



# Observations

A Monthly Publication Of The  
CHESTER COUNTY ASTRONOMICAL SOCIETY

**SEPTEMBER 2005**  
(VOLUME 13, NO. 9)  
Visit our website at [www.ccas.us](http://www.ccas.us)

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## Newsletter Deadlines

October 2005 issue..... September 26

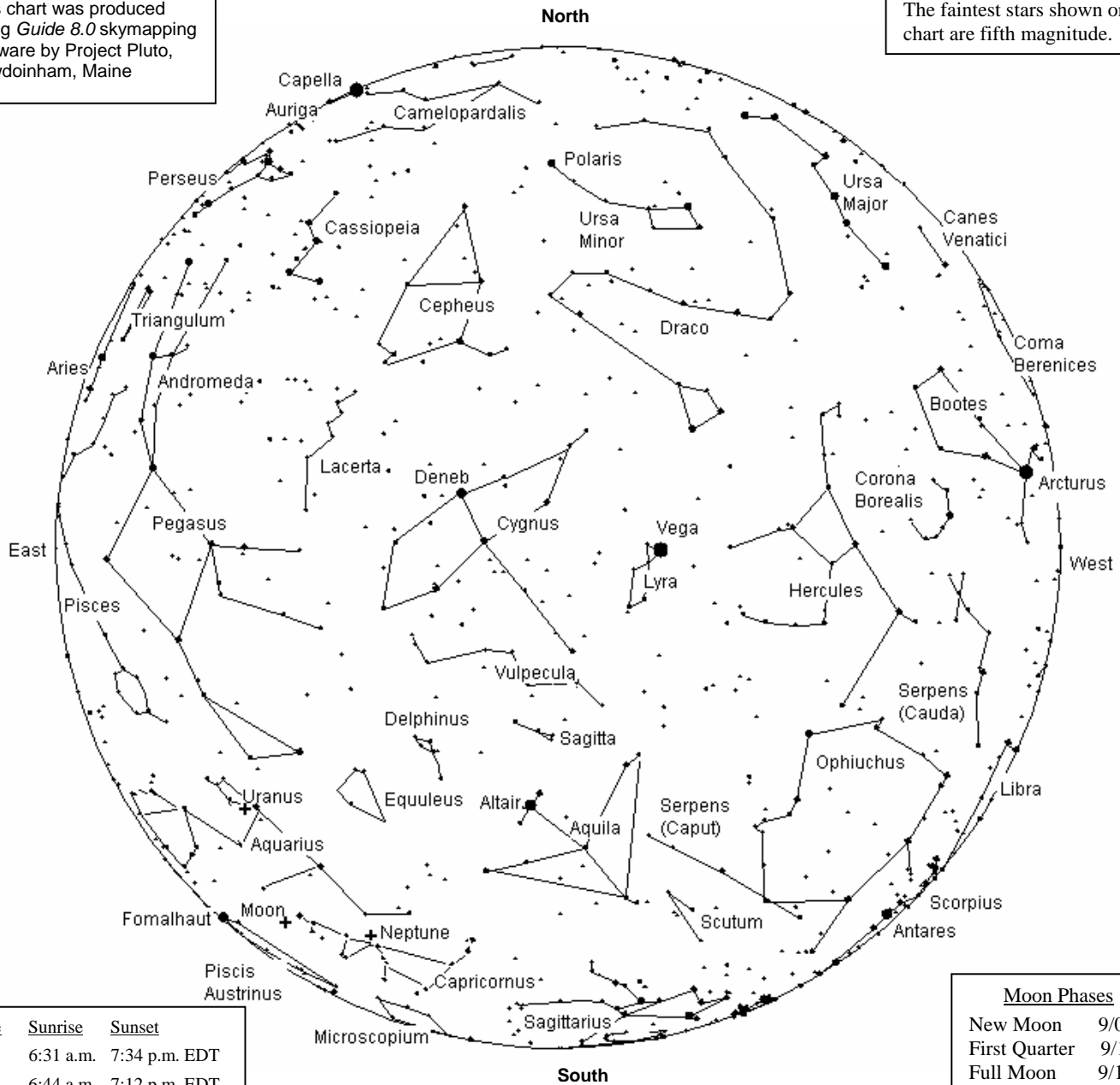
## Important September 2005 Dates

- 3 New Moon
- 9- Black Forest Star Party
- 11 Location: Cherry Springs State Park  
in Potter County, PA (see page 7)
- 11 First Quarter Moon
- 13 **CCAS Meeting** 7:30 p.m. EDT  
Location: Room 113, Boucher Building, West  
Chester University  
COM: Boötes  
Presentation: Inexpensive lunar and planetary  
photography (see page 3)
- 13 Hercules Observing Cluster meets.
- 17 Full Moon
- 20 Hercules Observing Cluster meets.
- 22 September Equinox at 6:23 p.m. EDT. First day  
of autumn in the Northern Hemisphere.
- 23/ **CCAS Observing Session**
- 24 Location: Brandywine Valley Association  
Time: sunset, or earlier (see page 3)
- 25 Last Quarter Moon.
- 27 Hercules Observing Cluster meets.
- 29 Delmarva No-Frills Star Party  
September 29 to October 2  
Tuckahoe State Park, MD  
Website:  
[www.delmarvastargazers.org/archives/nofrills2005/index.html](http://www.delmarvastargazers.org/archives/nofrills2005/index.html)



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
9/1	6:31 a.m.	7:34 p.m. EDT
9/15	6:44 a.m.	7:12 p.m. EDT
9/30	6:59 a.m.	6:47 p.m. EDT

Moon Phases	
New Moon	9/03
First Quarter	9/11
Full Moon	9/17
Last Quarter	9/25

## The sky over Chester County September 15, 2005 at 9:00 p.m. EDT

### The Planets

**Mercury** is in the morning sky in the first week of September.

**Venus** is in the evening sky all month, setting about 90 minutes after the Sun. How soon after sunset can you pick out Venus?

**Mars** is in the morning sky, high in the south at sunrise. It's getting noticeably brighter now as it moves closer to Earth. By month's end Mars will be rising about 9:00 p.m. but you'll have to wait until it gets higher in the sky to see much with a telescope.

**Jupiter** is in the evening sky this month, near Venus all month. On September 1, the two brightest planets will be only about 1.2° apart! After that they get farther apart.

**Saturn** is in the morning sky in August.

**Uranus** is visible all night, and is best placed for observation about 1:00 a.m. EDT.

**Neptune** is visible all night, and is best placed for observation about 1:00 a.m. EDT.

**Pluto** is in our evening sky if you want to find it. It takes at least an 8" to 10" telescope to find Pluto, dark skies, good charts, and lots of patience to find Pluto.

## CCAS September Meeting

DATE: **Tuesday September 13, 2003**  
TIME: 7:30 p.m. EDT  
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 12.

At the September 13 CCAS meeting, we will begin following a new meeting format. We will start with the Constellation of the Month presentation, and after that we will have the main presentation. The business meeting will follow the presentation.

This month's constellation will be Boötes, presented by Kathy Buczynski.

Vic Long, CCAS Secretary, will then talk about "inexpensive lunar and planetary photography." Vic will show examples of afocal (eyepiece projection) imaging with a digicam and a webcam (Meade LPI and Modified Creative webcam). The talk will be at a beginner's level, but Vic will go into more detail on webcam image processing if there is interest.

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## CCAS September Observing Session

The next CCAS Observing Session will be at the Brandywine Valley Association's Myrick Conservancy Center (see map on page 11) on Friday September 23, 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 September 24, 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 and open to the public.

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## Help Wanted (and Needed)

Your Executive Committee is looking for help in promoting the Society to the community. In the past, opportunities have just slipped by because we didn't have a person handling the situation. It will probably require about 10 hours/month, but you will set the limit. This position includes such tasks as making phone calls, writing and distributing (email, snail mail and faxing) flyers for special events, contacting newspapers, and maintaining contact lists for such flyers.

The Executive Committee has several ideas to get you started; you will decide which ones you feel best promote the CCAS.

This position, which we are calling the PR Chair, will be a part of the Executive Committee. If you feel that you'd like to help promote astronomy to the community through the CCAS, we'd like to hear from you. Contact Kathy at president@ccas.us or 610-436-0821.

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## Treasurer's Report by Bob Popovich

### July 2005 Financial Summary

Beginning Balance	\$1,369
Deposits	68
Disbursements	<u>122</u>
Ending Balance	\$1,315

### Membership Renewals Due

09/2005	Bogucki Furman
10/2005	Anderson Freeburg Fusco Hillenbrand Hogate Jain Padgett Smith Stoltzfus
11/2005:	Athens Buczynski Eaves Heck Hepler Okpaku Streib

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## 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.

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## CCAS Polo Shirts Available

You can purchase a classy polo shirt with the CCAS logo embroidered on the left breast. Price is \$30.00 per shirt. Adult sizes S, M, L, XL only. Contact our Treasurer Bob Popovich to purchase yours!

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## CCAS Trip to U.S. Naval Observatory

The CCAS is making plans for a trip to Washington D.C. in December to visit the U.S. Naval Observatory and the National Air and Space Museum.

The Naval Observatory is open for tours on Monday evenings (except national holidays) 8:30 to 10:00 p.m. We will tour the Observatory and be able to observe (weather permitting). We can reserve a date for up to twenty people. We're considering December 5th and/or 12th. We must reserve 4-6 weeks in advance (around 10/1) and they will confirm via e-mail or phone, no later than the Friday prior to requested date. If we find that more than twenty members can commit to the trip, we

could request both 12/5 and 12/12. We will have to send them a list of names and birthdates of those attending. Upon arrival (gates open at 8 p.m.) we must each show a valid photo ID and go through a security procedure. The security is required because the home of the Vice President is also located on the grounds.

**We will travel to Washington on Monday evening, arriving in time for the tour at the USNO. After that, we will stay overnight and visit the National Air and Space Museum on Tuesday before traveling home Tuesday evening.** If you are interested in going, please contact Linda Fragale at 610 269-1737 so we can determine if we need to reserve one date or two dates. The price depends on how many of us go (you will not have to commit to the trip until we can give you a final cost). Thanks.

#### About the Naval Observatory:

The U.S. Naval Observatory is one of the oldest scientific agencies in the country. Established in 1830 as the Depot of Charts and Instruments, its primary mission was to care for the U.S. Navy's chronometers, charts and other navigational equipment. Today, the U.S.N.O. is the preeminent authority in the areas of Precise Time and Astrometry, and distributes Earth Orientation parameters and other Astronomical Data required for accurate navigation and fundamental astronomy.

The U.S.N.O. performs an essential scientific role for the United States, the Navy, and the Department of Defense. Its mission includes determining the positions and motions of the Earth, Sun, Moon, planets, stars and other celestial objects; providing astronomical data; determining precise time; measuring the Earth's rotation; and maintaining the Master Clock for the United States. Observatory astronomers formulate the theories and conduct the relevant research necessary to improve these mission goals. This astronomical and timing data, essential for accurate navigation and the support of communications on Earth and in Space, is vital to the Navy and Department of Defense. It is also used extensively by other agencies of the government and the public at large.

The U.S.N.O. 26-inch refracting telescope is located on the grounds of the Observatory and is included as part of the Monday night tour when skies are cloudy.

This telescope has a rich history. Completed in 1873 at a cost of \$50,000, it was the largest refracting telescope in the world for a decade. The lens and mounting were made by the renowned firm of Alvan Clark & Sons of Cambridgeport, MA, and the great telescope was erected on the grounds of the old Naval Observatory site in the Foggy Bottom section of Washington.

It was from this site, in August of 1877, that astronomer Asaph Hall discovered the two moons of Mars, Phobos and Deimos, with the "Great Equatorial Telescope," bringing the attention of the world to the U.S.N.O.

The move to the Observatory's present site in 1893 allowed the 26-inch lens to be re-mounted in a new dome with a new mounting designed by the Warner & Swasey Company of Cleveland, OH. This design incorporated a rising floor to facilitate access to the eyepiece. This floor is still the largest elevator in the city!

Today, the telescope is used on every clear night to measure the

parameters of double stars. Over the years, visual observations by astronomers using micrometers have been replaced by electronic imaging techniques. By taking very short exposures with a Charge-Coupled Device (CCD) camera, astronomers can actually use the blurring effect of Earth's atmosphere to their advantage to measure the separations and position angles of double star components. The technique, known as "speckle interferometry," is ideally suited to the 125 year-old optics of the great telescope, and relatively unaffected by the urban location of the Observatory. Several thousand stars are measured annually, and the database of such observations, added to the visual observations dating back over a century, provide for one of the most concise double star catalogs in the world.

The telescope is also used to measure the positions of the moons of the outer planets to help refine their orbital parameters. These data are vital in planning missions to such distant worlds.



### **Spread the Word!**

by John Hepler, CCAS Webmaster

Many of you have periodically received e-mail messages from the executive committee or individual officers. These e-mails are sent via a members' mailing list that CCAS maintains and frequently updates. This e-mail list saves time and effort in trying to keep in touch with all CCAS members. Imagine if you had to write a letter on paper to all members, or telephone each member's home every time you needed to communicate with the Society!

What you may not realize is that you can also send an e-mail message to all CCAS members. To do this, put members@ccas.us in your e-mail's address line (i.e. "To:" in Microsoft Outlook (TM)). When you send your message, members@ccas.us will forward the e-mail on to all CCAS members maintained on our list.

Unfortunately, due to abuse from other customers, our website hosting company does not allow attachments (i.e. files containing text or photo images) to be sent along with the e-mails. So you can't send everyone in the society a copy of your latest moon photograph.

Here are some other useful Society e-mail addresses:

president@ccas.us - Use this e-mail address to communicate directly with the CCAS president.

vp@ccas.us - Use this e-mail address to communicate directly with the CCAS vice president.

treasurer@ccas.us - Use this e-mail address to communicate directly with the CCAS treasurer.

secretary@ccas.us - Use this e-mail address to communicate directly with the CCAS secretary.

librarian@ccas.us - Use this e-mail address to communicate directly with the CCAS librarian.

alcor@ccas.us - Use this e-mail address to communicate directly with the CCAS Astronomical League Correspondent (ALCOR).

webmaster@ccas.us - Use this e-mail address to communicate directly with me, the CCAS webmaster!

exec@ccas.us - Use this e-mail address to communicate with the members of the CCAS executive committee.

officers@ccas.us - Use this e-mail address to communicate directly with the CCAS team of elected officials (president, vice president, treasurer, and secretary).

Notice how no one is identified by name. This is so that as the years go by, our e-mail addresses remain the same, regardless of who is currently president, treasurer, etc. While we're at it, here are even more useful CCAS e-mail addresses:

programs@ccas.us - Use this e-mail address to communicate directly with our program chairperson.

observing@ccas.us - Use this e-mail address to communicate directly with our observing chairperson.

newsletter@ccas.us - Use this e-mail address to communicate directly with our newsletter editor.

education@ccas.us - Use this e-mail address to communicate directly with the education chairperson.

If you have a computer with Internet access and would like to be included in the members group e-mail address, please contact either the newsletter@ccas.us or webmaster@ccas.us e-mail addresses.

Speaking of the newsletter, if you haven't already, sign up for the electronic copy of our monthly newsletter. You'll get the pictures in color and help us reduce our operational costs by mailing less paper!

So next time you want to alert everyone of an upcoming celestial event or new astronomy-related local business, try using the members@ccas.us e-mail address to quickly spread the word to everyone!

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### Society's 8-inch Lending Telescope Available

The Society's eight-inch reflector telescope, on an equatorial mount, is once again ready for members to borrow. It was refurbished by Pete LaFrance and Ed Lurcott (many thanks to Pete and Ed!). You can arrange to borrow it by calling Ed Lurcott at 610-436-0387.

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### Some Useful Web Links

An email from Bruce Holenstein:

I saw an interesting link in the 19 August issue of *Science* magazine. The Students for the Exploration and Development of Space have collected a lot of data on Messier objects and published it along with great number of images here:

<http://www.seds.org/messier/>

with reply from Kathy Buczynski:

I've used that website for constellation drawings as well. Try this one for NGC and IC items

[http://www.ngcic.org/dss/dss\\_images.htm](http://www.ngcic.org/dss/dss_images.htm)

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## M8 The Lagoon Nebula

by Pete LaFrance



Imaged with a SBIG ST7-ME CCD camera.

Processed with MaximDL.

Dark subtracted

Blue 10 x 5 min

Red 10 x 5 min

Grn 12 x 5 min

HA 5 x 2 min

Total Exposure time: 37 minutes

Telescope: Celestron CGE-11.

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### CCD Camera For Sale

by Pete LaFrance

I have a SBIG ST7-ME with a class 1 chip, a TC-211 autoguider chip and is nabg. Parallel hookup. Comes with all included software and cables. Before I bought this camera it was sent into SBIG for general cleanup and I have now owned it for about 10 months.

You can see images on my website that were acquired with this camera over that time. As I learned more about imaging, the pictures became better with each outing. And I don't live under ideal dark skies!

I am upgrading to a ST8 and need to sell the ST7 to offset the cost. I'm asking \$1150.00 for the ST7.

Also I have a wide field Optec f3.3 reducer for sale that will attach directly to the ST7 and a 2" focuser. Ask me about it if you are interested.

Thanks for looking,

Peter

[www.plafrance.org](http://www.plafrance.org) is my website and 98% images were taken with the ST7-ME.

Phone: 610-268-2616

Email: [plafrance@verizon.net](mailto:plafrance@verizon.net)

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## Calendar Notes

September 6, 2005 (Tuesday)	Hercules Observing Cluster meets
Sept. 9-11, 2005	Black Forest Star Party Location: Cherry Springs State Park in Potter County, PA
September 13, 2005 (Tuesday)	CCAS Meeting Location: West Chester University 7:30 p.m. EDT COM: Boötes Presentation: Inexpensive lunar and planetary photography
September 13, 2005 (Tuesday)	Hercules Observing Cluster meets
September 20, 2005 (Tuesday)	Hercules Observing Cluster meets
September 23/24, 2005 (Friday/Saturday)	CCAS Observing Session Location: BVA sunset
September 27, 2005 (Tuesday)	Hercules Observing Cluster meets
Sept. 29 – Oct. 2, 2005	Delmarva No-Frills Star Party Location: Tuckahoe State Park, MD
October 4, 2005 (Tuesday)	Hercules Observing Cluster meets
October 11, 2005 (Tuesday)	CCAS Meeting Location: West Chester University 7:30 p.m. EDT COM: Pegasus
October 11, 2005 (Tuesday)	Hercules Observing Cluster meets
October 18, 2005 (Tuesday)	Hercules Observing Cluster meets
October 21/22, 2005 (Friday/Saturday)	CCAS Observing Session Location: BVA sunset
October 25, 2005 (Tuesday)	Hercules Observing Cluster meets
November 8, 2005 (Tuesday)	CCAS Meeting Location: West Chester University 7:30 p.m. EST COM: Cassiopeia
November 25/26, 2005 (Friday/Saturday)	CCAS Observing Session Location: BVA sunset
December 9/10, 2005 (Friday/Saturday)	CCAS Observing Session Location: BVA sunset (moon gazing night)
December 13, 2005 (Tuesday)	CCAS Meeting Location: TBA 7:30 p.m. EST

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## Improbable Bull's Eye

By Dr. Tony Phillips

Picture this: eighty-eight million miles from Earth, a robot spacecraft plunges into a billowing cloud almost as wide as the planet Jupiter. It looks around. Somewhere in there, among jets of gas and dust, is an icy nugget invisible to telescopes on Earth—a moving target going 23,000 mph.

The ship glides deeper into the cloud and jettisons its cargo, the “impactor.” Bulls-eye! A blinding flash, a perfect strike.

As incredible as it sounds, this really happened on the 4<sup>th</sup> of July, 2005. Gliding through the vast atmosphere of Comet Tempel 1, NASA's *Deep Impact* spacecraft pinpointed the comet's 3x7-mile wide nucleus and hit it with an 820-lb copper impactor. The resulting explosion gave scientists their first look beneath the crust of a comet.

That's navigation.

Credit the JPL navigation team. By sending commands from Earth, they guided *Deep Impact* within sight of the comet's core. But even greater precision would be needed to strike the comet's spinning, oddly-shaped nucleus.

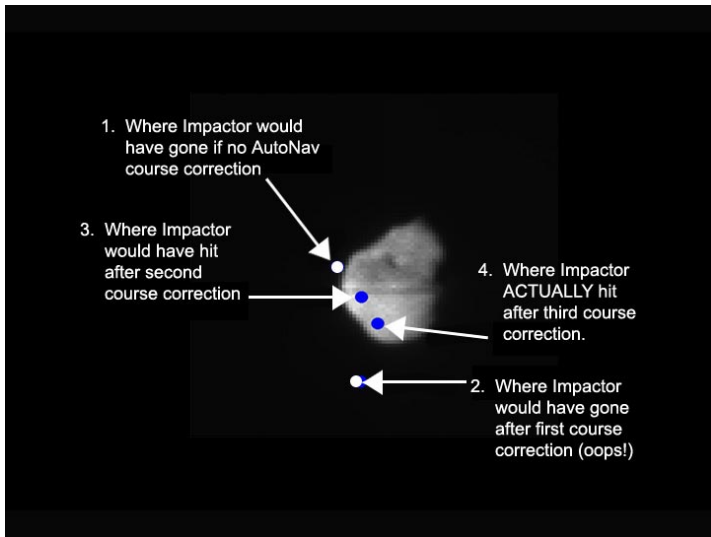
On July 3rd, a day before the strike, *Deep Impact* released the impactor. No dumb hunk of metal, the impactor was a spaceship in its own right, with its own camera, thrusters and computer brain. Most important of all, it had “AutoNav.”

AutoNav, short for Autonomous Navigation, is a computer program full of artificial intelligence. It uses a camera to see and thrusters to steer—no humans required. Keeping its “eye” on the target, AutoNav guided the impactor directly into the nucleus.

The system was developed and tested on another “Deep” spacecraft: *Deep Space 1*, which flew to asteroid Braille in 1999 and Comet Borrelly in 2001. The mission of *Deep Space 1* was to try out a dozen new technologies, among them an ion propulsion drive, advanced solar panels and AutoNav. AutoNav worked so well it was eventually installed on *Deep Impact*.

“Without AutoNav, the impactor would have completely missed the nucleus,” says JPL's Ed Riedel, who led the development of AutoNav on *Deep Space 1* and helped colleague Dan Kubitschek implement it on *Deep Impact*.

En route to the nucleus, AutoNav “executed three maneuvers to keep the impactor on course: 90, 35, and 12.5 minutes before impact,” says Riedel. The nearest human navigators were 14 light-minutes away (round trip) on Earth, too far and too slow to make those critical last-minute changes.



Comet Tempel 1, as seen by the *Deep Impact* impactor's camera. Three last-minute AutoNav-controlled impact correction maneuvers enabled the Impactor to hit the bulls-eye.

Having proved itself with comets, AutoNav is ready for new challenges: moons, planets, asteroids... wherever NASA needs an improbable bulls-eye.

Dr. Marc Rayman, project manager for *Deep Space 1*, describes the validation performance of AutoNav in his mission log at <http://nmp.nasa.gov/ds1/arch/mrlog13.html> (also check [mrlog24.html](http://nmp.nasa.gov/ds1/arch/mrlog24.html) and the two following).



## Astronomus

“Part Two of INSAP—From Persia to Malta”

By Bob Popovich

Continuing on the theme of our participation in the INSAP (Inspiration of Astronomical Phenomena) Conference held last month at Chicago's Adler Planetarium, I'd like to recount the marvelously varied and rich artistic expressions to which we were treated. Now, we all accept the notion that as a science, astronomy is pretty much the same all over the world. But I learned that it's also true that expressed as art, astronomy crosses cultures and centuries with ease.

Sitting in the Ray Kroc (the McDonald's guy) Auditorium at the Adler, Betsy and I listening intently to Professor John Carswell, former curator of Islamic Art of the University of Chicago's Oriental Institute, deliver a lecture of the similarities in how Persians, Chinese and (later) Europeans depicted the zodiac.

By presenting decorated Persian pottery, Professor Carswell illuminated the fine points of these beautiful pieces which—though separated by time and distance—still displayed common themes in their depiction of the zodiac. It's not surprising that Persians drew lions, crabs or twins in a recognizable way, but it is fascinating that they delineated the year into 12 zodiacal constellations and that these 12 were essentially the same as those we know today.

From ancient Persia we now fast-forward a couple of millennia and across thousands of miles to the tiny Mediterranean island of Malta. In conjunction with INSAP, the John David Mooney Foundation was engaged to commission a number of artists to produce works, in any media desired, that were in keeping with the spirit of the conference. “So what does a conference in Chicago have to do with an island thousands of miles away?” Well, as it happens, Mr. John David Mooney has visited Malta a number of times and is quite fond of the place. Being an artist himself, he decided to include Maltese artists among those being commissioned. On that lovely July opening night the Mooney Foundation gallery became the nexus of the familiar—constellations, planets, galaxies, etc. Yet it was also a place for the exotic, because these celestial objects weren't images in our eyepieces but rather creations in metal, stone, fabric, paint & canvas, and photographs.

Between pit stops at the wine and cheese buffet, our evening began with an original composition for piano. Relying on the upper registers of the piano as well as the incredible technical ability of the pianist, the music's ethereal quality conjured up images of gliding past wispy nebulas and zipping by countless stars. How music has the joyous ability to draw a mental picture in a listener's mind!

Also, for junior astronomers, the *Deep Impact* mission is described at

<http://spaceplace.nasa.gov/en/kids/deepimpact/deepimpact.shtml>

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



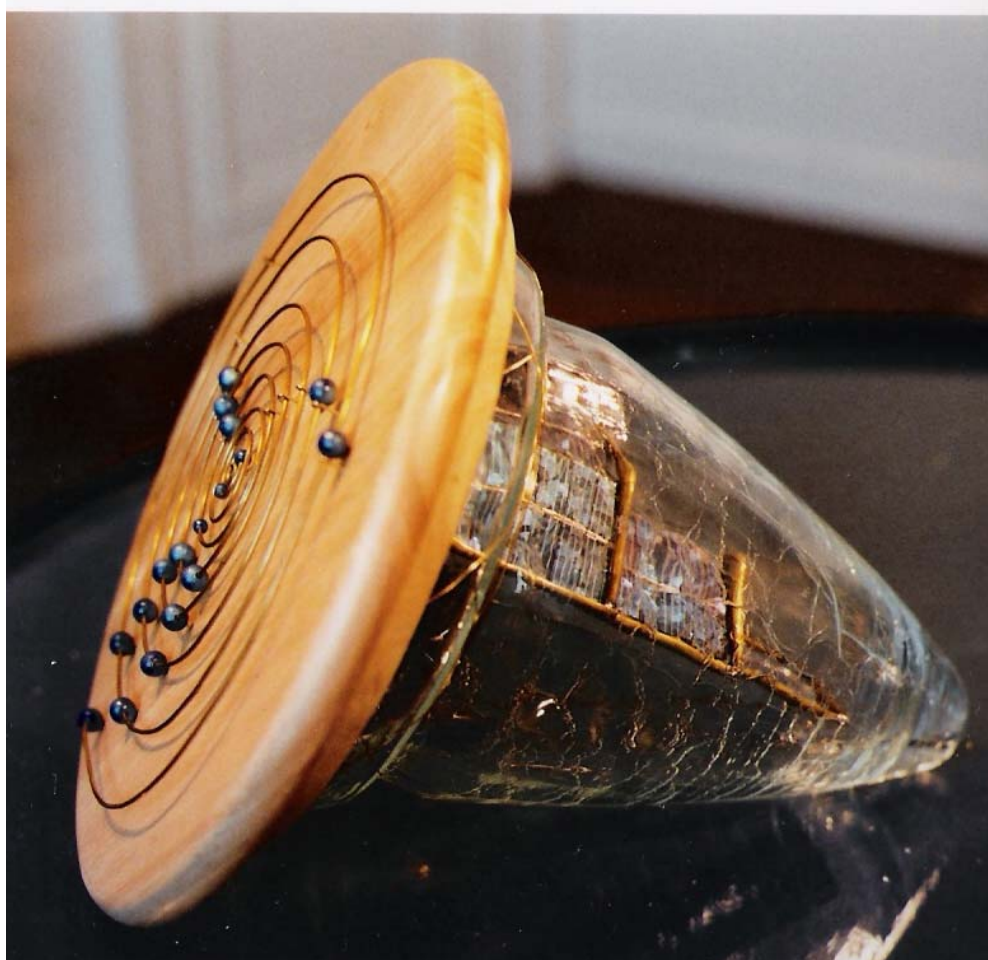
## Black Forest Star Party: September 9-11, 2005

The Annual Black Forest Star Party, hosted by the Central Pennsylvania Observers, is being held at Cherry Springs State Park in Potter County in northern Pennsylvania on the weekend of September 9 through 11, 2005. Cherry Springs is Pennsylvania's first official Dark-Sky Park. Seeing at this site is, to put it mildly, superb: probably the best astronomical seeing anywhere in the northeastern United States. Previous BFSP attendees from the CCAS have included Pete LaFrance, Ed Lurcott, and Steve Limeburner. More details, including registration information, can be found at the website [www.bfsp.org](http://www.bfsp.org). As of May 30, there were 234 slots still open for this star party. All registrations must be made in advance for the BFSP; they will not accept any “on-site” registrations. Steve Limeburner can provide information about motels in the area if you don't want to camp on-site.



Next up was a short digital film on the island of Malta that provided a fascinating look at the natural and man-made features of the director's homeland that subtly illustrated the forms and colors of the cosmos. From here we were invited to a large gallery containing life size black and white photographs of unclad women, each with a different constellation name as the title. Next to each of these prints was the negative with the subject's birth marks/freckles joined by lines to form the various constellations. I admit this was a unique way of conceiving the constellations that I'd never considered but, nonetheless, it was masterfully carried out. I think I'll just leave it at that...

Moving next to another gallery room we saw, in its midst, this piece sitting on a large round table:



This is one of those pieces that causes one to instantly ask, “What on Earth is that?” Followed quickly by “Let’s go and see!”

Look at it we did. For the longest time. Resting beneath a high-intensity lamp like the ones used for stage lighting, this work of art actually moves! Inside the crystal-like cone are photoelectric cells attached to a small motor. This contraption is cradled inside the cone in such a way that as the work rotates around the table, the photoelectric panel is free to remain facing up towards the light. Ingenious!

The attached wooden plate contained a series of concentric rings decorated with pierced metal spheres. As the work moved slowly about the table, the spheres moved through their orbits in fits and starts. The effect of this work on the two of us was joy, fascination and a moment of theological reflection.

Viewed from the wooden plate, the planets seemed to move on their own. Yet “behind” the plane of the solar system was a “machine” of planetary mechanics. But another level above this machine was the ultimate source of energy—pure light. It was cool. Very cool.

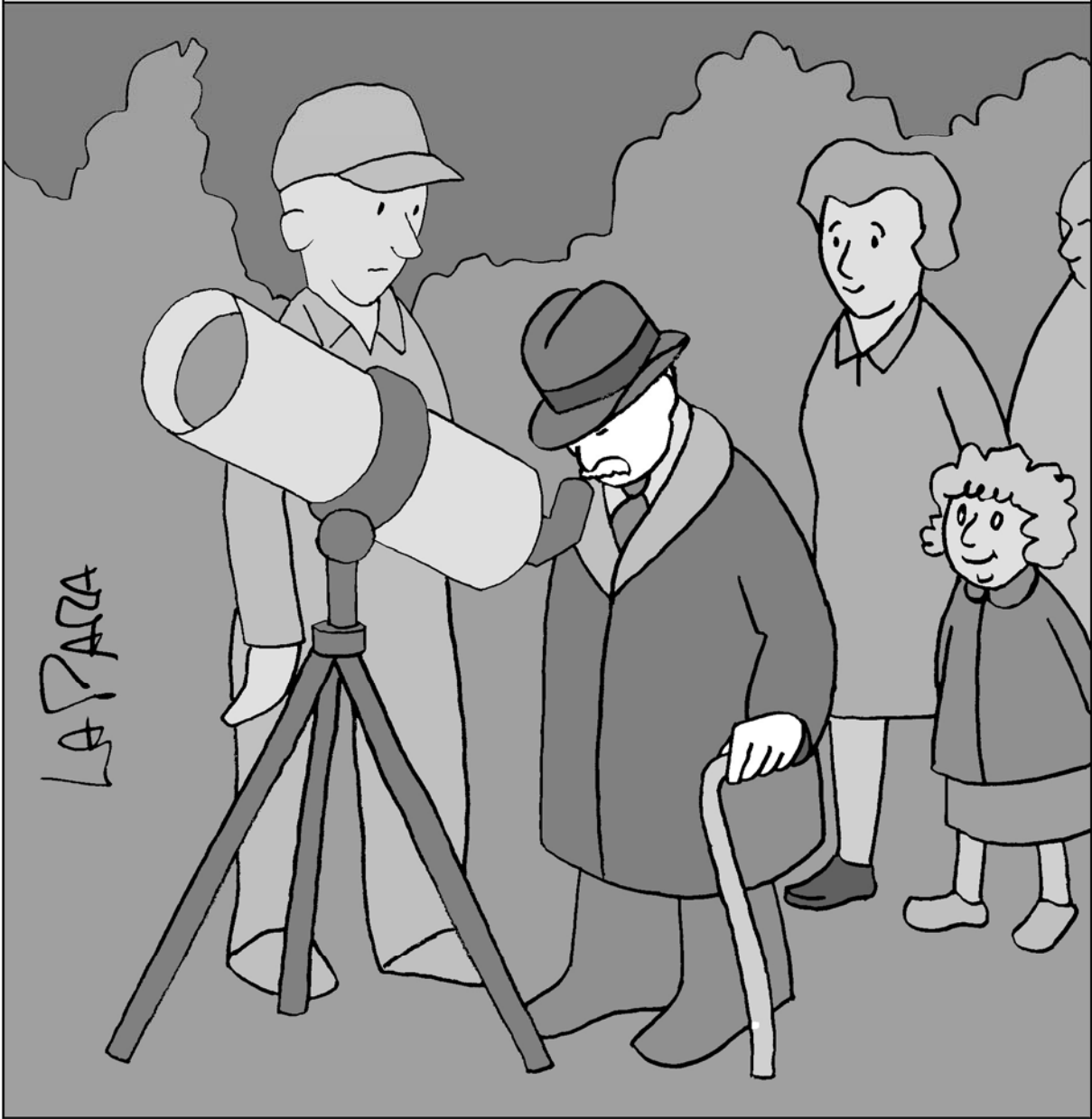
The INSAP conference was most satisfying and underscored something I think we all understand—astronomy is a beautiful pursuit that inspires all of us. Even those of us who buy our astronomical equipment at the art supply store.

Next Time: Triangle Extension





# STAR PARTY NIGHTS



"THAT'S JUPITER, IS IT? ANYONE IMPORTANT LIVE THERE?"

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, 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](mailto: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](mailto: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:** Kathy Buczynski  
(610) 436-0821

**Vice Pres:** Jim Anderson  
(610) 857-4751

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

**Secretary:** Vic Long  
(610) 399-0149

**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

**Webmaster:** John Hepler  
(610) 363-0811



### 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

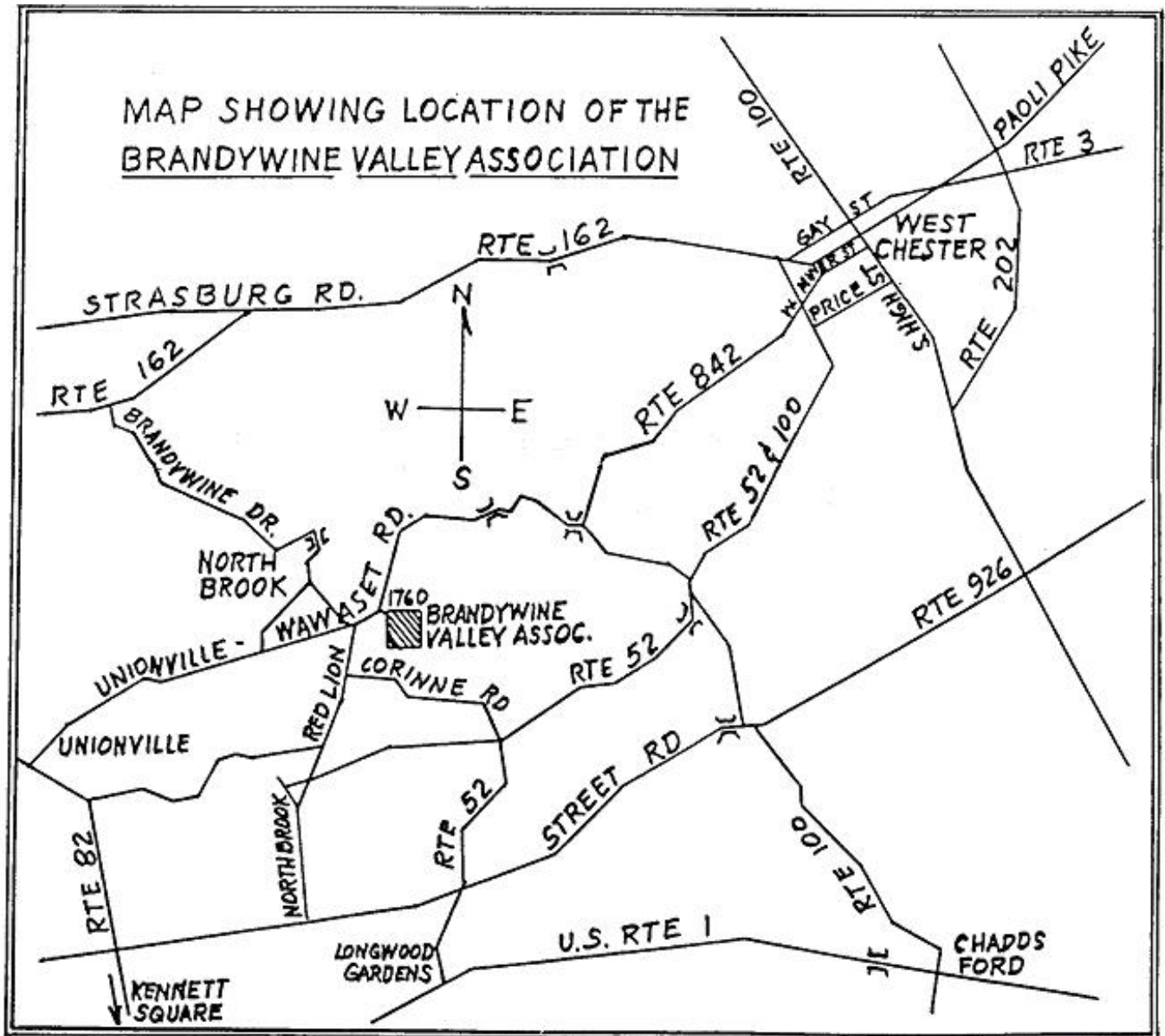
Subscriptions to this excellent periodical are available through the CCAS at a reduced price of **\$32.95** which is much less than the newsstand price of \$66.00, and also cheaper than individual subscriptions (\$42.95)! Make **sure** you make out the check to the **Chester County Astronomical Society** (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

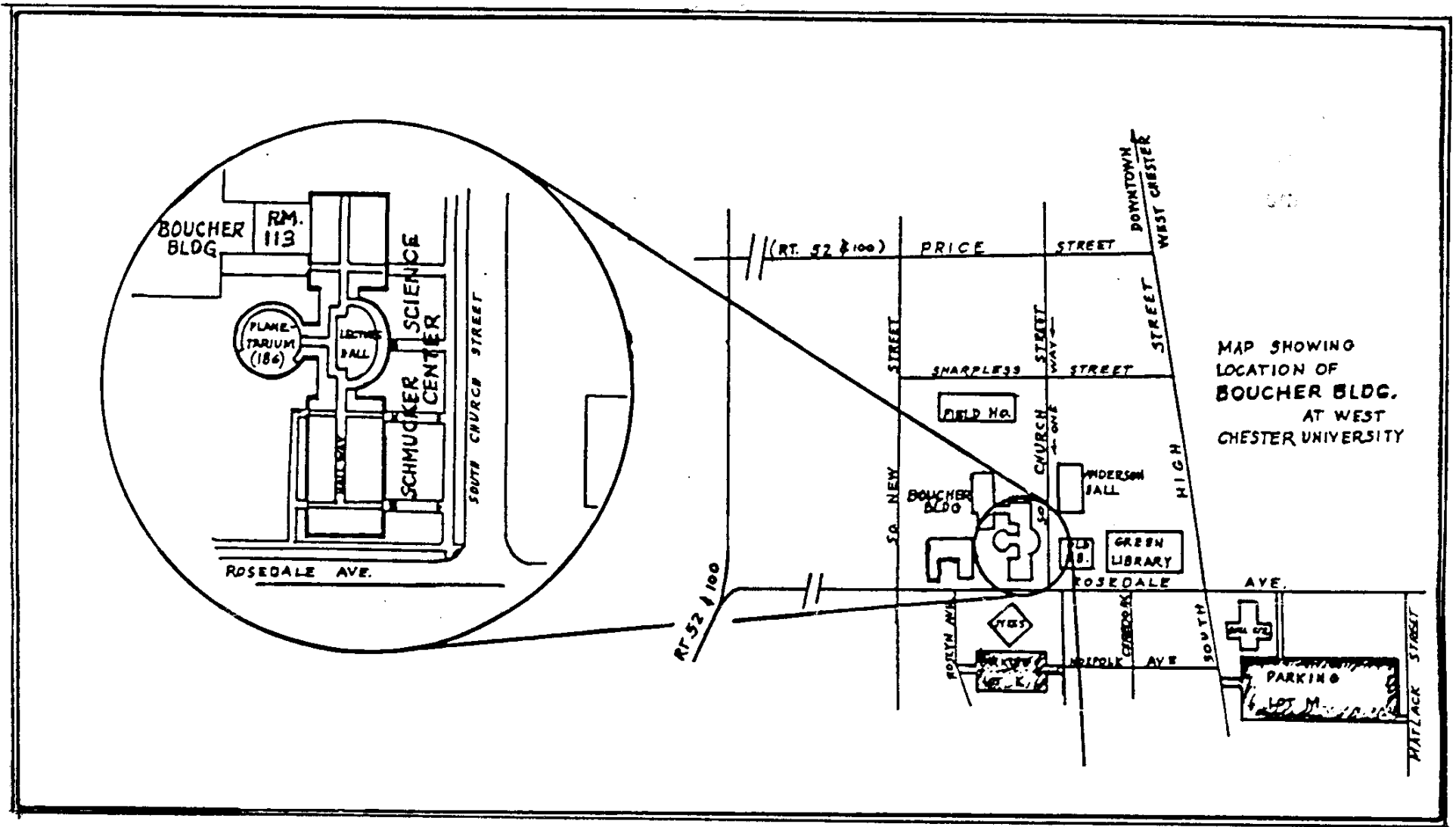
John Hepler is the Society's Webmaster. You can check our Website at:

<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 [JohnHepler@comcast.net](mailto:JohnHepler@comcast.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).



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.