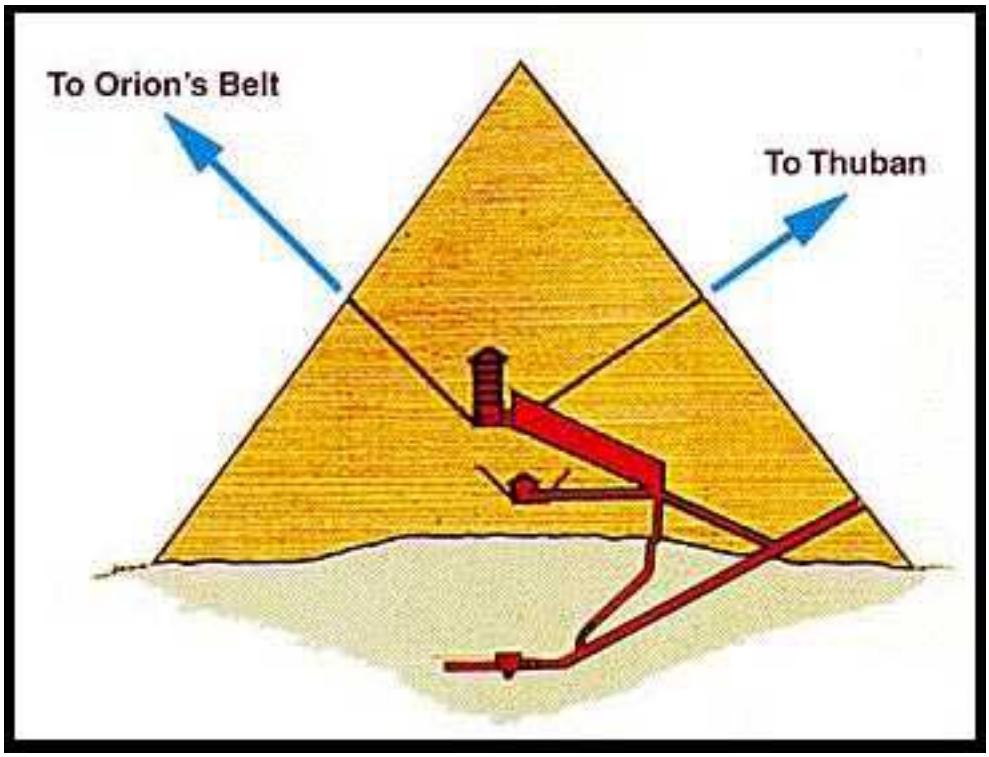
By Bob Popovich

With over four millennia under its wings, Draco occupies a prominent place in the northern hemisphere's circumpolar skies. At its most menacing this time of year, the dragon stares down at us from nearly overhead, challenging astronomers, both amateur and professional, to slay it—if they dare. With an intriguing history and a slate of fine targets, Draco is an adversary well worth the struggle of viewing, even through light-polluted skies.

Winding its way about Ursa Minor, it's a large constellation but one whose stars don't really catch our eye. Yet, Mesopotamian astronomers devised an imposing winged dragon from its chain of stars. The Greek Thales, however, decided to cut the dragon down to size in the 6th century BC by chopping off its wings. A valiant attempt at dragon slaying, but Draco survived. Thales, on the other hand, is dead.

The Egyptians were keenly aware of one of Draco's stars in particular—Thuban (from the Arabic *ath thu'ban*—the snake). You could even say they stalked Thuban. Though officially catalogued as α Draconis, Thuban is actually a full magnitude dimmer than the true α star Eltanin (Eltanin is catalogued as the γ [gamma] star). Does this bug you as much as it does me? Why not just fix this inaccuracy? Couldn't we complain to the same people who de-planeted Pluto?

Anyway, it was one of Egypt's greatest pharaohs, Khufu (Cheops), who wanted to vanquish the dragon in his own way—by being able to view Thuban even in death[1]. Khufu, you see, ordered that a small airshaft in his pyramid be included that pointed directly from his burial chamber to Thuban. A second airshaft was aligned to view Orion's belt. The reason for the orientation towards Orion was simple for Orion was associated with the Egyptian god of life, death and fertility—Osiris.



While one can understand the desire to be associated with the god Osiris (good family, strong resume, etc), what was up with Thuban? Even at Lower Egypt's 24° north latitude, most of what we term the circumpolar stars are visible nearly all year. Because these stars are always visible, the Egyptians considered circumpolar constellations immortal. Still, why Thuban? Why not any one of a number of brighter circumpolar stars? The answer, back then, was easy. Thanks to the procession of the Earth's axis, **Thuban was the pole star**. Think about this when next you observe it.

In our time, Polaris is much closer to the true celestial pole than Thuban was in Khufu's day, but nonetheless they understood the movement of the stars appeared to rotate around a spot near Thuban. That being the case, Thuban represented a very special star indeed. Go out and take a look—you can even sing "King Tut" if you can remember the words.

And fortunately for us non-Egyptians, Draco is a prey that offers additional features of interest:

β Draconis, Rastaban (Arabic for "head of the snake")—Rastaban and Eltanin are the Dragon's eyes. Rastaban has a magnitude of 2.8 and is a class G2 giant. Eltanin is a class K2 star with a magnitude of 2.2. They make a lovely pair of peepers.

ν (nu) Draconis is a dim but attractive double star. It is found in the head of the dragon, about 5 degrees from Eltanin and 3 degrees from Rastaban. This pair of gleaming white jewels are a beautiful sight in binoculars.

If you feel up to the challenge, Aldhibain (η [eta] Draconis) is a binary that requires at least a 6" telescope and some patience as its companion is 5 degrees of magnitude dimmer.

Just for sport scan the area completely to see a number of lovely stellar pairings.

Lastly, Draco contains a splendid planetary nebula that, when you observe it, actually observes you back. Discovered by Sir William Herschel and bearing the catalogue entry of NGC6543, it's well worth a brave attempt at observing. With a relatively high surface brightness and a magnitude of 8.1, the Cat's Eye nebula should be visible with binoculars and is a lovely blue color (to me, at least).

Except for a couple of winter months when part of Draco scrapes the horizon, you can consider dragon hunting season to be year round. No need for the orange vest.

Next Time: In the 'Burbs.

(1) The Egyptians did not have Draco on their celestial maps. The stars of Draco were divided between the hippopotamus and the crocodile on Egyptian starcharts.

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NASA Space Place

The Ions of *Dawn*

By Patrick L. Barry

This summer, NASA will launch a probe bound for two unexplored worlds in our solar system's asteroid belt—giant asteroids Ceres and Vesta. The probe, called *Dawn*, will orbit first one body and then the other in a never-before-attempted maneuver.

It has never been attempted, in part, because this mission would be virtually impossible with conventional propulsion. "Even if we were just going to go to Vesta, we would need one of the largest rockets that the U.S. has to carry all that propellant," says Marc Rayman, Project System Engineer for *Dawn* at JPL. Traveling to both worlds in one mission would require an even bigger rocket.

This is a trip that calls for the *un*conventional. "We're using ion propulsion," says Rayman.

The ion engines for the *Dawn* spacecraft proved themselves aboard an earlier, experimental mission known as *Deep Space 1* (*DS1*). Because ion propulsion is a relatively new technology that's very different from conventional rockets, it was a perfect candidate for *DS1*, a part of NASA's New Millennium Program, which flight-tests new technologies so that missions such as Dawn can use those technologies reliably.

"The fact that those same engines are now making the *Dawn* mission possible shows that New Millennium accomplished what it set out to," Rayman says.

Ion engines work on a principle different from conventional rockets. A normal rocket engine burns a chemical fuel to produce thrust. An ion engine doesn't burn anything; a strong electric field in the engine propels charged atoms such as xenon to very high speed. The thrust produced is tiny—roughly equivalent to the weight of a piece of paper—but over time, it can generate as much speed as a conventional rocket while using only about 1/10 as much propellant.

Artist's rendering of Dawn spacecraft, with asteroids. Largest are Vesta and Ceres. Credits: Dawn spacecraft—Orbital Sciences Corporation; background art—William K. Hartmann, courtesy UCLA.

And *Dawn* will need lots of propulsion. It must first climb into Vesta's orbit, which is tilted about 7 degrees from the plane of the solar system. After studying Vesta, it will have to escape its gravity and maneuver to insert itself in an orbit around Ceres—the first spacecraft to orbit two distant bodies. *Dawn's* up-close views of these worlds will help scientists understand the early solar system.

"They're remnants from the time the planets were being formed," Rayman says. "They have preserved a record of the conditions at the dawn of the solar system."

Find out about other New Millennium Program validated technologies and how they are being used in science missions at:
http://nmp/TECHNOLOGY/infusion.html

While you're there, you can also download "Professor Starr's Dream Trip," a storybook for grown-ups about how ion propulsion enabled a scientist's dream of visiting the asteroids come true. A simpler children's version is available at:
http://spaceplace.nasa.gov/en/kids/nmp/starr.

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

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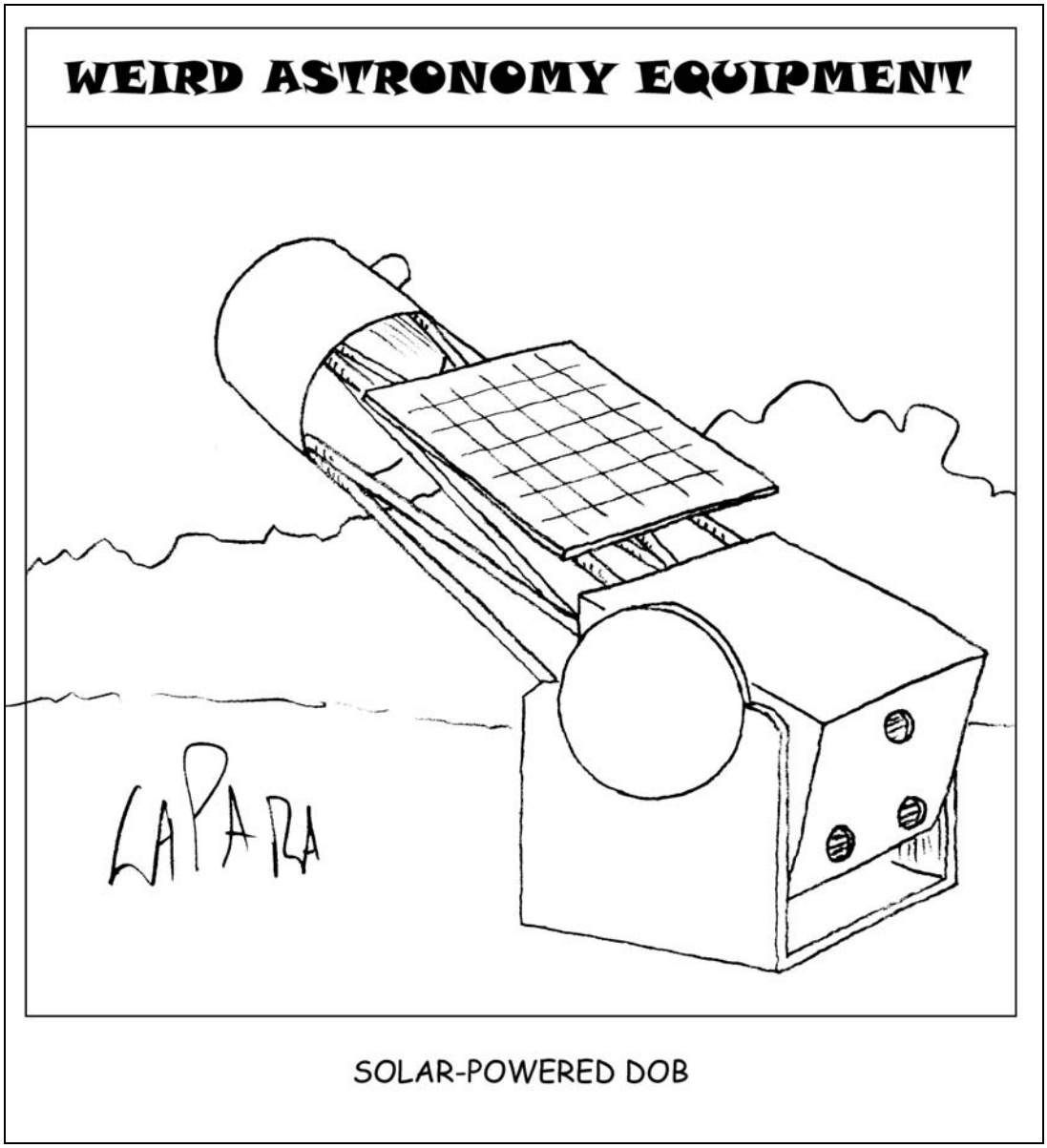

Cartoon by Nicholas La Para

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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

Telephone: 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:

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 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:

www.POLCouncil.org

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Good Outdoor Lighting Website

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? Now there is a web site and business intended to address that very problem. At this site you can find information on all kinds of well-designed (that is, star-friendly) outdoor lighting fixtures. This company, Starry Night Lights, intends to make available all star-friendly fixtures they can find, and information on them, in one place. Check it out, and pass this information on to others. Help reclaim the stars! And save energy at the same time!

http://www.starrynightlights.com/

Local Astronomy Store: *Skies Unlimited*

There is an astronomy equipment store called ***Skies Unlimited*** in our area, in Pottstown to be specific, at:

Suburbia Shopping Center
52 Glocker Way
Pottstown, PA 19465

Telephone: 610-327-3500 **or** 888-947-2673

http://www.skiesunlimited.net/

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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:

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!"

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CCAS Information Directory

CCAS Lending Telescopes

Contact Kathy Buczynski to make arrangements to borrow one of the Society's lending telescopes. CCAS members can borrow a lending telescope for a month at a time; longer if no one else wants to borrow it after you. Kathy's phone number is 610-436-0821.

CCAS Lending Library

Contact our Librarian, Linda Lurcott Fragale, to make arrangements to borrow one of the books in the CCAS lending library. Copies of the catalog are available at CCAS meetings, and on the CCAS website. Linda's phone number is 610-269-1737.

Contributing to *Observations*

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

stargazer1956@comcast.net

Or mail the contribution, typed or handwritten, to:

Jim Anderson
1249 West Kings Highway
Coatesville, PA 19320-1133

Get 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 Jim Anderson, the newsletter editor, at:

stargazer1956@comcast.net

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 copying copyrighted material! Give your contributions to John Hepler (484-266-0699) or e-mail to webmaster@ccas.us

CCAS Purpose

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

CCAS Executive Committee

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

President:	Kathy Buczynski 610-436-0821
Vice Pres:	Jim Anderson 610-857-4751
ALCor and Treasurer:	Bob Popovich 610-363-8242
Secretary:	Don Knabb 610-436-5702
Newsletter:	Jim Anderson 610-857-4751
Librarian:	Linda Lurcott Fragale
Observing:	Don Knabb 610-436-5702
Education:	Kathy Buczynski 610-436-0821
Webmaster:	John Hepler 484-266-0699
Public Relations:	Deb Goldader 610-304-5303

CCAS Membership Information

The present membership rates are as follows:

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

Membership Renewals

Check the Treasurer's Report in each issue of *Observations* to see if it is time to renew your membership. If you are due to renew, you can mail in your renewal check made out to "Chester County Astronomical Society." Mail to:

Bob Popovich
416 Fairfax Drive
Exton, PA 19341-1814

Sky & Telescope Magazine Group Rates

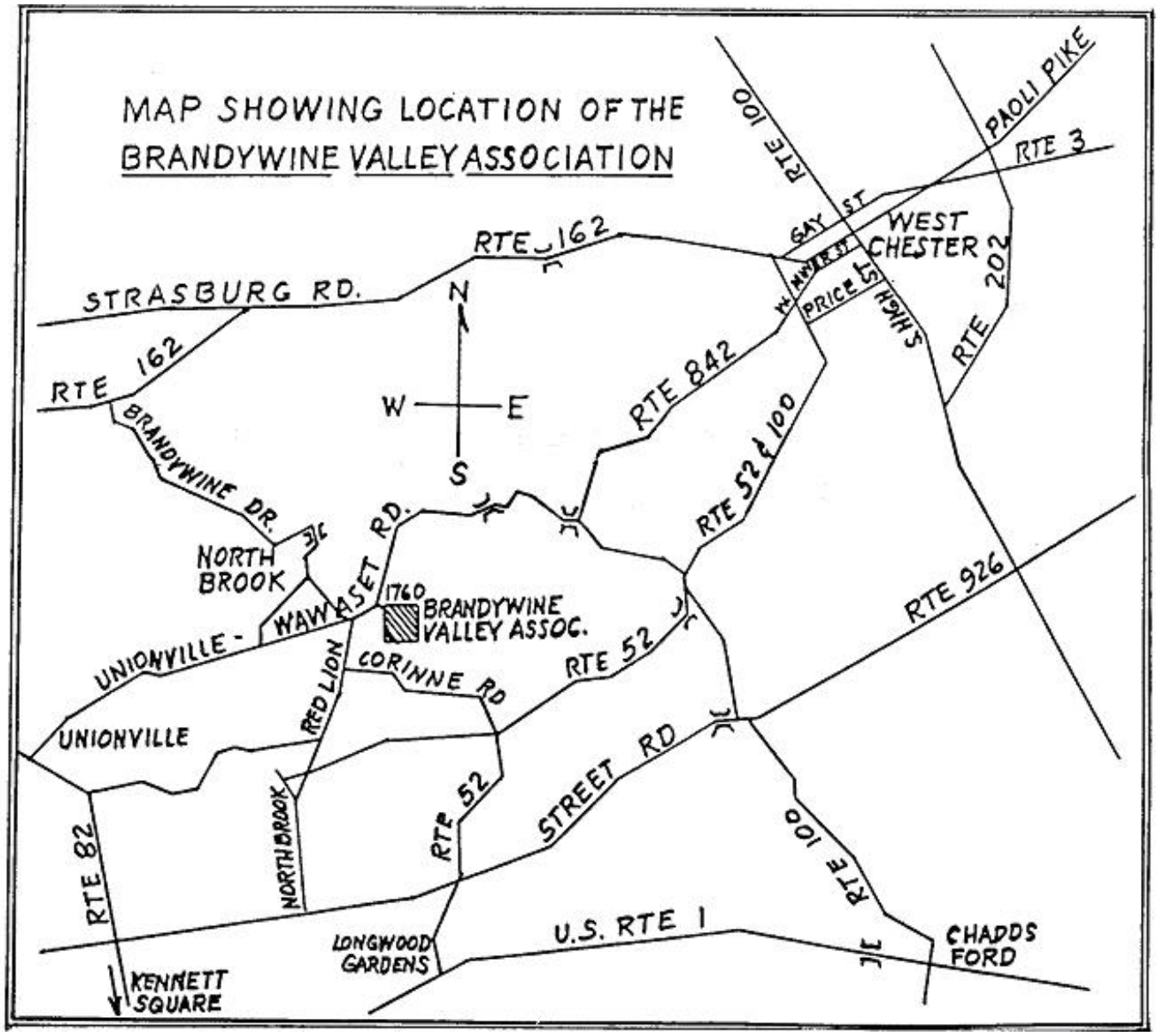
Subscriptions to this excellent periodical are available through the CCAS at a reduced price of **$32.95** which is much less than the newsstand price of $66.00, and also cheaper than individual subscriptions ($42.95)! To start a subscription, make **sure** you make out the check to the **Chester County Astronomical Society** (do **not** make the check out to Sky Publishing, this messes things up big time), note that it's for *Sky & Telescope*, and mail to Bob Popovich. Or you can bring it to the next Society meeting and give it to Bob there. **If you have any questions by all means call Bob first (610-363-8242).** Buying a subscription this way also gets you a 10% discount on other Sky Publishing merchandise.

Astronomy Magazine Group Rates

Subscriptions to this excellent periodical are available through the CCAS at a reduced price of **$34.00** which is much less than the individual subscription price of $42.95 (or $60.00 for two years). If you want to participate in this special Society discount offer, **contact our Treasurer Bob Popovich.**

Phone: 610-363-8242

e-mail: B2N2@verizon.net



To get to the Myrick Conservation Center of the Brandywine Valley Association 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 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 up the farm lane to the left; it's about 800 feet or so to the top of the hill. 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).