



# OBSERVATIONS

A MONTHLY PUBLICATION OF THE  
*Chester County Astronomical Society*



★ *President:* Mike Turco  
★ *Treasurer:* Pete LaFrance

**MAY 1999**  
(VOLUME 7, NO. 5)

★ *Vice President:* Kathy Buczynski  
★ *Secretary:* Frank Angelini

[http://members.tripod.com/~ccas\\_2/ccas.html](http://members.tripod.com/~ccas_2/ccas.html)

## CCAS May Meeting

**DATE:** Tuesday May 11, 1999  
**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 (see map)

Parking is available behind Sykes Student Center on the south side of Rosedale Avenue, and behind the Bull Center at the corner of Rosedale Avenue and South High Street. A map is included on a later page.

Our guest speaker will be Mr. Fronefield Crawford, a doctoral candidate at the Massachusetts Institute of Technology (MIT). His subject will be "Pulsars." Mr. Crawford grew up in Wayne, PA and attended Conestoga High School. He received an undergraduate degree in Astrophysics from Williams College in Massachusetts in 1994. He plans on receiving his Ph.D. in Physics from MIT in 2000. His research focuses mainly on radio astronomy and pulsar studies. He now works with the MIT Pulsar Group.

When a massive star exhausts its fuel, it generally produces a supernova explosion during which the core of the star collapses onto itself under the force of its own gravity. If the contracting mass is less than 1.4 solar masses, it forms a white dwarf. If it is between 1.4 and 3 solar masses, the force of gravity is so strong that the electrons in the atoms of the star core's matter are forced into the protons thus forming neutrons. This collapsed core then becomes a "neutron star" with a diameter of only about 15 kilometers (9 miles) and a density of a billion tons per cubic centimeter! Also, the collapse imparts a high rate of spin on the star and its high density causes the magnetic field to increase to fantastically high levels. Even though the temperature of a neutron star is 10 million degrees, its small size makes it almost impossible to detect optically. It is by the detection of the energy radiated by the rapid spinning and magnetic field that neutron stars are "seen." When the radiated energy of the spinning neutron star is intercepted on earth, it is detected as rapid pulses, and we therefore call these neutron stars pulsars.

Mr. Crawford will talk about pulsars, and why they are interesting and useful to study. He will discuss how they are searched for and studied with radio telescopes, and how radio telescopes differ from optical ones. He will also discuss a

major project in which MIT is involved, called the Parkes Multibeam Pulsar Survey, or PM for short, in which he and his colleagues are searching for pulsars with the Parkes radio telescope in Australia. The survey has been by far the most successful pulsar survey ever, with a detection rate of new pulsars that is over ten times that of any previous survey. In just a year they have increased the known population of pulsars by 45%. Mr. Crawford will also discuss other exciting results of this study.

Please plan on attending. This should be a very interesting presentation on a fantastic subject at the cutting edge of astronomical research. The very existence of neutron stars proves that matter as we know it is mostly empty space!



## CCAS May Observing Session

The next Observing Session will be on Friday May 14, 1999 starting at about 7:30 p.m. at the Brandywine Valley Association (BVA). If it's too cloudy on Friday, we'll try again on Saturday May 15. At the observing sessions, there will be help available to set up and use your telescopes. All members are invited whether they have a telescope or not. Telescope owners are always glad to share the view through their `scope. CCAS Observing Sessions are free of charge. Children are always welcome as long as an adult accompanies them. Dress warmly, because it gets cool quickly when you're standing around a telescope in a meadow!



## National Astronomy Day: May 22, 1999

The Chester County Astronomical Society, in conjunction with the University of Pennsylvania, is hosting an Astronomy Day program at the University's Flower & Cook Observatory. The program begins at 3:00 p.m. EDT on Saturday May 22, 1999. There will be a series of presentations inside, in a classroom setting. There will also be ongoing activities outside (weather permitting): telescope workshop (bring a telescope, CCAS members help you set it up and use it) and daylight observing of the Sun, Moon and Venus. If it is clear, observing begins at about 9:00 p.m. For more details, see page 4.



## President's Message May, 1999

As we move into the warmer weather and the end of our September-to-May regular meeting period, I want to say what a pleasure it has been for me to serve as president of the club this year. It's been a lot of work but it has also been fun. Being Program Chairman, working on the Telescope and Education

Committees, writing the occasional editorial, supporting the activities of the Flower & Cook Observatory, and helping out at star parties and on the upcoming Astronomy Day festivities takes a lot of time, but it is worth it if it bears fruit. I also try to be as active as possible in the Delaware Valley Amateur Astronomers in order to network with as many amateur astronomers as possible and therefore to gain the synergy which can benefit our club as well.

As a member of the CCAS, whether president or not next year, I look forward to continuing to help our club maintain its character of a great observing-oriented astronomical society.

Mike Turco 4/26/99

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### May 13, 1999: Ridge Pike Elementary School

CCAS has been asked to help with a star party at Park Ridge Elementary School, in Plymouth Meeting. Time is 8:00 through 9:00 p.m.; be there by 7:30 p.m. to get set up. This party is a joint effort between the CCAS and the Delaware Valley Amateur Astronomers. We've done this party for several years now, and it's always a lot of fun. The students really know their stuff and appreciate our sharing of our telescopes and time with them. Don't miss it! A map is included on a later page. If the weather is bad that day (cloudy) don't go; the event will be cancelled unless we have clear skies.

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### May 20, 1999: Westtown School Star Night

On Thursday night, May 20, the CCAS has been asked to provide telescopes and expertise for an educational star program for about 20 3<sup>rd</sup> graders of the Westtown School, at a campout on the school grounds. A map is included on a later page. Please contact our Observing Chair, Ed Lurcott, (436-0387) if you can help out at this event. We need 3 or 4 telescopes. The program is to start at about 7:30 p.m.

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### May 21, 1999: Girl Scout Star Night

On Friday night, May 21, the CCAS has been asked to provide telescopes and expertise for an educational star program for the Coatesville Girl Scouts, at a campout in Hibernia Park. A map is included on a later page. Please contact our Observing Chair, Ed Lurcott, (436-0387) if you can help out at this event. We need 3 or 4 telescopes. Program will start at about 8:00 p.m.

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### June 1, 1999: East Goshen Star Night

East Goshen Township has invited the CCAS to a "return engagement" at the East Goshen Township Park on Paoli Pike. This event will take place on Tuesday June 1, 1999. The rain date will be Thursday June 3. This event is a money-maker for the CCAS because the township charges a registration fee, which they then give to us. We need several telescopes and members to help with this event. Even if you don't have a telescope but can point out constellations you can be a big help

at this event. A map is included on a later page. Try to arrive before 8:00 p.m. to set up. If you are bringing a telescope or a display, you have township permission to drive across the grass to the location of the star night festivities (the soccer fields).

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### CCAS Calendar Notes

- June 18/19, 1999: CCAS Observing Session and Meeting, Brandywine Valley Association
- July 16/17, 1999: CCAS Observing Session and Meeting, Brandywine Valley Association
- August 13/14, 1999: CCAS Observing Session and Meeting, Brandywine Valley Association

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### Included Free - No Extra Charge!

CCAS members will have noticed that this month's issue of *Observations* includes a copy of the *Abrams Planetarium Sky Calendar* for May 1999. There is a notice on the calendar side of the sheet that this issue may be copied for free distribution, in connection with National Astronomy Day (NAD). We will be distributing these free at our NAD program at the Flower & Cook Observatory; CCAS members are getting their copy early, with the newsletter. Happy NAD! If you want to make copies for free distribution to friends and family, you of course may do so (the same applies to *Observations*, in case you were wondering.) If you are interested in subscribing to the *Sky Calendar* for a full year, subscription information is on the calendar side of the page.

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### CCAS 20" Telescope News

AstroSystems expects to ship our TeleKit for the 20" telescope on May 21, 1999. Once it arrives, we'll be ready to start construction.

The Telescope Fund now has enough money in it to pay for the kit from AstroSystems. We'll still need money for things like paint, eyepieces, and the trailer to haul it in. Mike Turco has offered to buy the secondary mirror. The Telescope Fund was established to pay for the construction of a telescope around the 20-inch diameter telescope mirror given to the Society by the University of Pennsylvania.

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### May Skies

#### Moon Phases

Last Quarter	5/08
New Moon	5/15
First Quarter	5/22
Full Moon	5/30

### The Planets

Mercury is in the morning sky in May, but it will be so close to the Sun that you probably won't be able to find it.

Venus will be the first and brightest "star" you can see in the evening sky in May.

Mars is in the east after sunset, looking like a bright reddish-orange "star". We are now close enough to Mars for good telescopic viewing, although you may want to wait an hour or two each night, until Mars gets high enough above the eastern horizon to clear the light pollution and atmospheric turbulence.

Jupiter is in the morning sky in May, but is still too close to the Sun for good viewing.

Saturn is lost in the Sun's glare this month.

Uranus and Neptune are in the constellation Capricornus, in the morning skies before dawn.

Pluto reaches opposition on May 30, in the constellation Ophiuchus, near Zeta (ζ) Ophiuchus. That means that Pluto is rising in the east as the Sun sets in the west, and is setting in the west at sunrise. Determined hunters will need dark skies, at least an 8" telescope, and a good finder chart in order to bag Pluto (14<sup>th</sup> magnitude).



## Tips for Observing in Light Polluted Areas

by Mike Turco

The Astronomical League's new Urban Club is an observing club designed for those who live in light-polluted areas. The web site for the Urban Club has a tips list for observing in or near cities. For those who haven't seen it, this is the tip list as excerpted from the A.L. web site.

- Observe during new moon. Just like observing in dark skies, the moon adds light to the night sky and reduces contrast.
- Observe after 10:00 p.m. This gives the dust and water in the air a chance to settle. Dust and water reflect light that can turn a good night into a bad one.
- Observe after 11:00 p.m. Many stores have closed by this time, and because they turn off their lights, a city's light glow is reduced considerably.
- Observe after 1:00 a.m. After the stores have closed, most shoppers and workers have gone home which means that there is a lot less traffic on the streets and freeways, and light pollution is reduced.
- Ask your neighbors over for an observing session. After seeing the effect of light pollution on observing, they will be more cooperative in turning off their lights for you.
- Try to catch your target objects straight overhead. This is always the darkest part of the sky.
- Select the right objects to observe. Magnitude is not everything. A bright galaxy may be invisible, whereas a dim planetary may be easily seen. Small, high surface brightness and stellar objects are easier to observe than large, diffuse objects.
- If you have an altazimuth mount (Dobsonian), try to observe near the meridian. Up-down, left-right motions

translate into north-south, east-west motions and makes following a path on a star chart easier.

- Pay close attention to the weather. Cool, dry nights are best at any location, but are more pronounced in the city.
- Learn to read the quality of the sky by observing stars with the naked eye. A clear night might seem perfect for observing, but may in fact be bad for viewing if the seeing is not good.
- Observe after a rainstorm. The skies appear darker as light is no longer reflected off dust particles in the air.
- Observe after a cold front has come through. The air is more stable and the air pollution has been blown out.
- Use a dark cover to shield your head and eyepiece to shield them from stray light. Use a dew shield on your telescope to shade it from stray light.
- Clean and collimate all optics. Dirty optics scatter light.
- Light pollution and O-III filters are good for planetary and emission nebulae.
- Use a pirate's eyepatch to keep out stray light.
- Pick the darkest section of your site and make an extra effort to block out stray light. Using a light baffle made of a tarp and tent pegs helps, as well as a three-sided wall made out of cardboard. Try to make the immediate area around your site as dark and non-reflective as possible. Use existing structures and foliage to block the direct view of lights.
- A right-angle finder with amici prism under a dark cloth is helpful for finding objects.
- Setting circles are a great aid for finding difficult objects, especially when those objects are quite some distance from a naked eye star.
- A good star atlas, a pair of binoculars, and a one-power finder (e.g., Telrad) with a template for that finder, are important for finding objects in bright, low contrast skies. Telrad-hopping can sometimes be easier and just as useful as star-hopping with a finder. Viewing the sky through your Telrad with binoculars is also a nice trick.
- Use earphones or a radio to mask neighborhood noise. Noise can be very distracting.

Finally, attitude is important. Any observing is better than no observing, or TV.

*Reference:*

<http://www.astroleague.org/al/obsclubs/urban/urbantip.html>



# National Astronomy Day

## at University of Pennsylvania's Flower and Cook Observatory

753 Providence Road, Malvern PA  
Saturday, May 22, 1999

3:00 PM - 8:30 PM

Astronomy Workshops, telescope exhibit, vendors and  
snacks

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**Sales, Snacks, and Stars**  
Things for sale, snacks for munching,  
and stars for viewing

9:00 PM - ??

Observations of Mars, , Venus, the Moon  
and many galaxies and nebulas

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**Telescope Workshop**  
Bring your own telescope or binoculars,  
we'll help you set it up and learn to use it.

*To benefit the Chester County Astronomical Society's Telescope Fund  
(a non-profit organization)*

### Free Admission

(Donations Accepted)

For more information, call Kathy Buczynski at 610-436-0821 or Deb Goldader at 610-407-9213

**Indoor program will run no matter what the weather.**

<b>Time:</b>	<b>Classroom:</b>	
	<u>Topic</u>	<u>Presenter(s)</u>
3:00 PM	Start/Greeting	
3:15 PM	HST Slides: Recent Discoveries	Ed Lurcott Mike Turco
4:00 PM	Sun facts, Solar Observing, Eclipses	Deb Goldader
4:45 PM	Indoor Orrery (solar system model)	Ed Lurcott
5:30 PM	Mauna Kea: A trip to the top of the mountain	Frank Angelini
6:15 PM	Lunar Observations	Jim Anderson
7:00 PM	Deep Sky Observing	Steve Limeburner
7:45 PM	Current Sky May 22, 1999	Kathy Buczynski Jim Anderson
8:30 PM	End of Classroom Activity – Break	
9:00 PM	Night Observing Starts	

#### **Outside Events**

(Ongoing, no specific time)

#### Telescope Workshop:

Visitors are asked to bring  
their own telescopes and  
volunteers will help to set  
up and show visitors how to  
use them.

#### Daylight Observing:

Venus, Moon, Sun, if the  
skies are clear that day

#### Food/Vending:

Tables will be set up with  
snacks for sale along with  
items for fund raising.

Classes will run about 30 minutes each. The sun will set at approximately 8:30 PM EDT, the Moon will just past First Quarter. Nighttime observations should begin at about 9:00 PM.

## News from Neighboring Societies

From *The Delaware Valley AMATEUR ASTRONOMER*, the newsletter of the Delaware Valley Astronomical Association; upcoming Meeting Topics and speakers:

May 14	"Galaxies"	DCCC professor
June 11	"Is There Astronomical Evidence for the Existence of God?"	Dr. Deborah Haarsma
July 9	"The Big Bang Never Happened"	Eric Lerner, author

DVAA meetings are held at the Schuylkill Center for Environmental Education, Hagys Mill Road, Philadelphia. Meetings start at about 7:30 p.m., with the main talk held at about 8:00 p.m. DVAA meetings are open to the general public, free of charge. Contact Mike Turco (610-399-3423) for more information or directions, or for a ride to the meeting. Or check the DVAA Website at

<http://www.libertynet.org/~dvaa/>

From *Focus*, the newsletter of the Delaware Astronomical Society; upcoming Meeting Topics and speakers:

May 18	Dinner Meeting Black Holes	Dr. Harry Shipman
June 15	TBA	

DAS meetings are held at the Mount Cuba Observatory in Greenville, Delaware. For more info contact President Warren Jacobs (610-566-0510). Or check their Website at:

<http://www.physics.udel.edu/>

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### June 11-13, 1999: Mason Dixon Star Party

The 10<sup>th</sup> annual Mason Dixon Star Party will be held on June 11-13 in Spring Valley Park near York, PA. This event features on-site camping, as well as nearby motels. May's Munchables will be providing a 24-hour catering service providing a variety of food. Several speakers will deliver talks on a variety of subjects during the day on Saturday. Door prizes will be given out, including an Orion 8" Deep Sky Explorer Dobsonian telescope. There's a vendor's display area, an astronomical flea market, movies for kids (at night), contests, etc. Copies of the star party handout and registration forms can be obtained by contacting Ed Lurcott.

Or check the Website:

<http://home1.gte.net/dmdewey/mdsp.html>

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## May 16, 1999: NE Astronomy/Telescope Show

On Sunday May 16, 1999, the 8<sup>th</sup> Annual Northeast Astronomy Forum and Telescope Show will be held in Suffern, NY. The Rockland Astronomy Club sponsors this event. There will be a number of talks at the Forum by different people, including Richard Berry, Leif Robinson, and Carolyn Shoemaker. There is also a Telescope Show where you will find vendor displays (vendors such as Celestron, Meade, TeleVue Optics, etc.) as well as club and swap tables. The event is held at the Holiday Inn & Conference Center in Suffern; overnight accommodations are available. Contact Jim Anderson for a copy of the brochure.

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## July 1-7, 1999: ASP Meeting in Toronto

The Astronomical Society of the Pacific is holding their annual meeting in Toronto. This will be a joint meeting with the Royal Astronomical Society of Canada (RASC) and the American Association of Variable Star Observers (AAVSO). The meeting will "focus specifically on partnerships in astronomy research and Education." If you're interested in going, contact Ed Lurcott or Jim Anderson for more details. We have brochures describing the meeting, the speakers, conference topics, etc., in much more detail than can be provided here.

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## AL Observing Programs

One of the benefits of joining the CCAS is that you also become a member of the Astronomical League, a national federation of astronomy clubs. The AL has a series of Observing Awards, and 4 observing clubs based on these awards have been started in the CCAS. These are the Messier Club, the Binocular Messier Club, the Lunar Club, and the Double Star Club. Working on these awards also gives you a plan of observing: "What will I look at tonight?" becomes "Which Messier objects are visible tonight that I haven't seen yet?" Each club has a volunteer coordinator:

Messier Clubs (both): Frank Angelini (610-873-7929)

Lunar Club: Ed Lurcott (610-436-0387)

Double Star Club: Jim Anderson (610-380-4512)

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## CCAS Website

Pete LaFrance has set up a Web page for the Society on the World Wide Web (Internet). He has included some pictures taken by CCAS members. Check it out at:

[http://members.tripod.com/~ccas\\_2/ccas.html](http://members.tripod.com/~ccas_2/ccas.html)

Pete 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 Pete LaFrance (610-268-2616).

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**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**  
3545 N. Stewart  
Tucson, AZ 85716



**CCAS Lending Library**

Our Librarian, Bill O'Hara, has the books in our library all ready for members to borrow. You can drop by Bill's place (call first, of course) to borrow a book. Or you can call Bill before a meeting and ask him to bring a book to the meeting for you. Copies of the catalog are available at CCAS meetings. Bill's phone number is 610-696-1422.



**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 our Treasurer, Pete LaFrance. Mail to:

**Pete LaFrance**  
413 Church Rd.  
Avondale, PA 19311-9785



**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 email message and send it to the editor at [SNY114@aol.com](mailto:SNY114@aol.com)

Or mail the contribution, typed or handwritten, to:

**Jim Anderson**  
19 Bluff Road  
Thorndale, PA 19372-1104



**CCAS Lending Telescope**

You can make arrangements to borrow the telescope for a month by contacting Steve Leiden (296-3793). Club members can borrow the 6" f/8 reflector for a month at a time; longer if no one else is waiting to borrow it.



**Sky & Telescope Magazine Group Rates**

Subscriptions to this excellent periodical are available through the CCAS at a reduced price of \$27.00, which is much less the newsstand price of \$48.00, and also cheaper than individual subscriptions (\$37.95)! Make out a check to the Chester County Astronomical Society, note that it's for *Sky & Telescope*, and mail to Pete LaFrance. Or you can bring it to the next Society meeting and give it to Pete there. Buying a subscription this way also gets you a 10% discount on other Sky Publishing merchandise.



**CCAS Membership Information**

The present membership rates are as follows:

- REGULAR MEMBER**.....\$20/year
- SENIOR MEMBER**.....\$10/year
- STUDENT MEMBER**.....\$ 5/year
- JUNIOR MEMBER**.....\$ 5/year
- FAMILY MEMBER**.....\$ 30/year



**CCAS Officers**

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

- President:** Mike Turco (610) 399-3423
- Vice Pres:** Kathy Buczynski (610) 436-0821
- Treasurer:** Pete LaFrance (610) 268-2616
- Secretary:** Frank Angelini (610) 873-7929
- ALCor and**
- Newsletter:** Jim Anderson (610) 380-4512
- Librarian:** William O'Hara (610) 696-1422
- Observing:** Ed Lurcott (610) 436-0387

