



# OBSERVATIONS



A MONTHLY PUBLICATION OF THE

## Chester County Astronomical Society

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

**FEBRUARY 2003**

(VOLUME 11, NO. 2)

★*Vice President:* Steve Limeburner  
★*Secretary:* Doug Liberati

<http://www.ccasastro.org>

### CCAS February Meeting

**DATE:** Tuesday February 11, 2003  
**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

Our guest speaker for February is Ryan Hannahoe. Ryan is the chairman of the Youth Activities Committee for the Astronomical League. Being just 17 years old, he has appeared in programs run by NBC, ABC, MSNBC, CNN, and the Discovery Channel. Over the past three years Ryan has given over 300 presentations across the US. Approximately 850 newspapers have featured Ryan and his work. He is hailed by the press as being "Mr. Youth in Astronomy".

Ryan has visited and/or observed at Kitt Peak, Mauna Kea, Keck, Subaru, Gemini, NASA's IRTF, and several other observatories. He has more than 400 hours on research telescopes, and has published more than 70 articles and scientific papers.

Ryan will be telling us about the Global Student Telescope Network (GSTN), of which he is cofounder. GSTN is currently the largest network of telescopes accessible to students. In less than 6 months of operation GSTN had over 1,750 schools and youth users worldwide. This project provides real time telescopic images to students through the World Wide Web.



Ryan M. Hannahoe

★ ★ ★ ★ ★

### CCAS February Observing Session

The next CCAS Observing Session will be on Friday February 28, 2003 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 1, 2003. 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 always free of charge.

★ ★ ★ ★ ★

### CCAS Bus Trip to Hayden Planetarium

Mike Turco is serving as our "Tour Guide" for a bus trip to the new Hayden Planetarium in New York City. The trip is planned for Sunday, March 23, 2003. We plan to leave at about 8:00 a.m. from the West Chester area and return there at about 8:00 p.m. It will cost about \$20.00 per person for the bus (assuming we get at least 40 people), and the group rate for adults at the Hayden is about \$20.00, so that's about \$40.00 per person, plus meals. We will be accepting reservations for people 11 years of age or above (those under 18 must be accompanied by an adult, i.e. someone over 21). To make a reservation contact Mike as soon as possible at 610-399-3423.

★ ★ ★ ★ ★



"The same Creator who names the stars also knows the names of the seven souls we mourn today. The crew of the shuttle Columbia did not return safely to Earth, but we can pray they are safely home." President Bush, February 1, 2003.

*Amen.*

## CCAS Beginning Astronomy Class

From Kathy Buczynski, Education Chair:

In light of recent tragic events, I'd like to dedicate the 2003 Introductory Astronomy classes to all astronauts past, present and future from all countries. Their dedication, bravery and adventurous nature inspire all of us to reach for the stars no matter field of work we may take part in. The crew of STS-107 Columbia and their families, at home and at NASA, are in our thoughts as we teach and inspire a new class of interested participants.

"I touch the future, I teach." Christa McAuliffe

### Note: There is still room left in this class!

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

February 4	Spaceship Earth
February 18	The Moon
March 4	The Other Kids on the Block
March 18	Planispheres/Star Charts
April 1	Stars by Design
April 15	The Secret Life of Stars
May 6	Planetarium Field Trip (WCU)
May 20	Telescopes, Binoculars and Mounts

The classes will be held at the University of Pennsylvania's Flower and Cook Observatory in Willistown Township. The FCO is located just a few miles south of Malvern. It is located near the intersection of Warren Avenue and Providence Road, just west of Warren Avenue on Providence Road.

The cost for non-members is \$15.00 per person, and \$25.00 per family (with the same address). **For current CCAS members, the classes are free!** Space is limited to just 40 people, so call Kathy Buczynski to reserve your space now (610-436-0821).

★ ★ ★ ★ ★

### Members and Telescopes Needed

There are two star nights scheduled for this month. These events are listed below. We need help from our members with each of these events; even if you don't have a telescope you can help. Please contact our Observing Chair Ed Lurcott at 610-436-0387 if you can help. Thanks.

**February 10**, 7:00 p.m.—A home school group will meet us at the BVA. This group will number about 25 students, plus parents. Cloud date is February 17.

**February 21**, 7:00 p.m.—A group of Girl Scouts at the Flower & Cook Observatory. No cloud date given.

★ ★ ★ ★ ★

### Upcoming Meeting Topics

March: Eclipsing Binary Stars

April: Field trip to Eastern College Observatory

★ ★ ★ ★ ★

## February Skies

### Moon Phases

New Moon	2/1
First Quarter	2/9
Full Moon	2/16
Last Quarter	2/23

### The Planets

Mercury appears low in our morning sky in early February. It will not be far above the horizon before sunrise and therefore tough to spot. Look for it about an hour before sunrise, much lower and to the left (north) of Venus.

Venus continues to dominate the morning sky this month.

Mars is also in the morning sky, not far from its "rival" Antares. It is so far away now that it is a tiny featureless dot in a telescope. Wait until August, when Mars will be at its closest to us in a lifetime!

Jupiter reaches opposition on February 1, when it will be at its closest to us for this year. That means it appears as large as it ever does in a telescope, and that it is visible all night during February.

Saturn is well placed for telescopic observations as soon as night falls. Furthermore, Saturn is at perihelion in July 2003, meaning that it is the closest it has been to the Sun (and therefore us) in 29 years. Plus, its rings are tilted at their greatest angle in the last 15 years. Don't miss this show!

Uranus is behind the Sun in February.

Neptune is also behind the Sun this month.

Pluto is in the southeast at dawn, but very hard to find this month. You'll have to wait until next summer to look for Pluto.

★ ★ ★ ★ ★

### Newsletter Deadlines

These are the deadlines for submitting material for publication in the newsletter, through the June 2003 issue.

<u>Issue</u>	<u>Deadline</u>
March 2003	02/21/2003
April 2003	03/28/2003
May 2003	04/25/2003
June 2003	05/23/2003

★ ★ ★ ★ ★

### Membership Renewals

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

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

★ ★ ★ ★ ★

## Calendar Notes

March 4, 2003 (Tuesday)	Beginning Astronomy Class Location: Flower & Cook Observatory 7:00 p.m. EST
March 11, 2003 (Tuesday)	CCAS Meeting Location: West Chester University 7:30 p.m. EST
March 18, 2003 (Tuesday)	Beginning Astronomy Class Location: Flower & Cook Observatory 7:00 p.m. EST
March 28/29, 2003 (Friday/Saturday)	CCAS Observing Session Location: BVA sunset
April 1, 2003 (Tuesday)	Beginning Astronomy Class Location: Flower & Cook Observatory 7:00 p.m. EST
April 8, 2003 (Tuesday)	CCAS Meeting Location: West Chester University 7:30 p.m. EDT
April 15, 2003 (Tuesday)	Beginning Astronomy Class Location: Flower & Cook Observatory 7:00 p.m. EDT
April 25/26, 2003 (Friday/Saturday)	CCAS Observing Session Location: BVA sunset
May 6, 2003 (Tuesday)	Beginning Astronomy Class Location: Flower & Cook Observatory 7:00 p.m. EDT
May 10, 2003 (Saturday)	National Astronomy Day
May 13, 2003 (Tuesday)	CCAS Meeting Location: West Chester University 7:30 p.m. EDT
May 20, 2003 (Tuesday)	Beginning Astronomy Class Location: Flower & Cook Observatory 7:00 p.m. EDT
May 23/24, 2003 (Friday/Saturday)	CCAS Observing Session Location: BVA sunset

★ ★ ★ ★ ★

## Astronomus

### A Journal for Younger Astronomers

By Bob Popovich

#### “Odds and Ends”

In common parlance, the expression “odds and ends” brings to mind things of lesser importance. Afterthoughts. Perhaps even trivialities. But for those of us who delight in the night sky, “odds and ends” takes on a meaning that is anything but trivial.

Astronomers of all sorts actually seek out the odd and inexhaustibly reach for the ends of things. Those features of the night sky that are regularly seen or easily within our grasp are often of just passing interest to us. It’s the odds and ends

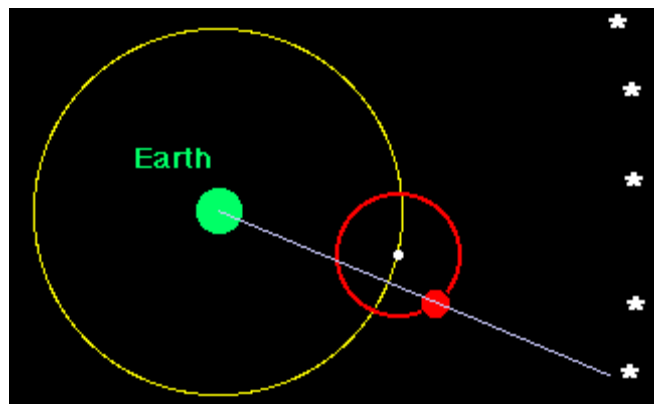
that capture our mind and imagination and make astronomy the joy that it is.

Some of you, at this point, may be thinking that most astronomers are odd to begin with. True enough. And proud of it!

How about starting with the Crab Nebula? After all, Messier did. M1 came into being in AD 1054 following what must have been a huge supernova. Estimates are that it reached a magnitude of  $-5$  and must have been visible in the daytime. Astronomers of China dutifully recorded the event while Europeans, perhaps too busy besieging each other’s castles, failed to record this stellar nova. Very odd, indeed. And this delicate beauty, composed of material *screaming* through space at 1,000 km/second, is currently about 13 light years across and has a surface brightness of 11.0. So, when will the matter become so rarified that it will fade from the view of us earth-bound observers? I can’t say when, but its end is coming...

Slide down to the other end of Taurus—the Hyades. Located about one degree west of  $\epsilon$  Tauri is Hind’s variable nebula—NGC 1555. It displays an exceedingly odd variability in apparent brightness. So odd, in fact, that between the years 1869 and 1890, astronomers couldn’t even find it. Its actual brightness has yet to be determined and it represents a daunting target to this day.

As long as we’re in this part of the sky, let’s not pass up an opportunity to view the solar system’s two giants—Jupiter and Saturn. Both make for outstanding viewing at this time. Ever since people looked up at the night sky, these two planetos (Greek for “wanderer”) have been a source of delight and fascination. For unlike other stars, these two, along with Mercury, Venus and Mars, were odd in that they changed their position over time. And those who followed their movement realized just how odd. They moved “forward” (east to west), then stopped, moved “backward” (west to east) then stopped again and then moved forward once more. The unscientific answer to this odd movement was that they must be gods—hence their names.



But the scientific explanation flew well past odd right into the realm of bizarre. Though actually envisioned by Hipparchus, it was Ptolemy who developed the geometric explanation of planetary motion that bears his name. It described the movement of the planets in terms of epicycles—a series of little orbits along the circle of a great orbit about a fixed Earth

and in front of the background of fixed stars. (Note: This is a simplified rendering. Ptolemy placed the Earth off-center of the great circle.)

It took nearly 15 centuries to put an end to the outlandish theory. If you'd like to see this model in action, go to: <http://csep10.phys.utk.edu/astr161/lect/retro>

But whatever you do, don't pass up the show that these two are putting on for us now because it will end soon enough...

Staying in this neighborhood, look at Orion. You'd be hard pressed to identify a more magnificent constellation. Or one with more fascinating oddities. To begin with, Bellatrix ( $\gamma$  Orionis) is the warrior, or Amazon, star. How odd that the great hunter's left shoulder should be marked by a star named for a female warrior. Could it be that Orion had issues?

Now look at the star that marks his right armpit—Betelgeuse. This red supergiant is probably the largest of all naked-eye stars. But what makes this star odd is that it is also the largest variable star. Over an irregular cycle of about 2,100 days, its light output varies by nearly 45%. But stranger still, its diameter fluctuates some 100 million miles—from a minimum of 400 million to a maximum of 500 million. By comparison, it is about 93 million miles from the Earth to the Sun.

Even the European Space Agency seeks odds and ends. Scheduled for launch in early 2003 is the Rosetta probe. Its mission is to chase down a comet. In this case, Comet Wirtanen. And on our solar system's odd-o-meter, comets must surely be in the red zone. The Rosetta probe will hurl out to the far end of the comet's orbit and will be maneuvered for a landing on it. There it will (hopefully) perform multiple experiments designed to help us gain a better understanding of these strange and elusive bodies.

And how about you? Do you devote time and energy to tracking down an oddity or pushing your telescope to its magnification end limits? Are you happier searching for Hind's variable nebula than the crater Tycho? Then you are an "odds and ends" astronomer. Good for you!

Next time: "The Milk Aisle."



## **CCAS Secretary's Report**

### **Meeting of January 13, 2002**

By Doug Liberati

Meeting commenced at about 7:30 PM on January 13th. Twenty members were in attendance, including officers. Officers in attendance included Mike Turco, Steve Limeburner, and Doug Liberati.

Mike welcomed the group back to a new calendar year of meetings of the CCAS. He shared a letter with the group from a South African family, the Hobsons. Mike began a correspondence with Fiona and Rob Hobson after his Forum column appeared in Sky and Telescope. They wrote to relate their wonderful experience traveling to the northern part of South Africa to experience the recent total eclipse.

Vic Carlucci reported on his initial efforts as Public Relations Chair. These efforts are panning out; he recently received a call from a Wayne Suburban paper who want to do a story on CCAS. They have contacted Mike.

Mike proposed a group bus trip to Hayden Planetarium, details of which have circulated by email and which will appear elsewhere.

Steve Limeburner updated us on upcoming programs, including February's, which will feature Ryan Hannahoe. Ryan is Youth Activities Committee Chair for the Astronomical League. Ed Lurcott presented an observing report on upcoming events and Kathy Buczynski updated us on the Educational Committee's work on the upcoming Beginning Astronomy class. She also had extra flyers available for those with a place to post them.

The evening's program was a video presentation on Jupiter and Saturn, coinciding with their current visibility.

The meeting adjourned at about 9:00 PM.



## **E-Mail from Fiona Hobson on Solar Eclipse**

This is the text of the message Mike Turco read to us at the January meeting regarding the December 2002 solar eclipse:

My family and I went to see the 4 December 2002 eclipse of the sun, and it was such a wonderful, surprising experience that I'd like to tell you about it. I know you've seen a partial eclipse, (you mentioned a cruise on which you lectured about it), and I have too, but really, a total eclipse is something else.

The 2002 eclipse's path of totality passed along the northernmost borders of our country, so we made the great trek north to see it. Early on the morning of 4 December we joined several thousand other people at the official Eclipse Viewing Site of the South African Astronomical Society. It was a big bare ploughed field, right in the centre of the line of totality.

Soon after sunrise the sky became overcast. At 7.12 a.m. "first contact" was announced over a loudspeaker, but no one could see the sun. Minutes passed, then suddenly people were screaming and there was the sun in a small gap in the clouds—a slightly dented sun. Soon it was gone again. We waited, and the clouds thickened. Then again the sun peeped through. This happened many times—a thinnish patch of cloud would pass by, people would yell, and we'd all get a glimpse of the sun through the clouds. Gradually the eclipse progressed. Every time we saw the sun, the crescent was thinner—totality (8.18 a.m.) was rapidly approaching, but it was completely overcast. I more or less resigned myself to seeing just the darkness, but our teenagers said, no, they have prayed and they are sure we'll see it all. Well. The loudspeaker announced "two minutes to totality" and the sun moved into a thin patch of cloud. We could see it dimly through the clouds, a crescent-shaped sliver. As the countdown continued, the sliver of sun got thinner and thinner. At the very last second, as the loudspeaker said "...4, 3, 2, 1, the diamond ring....", the sun moved into a small

completely clear patch of sky. A complete miracle. And there was the diamond ring.

Now, I have seen many pictures and videos of eclipses, I've explained them to school kids, I thought I knew exactly what I would see. I was looking forward to seeing the eclipse from a scientific point of view. However, it is one thing seeing photos on paper. It is quite another thing seeing the eclipsed sun up there in the sky. The emotional effect of it was the biggest surprise I've had in a long time.

There in that clear patch of sky—dark sky—was a soft misty ring of corona with a bright diamond of light on one side. It seemed to me to be the most beautiful thing I had ever seen. The sky was so dark, that ghostly ring so exquisitely delicate, the diamond sparkling like crystal. The sight of it just knocked the wind right out of me, and I found myself in tears. All over the field people were screaming and crying. Then the bright diamond disappeared, and the full corona just "burst" out. I had thought that the corona would be dim, that a bright corona was basically an artifact of good lenses and long exposures. But no, there it was up in the sky for all to see, just as in the best photos—the black sun surrounded by a large, bright, feathery corona, again more beautiful than I could ever imagine.

Our teenage girls were too busy jumping up and down and screaming to use their binoculars, but our boys used theirs, and they said they could see detail in the corona and tiny orange-pink curls here and there around the edges of the sun. "Cool."

After about 20 seconds, clouds covered the sun again. Then we looked around at the eerie eclipse darkness. Totality lasted only 83 seconds, and then through the clouds we saw a tiny spot of sun appear, and the lights came up as suddenly as at the end of a play.

Then we celebrated. All around us were the people we had met while waiting for the eclipse to start—wonderful people. We had met old friends, and "e-mail friends" whom we'd never seen before, and made brand new friends. There were professional astronomers from Czechoslovakia, and young astronomers from Poland, and students from America, as well as lots of lovely ordinary South Africans.

We made friends with a young couple who had parked next to us at the viewing site. Afterwards we exchanged e-mail addresses, and the girl wrote down their first names for me. "What is your surname?" I asked. She hesitated, then wrote it down. "That's a lovely name," I said. She hesitated again, and smiled. "It will be," she said, "He's just proposed to me!" So there was even more celebrating to do! The festive atmosphere and the friendly people, together with the incredible spectacle we had just witnessed, made it an amazing day.

There were no animals at our viewing site, so we didn't see them going to bed. Our instruments couldn't "catch" the sun long enough to see sunspots, so we didn't see the black moon "eating" them. There was no sunshine, so there were no shadows to make crescent images. We saw no stars around the eclipsed sun, and I was so overwhelmed that I forgot to

turn to see the sunset colours on the horizon as the light returned. But what I did see will stay with me forever. I think it is something everyone should see at least once in a lifetime.

So I thought I must tell you about it. The next "favourable" total eclipse is in Turkey in 2006, then in China in 2009. There are ones across the USA in 2017 and in 2024. Here in South Africa we'll have to wait until 2030 before we'll see a total eclipse again. So I'm really glad we got to see this one....

Best wishes,

*Fiona Hobson*



## **Invisible Tornadoes**

By Dr. Tony Phillips

The biggest problem with tornadoes—next to the swirling 300-mph winds—is that it's hard to see them coming.

But soon scientists will be able to foresee, not merely tornadoes, but the severe storms that spawn them, hours before there's even a cloud in the sky! Mind you, this isn't a vague "30 percent chance of rain today" type forecast. Thanks to a new satellite technology being co-developed by NASA, NOAA and the U.S. Navy, emergency personnel will actually watch the invisible beginnings of a storm unfold.

"They're going to know where the storm centers are forming before the storms are there," says James Miller, project manager for Earth Observing 3 (EO3), a satellite that will test out this new technology in 2005 or 2006.

Unlike the tiny water droplets that make up clouds, the water vapor that feeds storms is invisible to the human eye. Water vapor is easy to detect, however, at infrared (IR) wavelengths. EO3 will use an IR-sensitive device called GIFTS—short for Geosynchronous Imaging Fourier Transform Spectrometer—to make 3D movies of temperature, pressure, and water vapor in Earth's atmosphere.

Three or four hours before the storm clouds are visible, meteorologists will notice water vapor converging toward an area. This water vapor, which provides the "fuel" for the coming storm, is too close to the ground for today's weather satellites to see. Then meteorologists will check precisely how the air temperature over that area varies vertically (something else ordinary satellites can't do). This temperature variation determines whether the humid air will rise to form storm clouds. And when these conditions look ominous, the meteorologists can alert the public.

The goal of EO3 is to "test drive" this new technology and prove that it works. If successful, NOAA plans to incorporate GIFTS-style sensors into its next generation of weather satellites.



These future satellites will give meteorologists exactly what they need in order to give the people exactly what they need: an earlier warning that tornadoes may be on the way.

GIFTS and EO3 are managed by NASA's New Millennium Program. NASA and NOAA will operate EO3 during its first year in geosynchronous orbit above the United States. If the technology works as planned, the U.S. Navy will assume control of EO3, move the satellite to a point above the Indian Ocean, and use it to monitor weather in shipping lanes there.



This severe tornado hit near Dimmitt, Texas, on June 2, 1995.

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

The *Space Place* now offers a three-minute answer to a space-related question on a toll-free phone line. Dr. Marc Rayman, Deep Space 1 Manager (and an amateur astronomer himself), answers a question about space or space exploration. Call (866) 575-6178 to hear the monthly message.



### 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

### 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>



## LITTLE KNOWN ASTRONOMY HISTORY



JOHN DOBSON GETS HIS FUNDAMENTAL INSIGHT.

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, Bill O'Hara, to make arrangements to borrow one of the books in the CCAS lending library. Copies of the catalog are available at CCAS meetings. Bill's phone number is 610-696-1422.

### 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 [jim.anderson@mckesson.com](mailto:jim.anderson@mckesson.com)

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:

[jim.anderson@mckesson.com](mailto:jim.anderson@mckesson.com)

### 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): Frank Angelini  
(610-873-7929)

Lunar: Ed Lurcott  
(610-436-0387)

Double Star: 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 Officers

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

**President:** Mike Turco  
(610) 399-3423

**Vice Pres:** Steve Limeburner  
(610) 353-3986

**Treasurer:** Pete LaFrance  
(610) 268-2616

**Secretary:** Doug Liberati  
(610) 827-2149

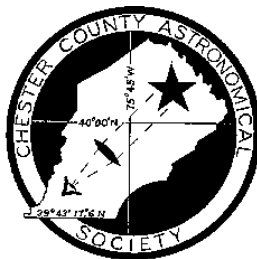
**ALCor and  
Newsletter:** Jim Anderson  
(610) 857-4751

**Librarian:** William O'Hara  
(610) 696-1422

**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 our Treasurer, Pete LaFrance. Mail to:

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

### *Sky & Telescope* Magazine Group Rates

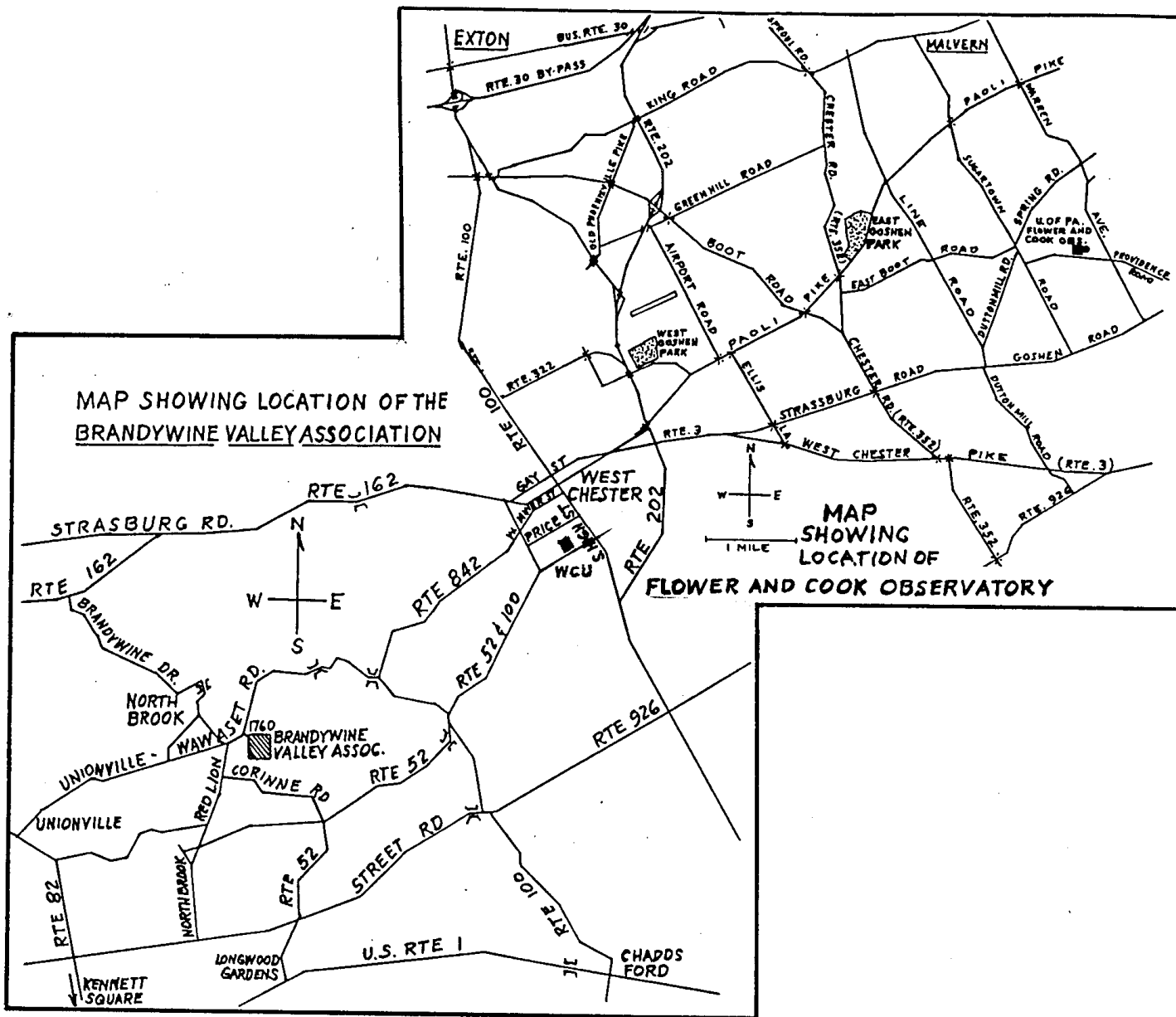
Subscriptions to this excellent periodical are available through the CCAS at a reduced price of **\$29.95** which is much less than the newsstand price of \$54.00, and also cheaper than individual subscriptions (\$39.95)! Make out a check to the Chester County Astronomical Society, note that it's for *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 Website

Pete LaFrance is the Society's Webmaster. You can check our Website at:

<http://www.ccasastro.org/>

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) or e-mail to [lafrance@kennett.net](mailto:lafrance@kennett.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).