



Observations

A Monthly Publication Of The
CHESTER COUNTY ASTRONOMICAL SOCIETY

MARCH 2005

(VOLUME 13, NO. 3)

Visit our website at www.ccas.us

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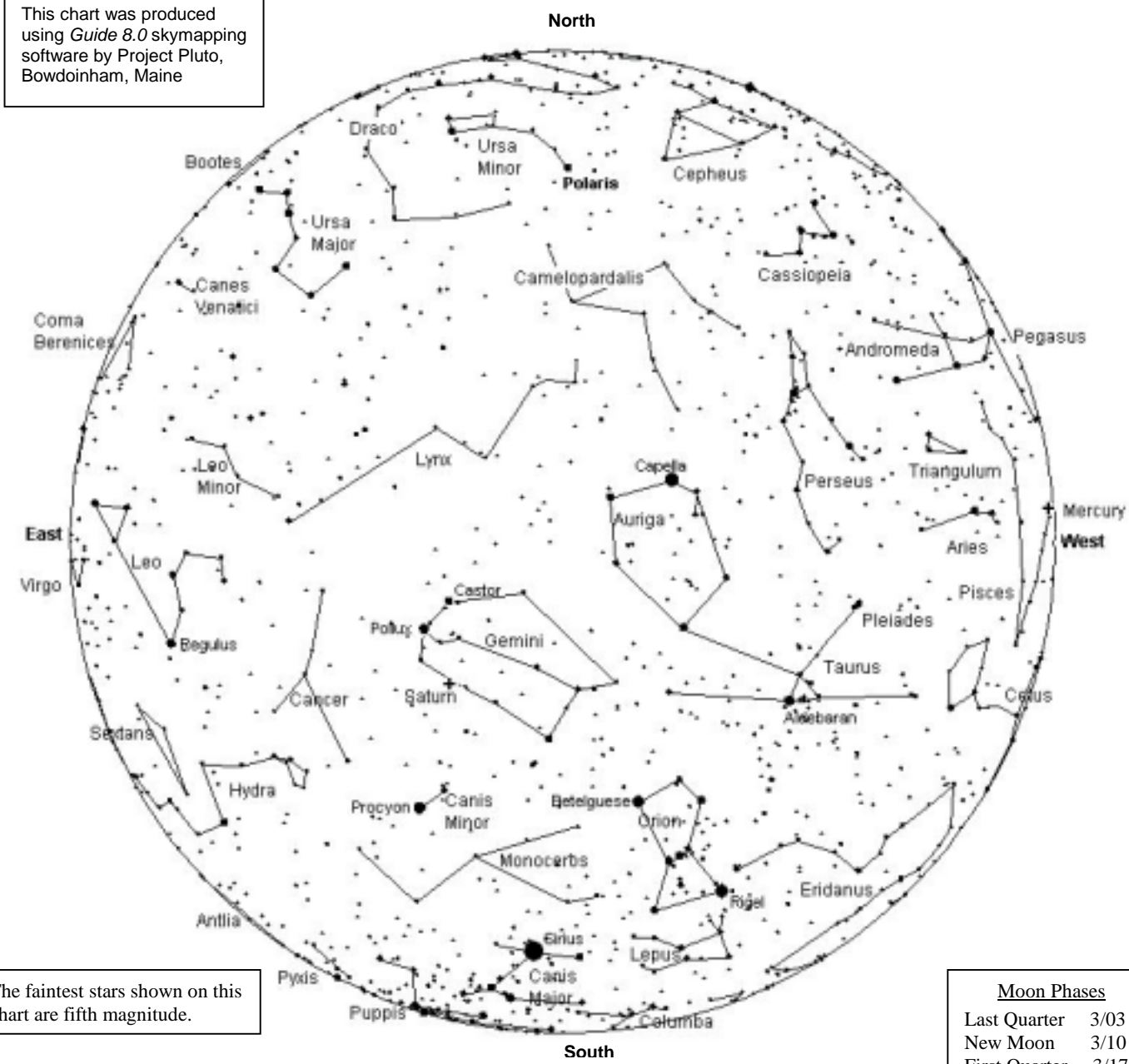
April 2005 issue	March 28
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Important March 2005 Dates

- 1 Introductory Astronomy class meets at West Chester University. Class starts at 7:00 p.m. EDT. Topic: *The Other Kids on the Block*.
- 3 Last Quarter Moon
Also: Moon occults Antares just before sunrise
Antares disappears: 6:08 a.m. EST (in twilight)
Antares reappears: 7:27 a.m. EST (in daylight)
- 8 CCAS Meeting 7:30 p.m. EST
Constellation of the Month: Gemini
Video: *Messier Marathon*
More details on page 3.
- 10 New Moon
- 11/ CCAS Observing session at Myrick
- 12 Conservation Center (BVA) starts at sunset.
Map with directions is on page 9.
- 12 Mercury at greatest elongation from Sun in evening sky. Best time this year to see Mercury.
- 15 Introductory Astronomy class meets at West Chester University. Class starts at 7:00 p.m. EDT. Topic: *Planispheres/Starcharts*.
- 17 First Quarter Moon
- 20 **March Equinox at 7:33 a.m. EST**
First Day of Spring!
- 25 Full Moon
- 31 Three of Jupiter's moons (Io, Callisto, and Ganymede) make a compact group at about 10:30 p.m. EST.



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.

Moon Phases	
Last Quarter	3/03
New Moon	3/10
First Quarter	3/17
Full Moon	3/25

The sky over Chester County March 15, 2005 at 7:00 p.m. EST

The Planets

Mercury is in the evening sky, setting about 30 minutes after the Sun in early March. By about March 12, it sets up to 90 minutes after the Sun. By the last week of the month, however, it will sink back into the Sun's glare.

Venus is in the morning sky, but is lost in the Sun's glare for most of this month.

Mars is in the morning sky, low in the southeast at sunrise.

Jupiter is rising in early evening, and is best seen in the late evening hours when it's higher in our sky. Once Jupiter rises, it's the brightest "star" in our sky.

Saturn is visible in the evening sky, high up and well placed for telescopic observation as soon as it's dark enough. Don't miss it!

Uranus is too close to the Sun to find with a telescope.

Neptune is also too close to the Sun to find with a telescope.

Pluto is rising before the Sun this month, but it is best to wait until later in the spring or summer to look for it.

CCAS Election Chair Needs Help

The offices of president, vice-president, treasurer and secretary are up for election this year. The term of office is two years.

In March, we announce the members of the Election Committee. These three people are charged with conducting the election. Usually they contact, or try to contact, each Society member to see if that member would like to run for office, or to nominate someone else. People who wish to run for office may not serve on the Election Committee, to avoid any possible conflicts of interest. Ed Lurcott has volunteered to be the Chair of this year's Election Committee. If you would like to help coordinate the election, please call Ed ASAP at 610-436-0387. Thanks!



CCAS March Meeting

DATE: **Tuesday March 8, 2005**
TIME: 7:30 p.m. EST
PLACE: Department of Geology and
Astronomy Lecture Room
(Room 113 – Boucher Building)
West Chester University
LOCATION: South Church Street
West Chester, PA

A map of the campus showing the location is on page 10.

The Constellation of the Month for March will be Gemini, presented by Kathy Buczynski. The Constellation of the Month presentation will include information on objects within the constellation needed for the various Astronomical League Observing Club Awards. After this presentation and your own field observation of the constellation, you will be able to complete the log entry needed to apply for the AL awards.

After the Constellation talk, we will watch a video on the Messier Marathon. March is the month for Messier Marathons. In March, it is possible to view all 110 objects on the Messier list in one night by staying up all night. The video explains how the Marathon works, and covers the Messier objects.



CCAS March Observing Session

The next CCAS Observing Session will be at the Brandywine Valley Association's Myrick Conservancy Center (see map on page 9) on Friday March 11, 2005 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 Saturday March 12, 2005. 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.



Welcome New Members!

We'd like to welcome the members who have joined the Society in the past month: Jeffrey Lyons and family of Kemblesville (PA). Welcome and Clear Skies to the Lyonses!



CCAS Introductory Astronomy Class

The Education Committee of the CCAS is offering a class intended to introduce people to basic astronomy. This series of eight classes is held on the first and third Tuesdays of each month, starting at 7:00 p.m. and ending at 8:00 p.m. The remaining classes will be held on these dates:

March 1 The Other Kids on the Block
March 15 Planispheres/Star Charts
April 5 Stars by Design: Constellations
April 19 The Secret Life of Stars
May 3 Planetarium Field Trip (WCU)
May 17 Telescopes, Binoculars and Mounts

The classes will be held in Room 216 of the Boucher Building at West Chester University. The Boucher Building is the same building where our monthly CCAS meetings are held.



Treasurer's Report by Bob Popovich

January 2005 Financial Summary

Beginning Balance	\$1,300
Deposits	113
Disbursements	<u>100</u>
Ending Balance	\$1,313

Membership Renewals Due

03/2005: Grey
Holenstein
Nelson
Vitanza family
04/2005: Dunlop
Popovich family
05/2005: Brownback
Darlington
Grillo
Long, Jr.
Pioch family
Schultz
Turco



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 a later page in this newsletter.



CCAS Polo Shirts Available

You can purchase a classy polo shirt with the CCAS logo embroidered on the left breast. Yes, it's embroidered, not printed on the material. Price is \$30.00 per shirt. Adult sizes S, M, L, XL only. Contact our Treasurer Bob Popovich to purchase yours! Hurry before they're all gone!



Calendar Notes

March 1, 2005 (Tuesday)	Introductory Astronomy class Location: West Chester University 7:30 p.m. EST
March 8, 2005 (Tuesday)	CCAS Meeting Location: West Chester University 7:30 p.m. EST
March 11/12, 2005 (Friday/Saturday)	CCAS Observing Session Location: BVA sunset
March 15, 2005 (Tuesday)	Introductory Astronomy class Location: West Chester University 7:30 p.m. EST
April 5, 2005 (Tuesday)	Introductory Astronomy class Location: West Chester University 7:30 p.m. EDT
April 8/9, 2005 (Friday/Saturday)	CCAS Observing Session Location: BVA sunset
April 12, 2005 (Tuesday)	CCAS Meeting Location: West Chester University 7:30 p.m. EDT
April 16, 2005 (Saturday)	National Astronomy Day
April 19, 2005 (Tuesday)	Introductory Astronomy class Location: West Chester University 7:30 p.m. EDT
May 3, 2005 (Tuesday)	Introductory Astronomy class Location: West Chester University 7:30 p.m. EDT
May 10, 2005 (Tuesday)	CCAS Meeting Location: West Chester University 7:30 p.m. EDT
May 13/14, 2005 (Friday/Saturday)	CCAS Observing Session Location: BVA sunset
May 17, 2005 (Tuesday)	Introductory Astronomy class Location: West Chester University 7:30 p.m. EDT
June 10/11, 2005 (Friday/Saturday)	CCAS Observing Session Location: BVA sunset
July 8/9, 2005 (Friday/Saturday)	CCAS Observing Session Location: BVA sunset
August 12/13, 2005 (Friday/Saturday)	CCAS Observing Session Location: BVA sunset



Cool Astronomy Shareware

By Don Knabb

I found some links to two cool shareware items through *Night Sky* magazine. You may be familiar with them already, but if not here they are:

<http://www.shatters.net/celestia/>

This is the link to *Celestia*. It's a fun little planetarium program that has great graphics. It is fun to zoom around the solar system with photorealistic planet surfaces, then to head out into the cosmos to the Pleiades and other objects. You can rotate around star clusters to see the 3D orientation of the stars. It's not high science but is a lot of fun. And you can download lots of additional things. It's an open source program and people post all kinds of stuff, from scientific data to *Star Trek* space ships that orbit planets in "real time". It's lots of fun for \$0.

http://astrosurf.com/avl/UK_index.html

For anyone pursuing the Lunar Observer Club this is a great find. It's a lot of megs to download but it is an incredible *Virtual Atlas of the Moon*. There are several versions that can be selected and a group of add ins that includes data and photos from the Apollo missions and other lunar missions. The scientific detail is very comprehensive and is way more than most people will ever use.

I'm exploring a few other free programs I found when browsing astronomical web sites. If I find any others that are really cool I'll let you know. The two above are lots of fun, but if you don't have a high speed internet connection it will be a real challenge to download.

Finally, here's the link to the "mother lode" I found at *Sky and Telescope's* web site. I've only checked a few of these out so far.

<http://skyandtelescope.com/resources/software/>

There are an amazing number of resources available.



Astronomus

"The Viewing O' The Green"

By Bob Popovich

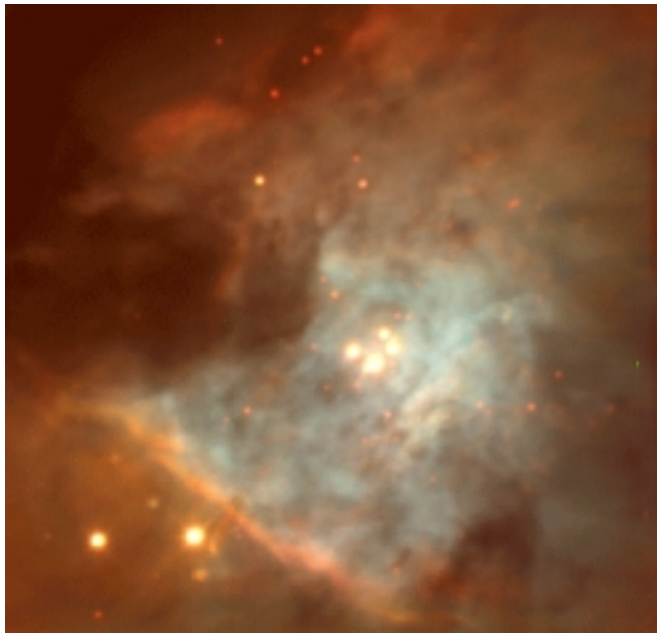
Sit back and breathe deeply. Again. Most of what you inhaled was nitrogen. But about 20% of your last gulp contained 2 of the 3 most abundant elements in the universe—hydrogen and oxygen (helium is the third of these *big three*). One of these two elements plays an important part in this month's story and the late winter night sky. And I'm here to tell you that this element, so vital to our existence, is also obliging enough to add a touch of color to one of the season's most splendid objects—the Great Nebula (M42) in Orion. And the color? Why, saints preserve us, it's green!

The Great Nebula (nebula is Latin for "cloud") is an emission nebula. "And just what is an emission nebula emitting?" you ask. Well, here's how it works: Hot young stars born within the M42 stellar nursery radiate their energy outward into the surrounding gas. The high-energy photons from these fledgling stars ionize the atoms of the gas. This means that they shear away electrons from their normal atomic orbits. These electrons will eventually return to their orbit but not before they collide with other electrons. These collisions and the subsequent orbital returns are individually insignificant events. But when you combine an unending stream of countless trillions and trillions of them, visible light is emitted (among other things). And owing to our eyes' sensitivity to green it is this light—that of doubly ionized oxygen—that gives the

nebula its faint greenish glow. The Orion Nebula is of the finest examples of this sort of a nebula.

Now you may know that hydrogen is by far the most abundant element in the universe, comprising over 90% of all visible matter. So it's logical to assume that much of the visible matter in this cloud is hydrogen—and it is. Hydrogen emits light in red frequencies. So why don't we see red in the Great Nebula? Well, aside from astronomical photographs, our eyes won't see red in this or any other nebula. The reason has two components: (1) the emissions are actually quite faint and (2) we don't detect the low levels of the color red very well. Fortunately, we do manage to make out the faint green of doubly ionized oxygen and it's these excitable little fellows that give M42 its characteristic signature. Have you seen it? I know that colors in the night sky are subtle and subjective. If you struggle with seeing the green of M42, I would be happy to lend you my 1.25" nebula filter that significantly enhances both the color and the image.

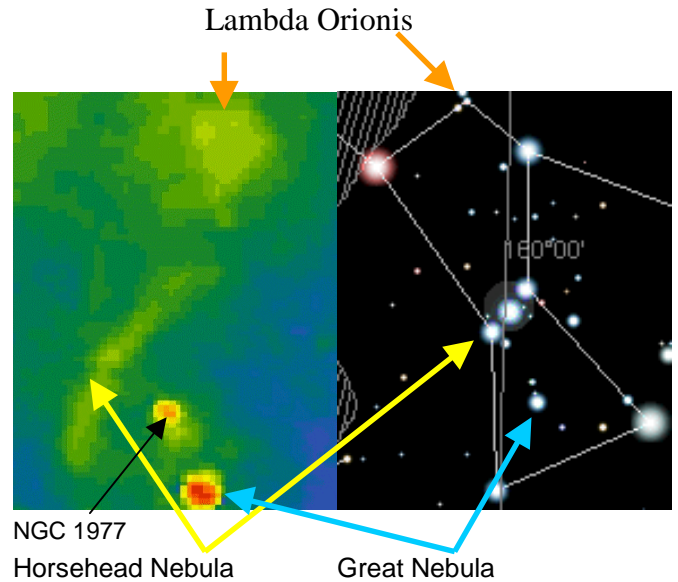
The Hubble photograph below shows the green signature of oxygen surrounding the four central stars of the Trapezium as well as red of hydrogen (But who cares about any other color but green, at least this month?!). Parenthetically, I should add that this Hubble image, and all the others for that matter, is edited using *PhotoShop* to bring out colors (or suppress them) that identify as many elements as possible so as to aid in the understanding of emission nebulae. But editing aside, it is beautiful beyond reckoning:



So I hope you will make it a point of observing this magnificent sight this month because the coming of spring means that it will soon be leaving us. And when you do step out to view this great nebula, do so with the knowledge that you are watching young stars blasting their energy out into space, temporarily fracturing the atomic order of the surrounding gas cloud. Invisible activity, occurring on an enormous scale yields a glowing cloud that transfixes the observer no matter how many times one looks through the eyepiece.

And if that weren't enough, all of what we see on a given night this March really occurred when St. Patrick himself was still walking the lanes of Ireland—for the Great Nebula, you see, is some 1,500 light years from the Emerald Isle.

Allow me to leave you with another image of the Orion nebula. While we know to focus our viewing efforts on the sword of Orion's belt, the full extent of the gas cloud is unbelievable—it actually covers most of the constellation! This radio telescope image illustrates just how expansive the Orion nebula is:



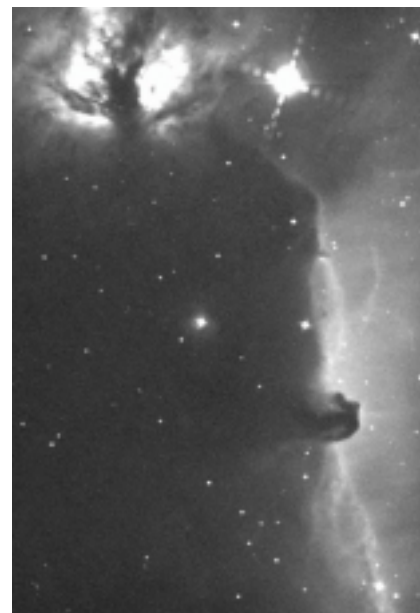
And look how green the radio telescope image is! Isn't that just the luck of the Irish!

Next Time: Vodka Tonic



Astroimages

By Pete LaFrance



Horsehead Nebula (B33) in Orion
Brandon 80mm refractor at prime focus



Whirlpool Galaxy (M51) in Canes Venatici
Celestron C11 telescope operating at f/3.3

The Horsehead region was imaged using an Ha (hydrogen alpha) filter; it required an hour's exposure time. M51 required a total of 2 hours exposure using LRGB filters.

Both images are copyrighted by Pete LaFrance, 2005, and are published here with Pete's permission.

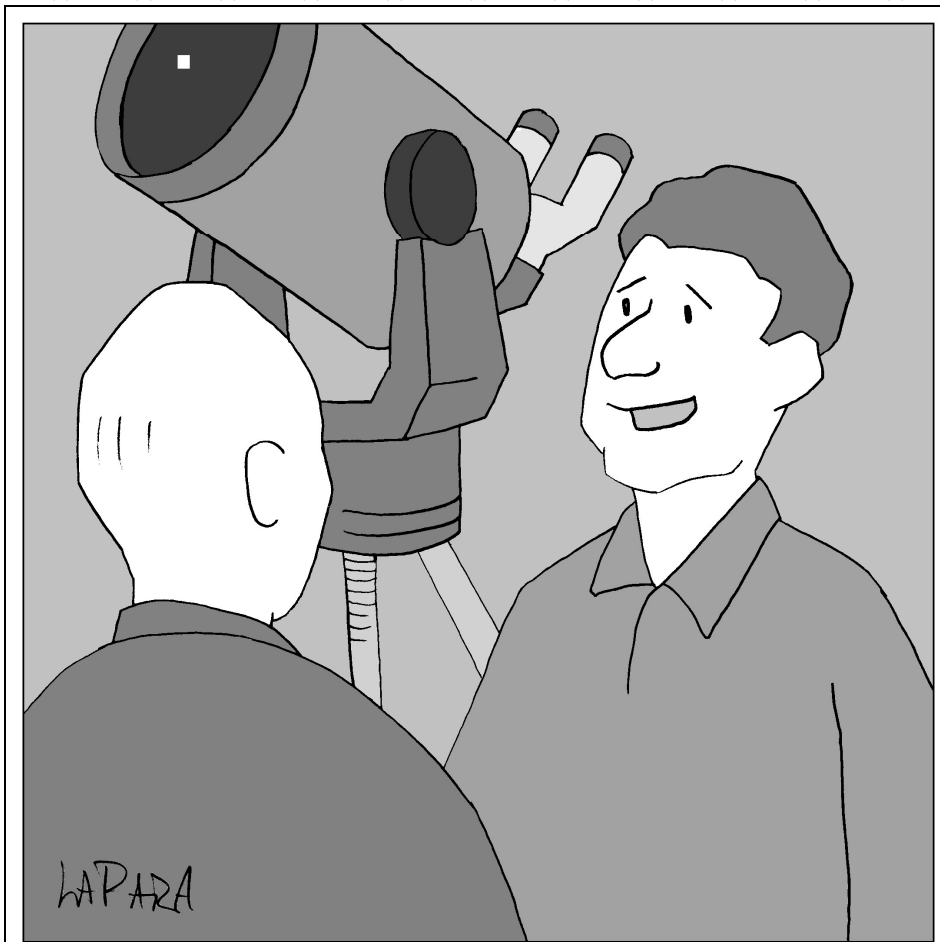
Dark-Sky Website for PA

The Pennsylvania Outdoor Lighting Council has lots of good information on safe, efficient outdoor security lights at their Website: <http://home.epix.net/~ghonis/index.htm>

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 N. First Avenue
Tucson, AZ 85719-2103



"YES, ALL MY EQUIPMENT IS GO-TO. EVERY DOLLAR GOES TO IT"

Cartoon by Nicholas La Para

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. 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 by 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 A.L. Award Coordinators

These are the members to contact when you have completed your observing log for the Messier, Binocular Messier, Lunar, or Double Star Awards:

Messier (both): Jim Anderson
(610-857-4751)

Lunar: Ed Lurcott
(610-436-0387)

Double Star: Jim Anderson
(610-857-4751)

Constellation Hunters: Jim Anderson
(610-857-4751)

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: Mike Turco
(610) 399-3423

Vice Pres: Steve Limeburner
(610) 353-3986

**ALCor and
Treasurer:** Bob Popovich
(610) 363-8242

Secretary: Caitlin Grey
(610) 918-9049

Newsletter: Jim Anderson
(610) 857-4751

Librarian: Linda Lurcott Fragale
(610) 269-1737

Observing: Ed Lurcott
(610) 436-0387

Education: Kathy Buczynski
(610) 436-0821

Public Relations: Vic Carlucci
(610) 458-7457



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 date printed on the address label of this issue of *Observations*; "exp." appears in front of it, just after your name. If you are due to renew, you may send 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

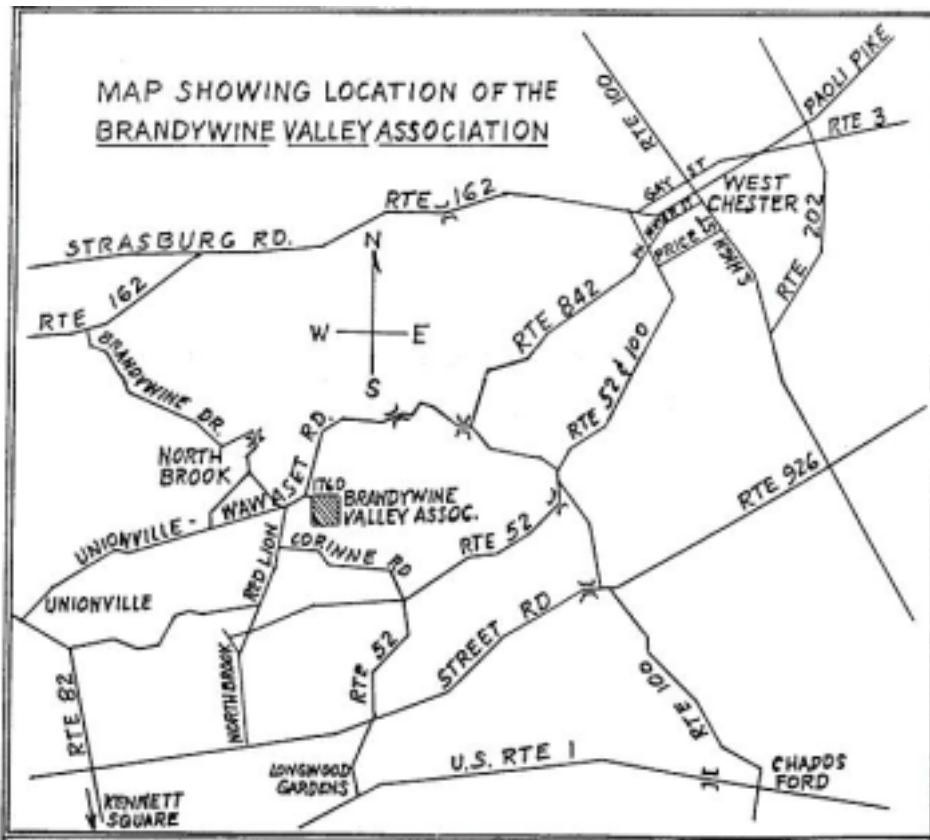
Subscriptions to this excellent periodical are available through the CCAS at a reduced price of **\$32.95** which is much less than the newsstand price of \$66.00, and also cheaper than individual subscriptions (\$42.95)! Make **sure** you make out the check to the **Chester County Astronomical Society** (do **not** make the check out to Sky Publishing, this messes things all 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.

CCAS Website

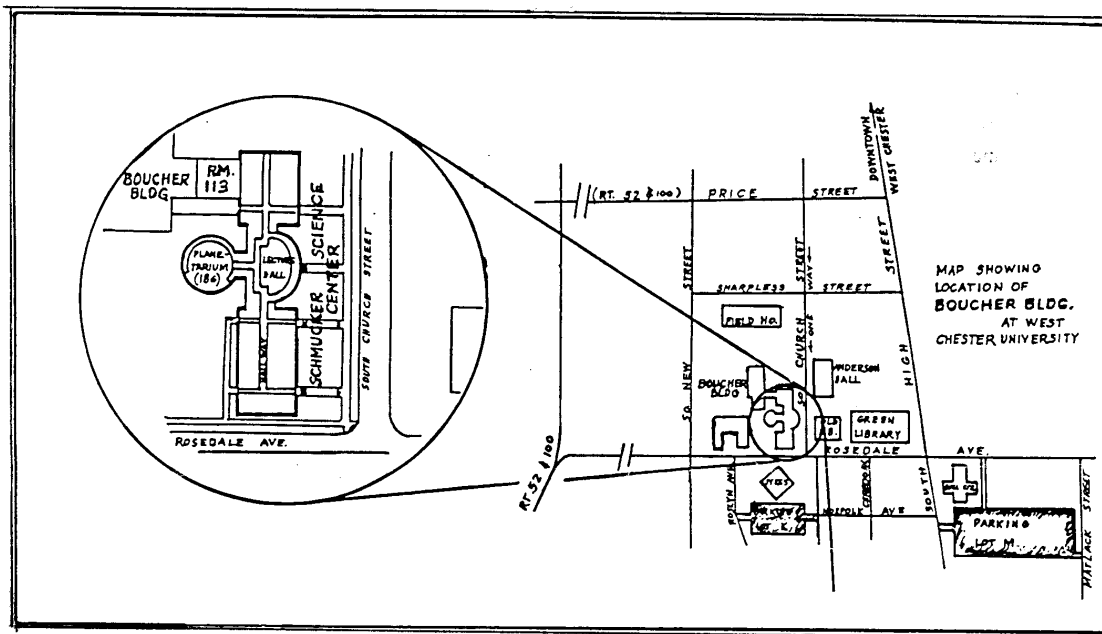
John Hepler is the Society's Webmaster. You can check our Website at:

<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 (610-363-0811) or e-mail to webmaster@ccas.us



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).



Parking is available behind Sykes Student Center on the south side of Rosedale Avenue (Parking Lot K), and behind the Bull Center at the corner of Rosedale Avenue and South High Street (Parking Lot M). If you arrive early enough, you may be able to get an on-street parking space along South Church Street, or along Rosedale Avenue. You can take the Matlack Street exit from Rt. 202 South; Matlack Street is shown on the map at the lower right corner with Rt. 202 off the map. If approaching West Chester from the south, using Rt. 202 North, you would continue straight on South High Street where Rt. 202 branches off to the right. This would bring you onto the map on South High Street near Parking Lot M, also in the lower right corner.