



# OBSERVATIONS



A MONTHLY PUBLICATION OF THE

## Chester County Astronomical Society

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

**DECEMBER 2001**

(VOLUME 9, NO. 12)

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

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

### The Gift of the Sky

By Bob Popovich

The gift of the sky first arrived in his corner of the galaxy on Christmas Eve, 1967. Now the back porch of a three-flat on Chicago's North Side seemed hardly the place for a 10 year-old's introduction to astronomy, yet there it was to be.

For weeks he had been wishing upon a star for a telescope (and what budding astronomer hasn't!). But under that year's tree lay a beautifully wrapped box that *looked* about the right size. "Could it possibly be?" he thought. He slowly raised it off of the floor. It *felt* right. He gently shook it. It *sounded* right, too. But there could be no confirmation until after his return from Christmas Eve service. "We won't be home from church until after 8:00 PM, and it's only morning now!" was his anguished thought.

The day did pass and eventually he was in church. The service was a blur of infinite length, as his mind had never left home. The final *Amen* catapulted him out the door and to the car. But during the ride home, doubt came upon him. "What if it's not a telescope, but a truck or something?" he thought. "Well, I guess a nice, shiny truck is a wonderful gift, too." NO! His heart and his mind were set on a telescope and that's what it had to be.

Bolting through the door he mauled the wrapping paper like the Tasmanian Devil from the "Bugs Bunny Show." And there it was—a big, glossy box with beautiful color photographs of Saturn, our moon, stars and a galaxy. And in big, bold letters its proud designation:

#### **TASCO 60 mm Refracting Telescope**

Complete with an astronomy handbook and a sky chart, this scientific instrument was to provide a lifetime of discovery. It said so on the box so it had to be true.

Off flew the box top. He had the telescope set up on its altazimuth tripod before the box top even hit the floor. The next step was the official photograph. Picture this—a 10-year-old boy in his best (and only) suit hugging a telescope. Preserved forever for posterity.

Then out on the back porch for first light. It was very cold and very clear that night. And in those days the streetlights were not the glaring monsters they are today. The light coming from them was dimmer and less dispersed. And when shopkeepers closed up for the night, most of their lights were turned off as well.

His mind raced with excitement. His hand shook. Looking at the star chart, he thought, "How do you hold it? Why don't the stars look the same as the chart? Why is east on the wrong side?" He wondered if one of the bright stars might be Saturn so he could see all those pretty colors through his telescope just like the picture on the box. More thoughts. More confusion. "Could that star be Alpha Centauri?" ("Lost in Space" was one of his favorite TV shows.)

No longer able to think straight, he turned the telescope randomly to an hourglass shaped constellation. It was Orion and its Great Nebula, M42. He was astonished. It was so much more beautiful than any of the pictures on the box. His eye couldn't leave the eyepiece. Time stopped. The cold faded. Street noises ceased. Rigel, Betelgeuse and the stars of the belt were laser-like points of light. The nebula had an eerie-green color to it. He pretended that he was an astronaut looking through the window of his space ship the *Jupiter 2*.

It the nights that followed came star clusters, planets and the Milky Way. They became his friends. They were there when he needed them. To celebrate with him when he was happy. To lift his spirits when he was low. And even to get him to think about the awesome beauty of Creation and its Creator. And these friends remained constant long after the TASCO had left him.

Years later the 10-year-old would come to understand that the telescope wasn't really the gift of that special Christmas. It was merely the invitation. The true gift was for him only, yet available to everyone. The true gift was seemingly infinite in its size and distance, yet through the telescope he could reach out and touch a piece of it. The true gift needed no storage, transportation or repair.

The true gift is the sky. It is with all of us wherever we go because it resides within our hearts.

Merry Christmas



**Member Photos**

**Aurora Borealis display of November 5, 2001**



Photo by Jeff Goldader



Photo by Kathy Buczynski



Photo by Kathy Buczynski



Photo by Kathy Buczynski

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**Leonid Meteor Shower  
November 18, 2001**



Photo by Jeff Goldader

The short streaks on the photo are the trails of stars; the longer red one is a Leonid meteor.

## CCAS December Meeting

DATE: **Tuesday December 11, 2001**  
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 (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. If you arrive early enough, you may be able to get an on-street parking space. A map is included on a later page.

Our guest speaker will be Ryan M. Hannahoe, the Youth Activities Committee Chairman for the Astronomical League. Ryan is a 16-year-old sophomore at Schuylkill Valley High School. He is currently a member of 7 astronomical organizations. He is also the President and Founder of the Schuylkill Valley Astronomers. Over the last 3 years Ryan has delivered over 110 volunteer lectures across the United States. He has attended the Pennsylvania State University's Aerospace Camp and the University of Arizona's Advanced Astronomy Camp.

Ryan has won several national awards in his work to promote Youth in Astronomy. The Astronomical League has named him an Exceptional Young Astronomer. He has won the national Jack Horkheimer Award. Ryan has raised thousands of dollars for his cause. He has become known as the "Fireball" to bring youth into astronomy.

Ryan is well known for his work by both amateur and professional astronomers. Just recently he was awarded time on the Mt. Evans Observatory. In addition, he has visited and/or observed at Kitt Peak, Chamberlain, Schupmann / McGregor, Mt. Lemmon, Steward, Mt. Bigelow and several other observatories. He has had well over 50 papers published in his field. Ryan has been featured in *Sky & Telescope* and other national magazines. He is Editor-in-Chief and co-author of *The Sky's the Limit*. In addition, Ryan does astrophotography: some of his images have appeared in magazines and national newsletters.



Ryan with one of the telescopes he has built.



## CCAS December Observing Session

The next CCAS Observing Session will be on Friday December 14, 2001 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 December 15, 2001. 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 'scope. CCAS Observing Sessions are always free of charge. Children are always welcome as long as an adult accompanies them.

To get to the observing site at the BVA, 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. A map showing the location of the BVA is included on a later page.



### Newsletter Deadlines

These are the deadlines for submitting material for publication in the newsletter, through the June 2002 issue.

<u>Issue</u>	<u>Deadline</u>
January 2002	12/30/2001
February 2002	01/27/2002
March 2002	02/24/2002
April 2002	03/24/2002
May 2002	04/28/2002
June 2002	05/26/2002



### December Skies

#### Meteor Shower: December 13-14

The annual Geminid shower is expected to peak on Thursday night, December 13-14. The Moon will not interfere with this shower, as New Moon falls on the same night. Because the radiant point for this shower is in Gemini, which is rising in the east at sunset, a satisfying meteor watch can begin as early as 10:00 p.m. local time. It won't match the Leonid "storm" we saw last month, but this shower has been known to produce as many as 75 meteors per hour. Geminid meteors usually are bright, slower moving than those of other showers, and are often yellow in color. Typically, the rates increase steadily for several days before the peak (Dec. 11 to Dec. 14) and then drop off rather quickly after the peak.

#### Partial Solar Eclipse: December 14

There will be a partial eclipse of the Sun on Friday December 14, starting just before sunset. Maximum eclipse will not occur, however, until the Sun has sunk below our horizon. That means that only a sliver of the Sun will be covered, and right at sunset, so if you're not paying attention you might not even notice! The eclipse should start at about 4:10 p.m. EST. Make sure you use safe solar filters to observe solar eclipses!

Winter Solstice: December 21 at 2:21 p.m. EST

The Sun reaches its southernmost point in its annual apparent path in our sky, and “stands still” before moving northward again. For us in the Northern Hemisphere of Earth, that marks the first day of winter. It’s the first day of summer in the Southern Hemisphere.

The Moon Occults Saturn on December 28

The Moon will pass in front of (occult) the planet Saturn, as seen from our area on the morning of Friday December 28. Saturn will disappear at about 4:10 a.m. Eastern Standard Time (EST) and reappear on the other side at about 4:40 a.m. This can be a great sight to see, as it takes the Moon about 75 seconds to cover the planet and its rings!

Moon Phases

Last Quarter	12/07
New Moon	12/14
First Quarter	12/22
Full Moon	12/30

The Planets

Mercury appears low in the southwest just after sunset as the month ends. It will be higher in our evening sky (and easier to spot) during the first half of January.

Venus is pretty much lost in the Sun’s glare during the month of December.

Mars is still in our evening sky. It is not too hard to find, as it is a bright reddish-orange “star” visible in the southern part of the sky soon after sundown. It’s the brightest star in that part of the sky (it’s in Aquarius this month). We are getting farther away from Mars, too far for good telescopic observations.

Jupiter is in Gemini this month, rising in the east after Saturn. Jupiter outblazes even Saturn, and there’s no mistaking it for anything else in that part of the sky! Jupiter reaches opposition on New Year’s Eve, December 31.

Saturn is now rising in the east at nightfall, getting progressively higher in the sky each evening. It is near Aldebaran in Taurus, and the close pairing of these two nearly equal lights could fool you into thinking they’re the Gemini twins, Castor and Pollux. Saturn is a glorious sight, with the rings tipped fully open to our view. Saturn reaches opposition on December 2.

Uranus is in Capricornus this month. This is a good month to find Uranus, as it is in our evening sky.

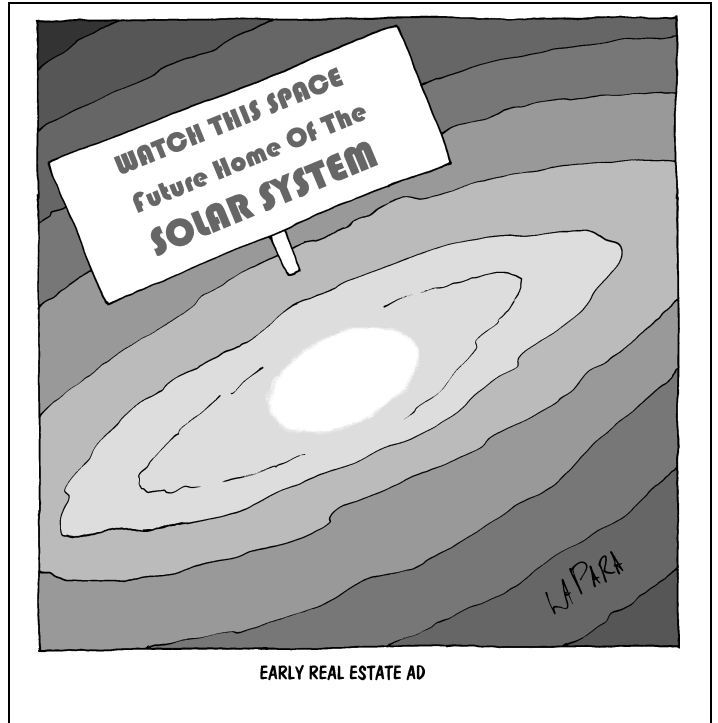
Neptune is also in Capricornus, and therefore also in our evening sky this month.

Pluto is still lost behind the Sun’s glare this month, as it was in November.



**Observer’s Handbook 2002: Update**

The books haven’t arrived yet. They’re probably awaiting inspection at some border checkpoint, to make sure they’re not terrorist manuals or something like that... As soon as they show up, I’ll start contacting those who ordered a copy.



Cartoon by Nicholas La Para



**Useful Web Sites for Aurora News**

By Jeff Goldader

Did you miss the recent auroral display? Do you want to make sure this doesn't happen again? Here's some help.

Aurorae come from bursts of energetic particles given off by solar flares and coronal mass ejections from the Sun. The numbers of these bursts rise and fall with a period of about 11 years, and we're just past the peak of the current cycle. When these charged particles enter Earth's magnetic field, they energize oxygen in the upper atmosphere and make it glow, causing the aurorae. Usually, the aurorae are confined near Earth's poles, but when an especially energetic burst occurs, the aurorae can move towards the equator, sometimes enough to be seen from mid-latitudes.

There are three key WebPages at which you want to look.

The webpage <http://www.sel.noaa.gov/today2.html> gives you "Today's Space Weather," courtesy of the US Government. The "Solar X-ray Flux" plot tells you the high-energy X-rays being detected by satellites, in different energy bands. If the lines have strong vertical spikes in them, that means a solar flare has happened. If those lines go up into the "X" class, that means that a flare strong enough to potentially trigger aurorae has happened. The energy flux is plotted versus Universal Time, or our time here plus 5 hours.

After a flare occurs, the outrushing gas takes 24-48 hours to reach Earth, if it does in fact hit us directly on. The impact of the gas bubbles causes the aurorae to flare up and move towards the equator. To see the current level of auroral activity (the "Kp" index), move down the webpage and look at the "Satellite Environment Plot." Pay attention to the bottom panel, the one with the green/yellow/red barchart. If the

rightmost (that is, most current) bar is red and up at the 7-9 level, the aurorae are active and perhaps moving our way.

One final check is possible: look at a near-real-time image of the aurorae from space. Check out <http://www.sel.noaa.gov/pmap/> to see maps of the expected positions of the aurorae. The left-hand picture shows the Northern Hemisphere view. (Click on the picture to get an expanded view.) If the aurora, the yellow/orange/red ring, is down near Pennsylvania, go outside and take a look!

To see the Sun itself, take a look at the SOHO satellite webpage ([sohowww.nascom.nasa.gov](http://sohowww.nascom.nasa.gov)). The SOHO satellite monitors the Sun continuously from a point between Earth and the Sun. You can see near real-time images of the surface of the Sun in the ultraviolet (the EIT cameras), optical images of the corona (the LASCO C2 and C3 coronagraphs), and a map (the MDI image) of the strong magnetic fields that produce sunspots, solar flares, and coronal mass ejections—the sources of the aurorae. Click on the "The Sun Now" link at the top left of the page to see the most recent available SOHO images. There is a wealth of material on this site, including time-lapse movies showing the changes on the Sun (but be prepared to wait a long time for the movies to download over a modem!).



### Help Needed With Society's 20" Telescope

The Society's 20" telescope belongs to the whole Society; it is intended to be available for use by members at Observing Sessions, and even for short-term borrowing by Society members. The problem we have with implementing this policy is, simply put, lack of mobility. We need a member with a big enough truck or minivan, and preferably with the storage space at home for the telescope, to volunteer to be the telescope's "custodian" and "chauffeur." The custodian would of course be able to use the telescope whenever it wasn't out on loan. The biggest part of the telescope is the bottom part; it weighs a couple hundred pounds. We have wheels and handles that convert that piece into a large "wheelbarrow" for moving it, though, and ramps so it can be wheeled right into a vehicle. Ed Lurcott is willing to keep storing the telescope in his garage, if someone can volunteer to be the chauffeur, but not the custodian. If you can help, please call Ed Lurcott.



### 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>



## BACKYARD ASTRONOMY AN UNAUTHORIZED GLOSSARY

By Nicholas La Para

**Apparent Magnitude:** you in a mirror

**Asteroids:** curiously powerful rock-hard mints

**Binary Star:** Donny and Marie before the breakup

**Black Hole:** where your money goes

**Celestial Equator:** tropical spa run by Club Med

**Celestial Poles:** eastern Europeans at Celestial Equator Spa

**Celestial Sphere:** beach ball at Celestial Equator Spa

**Cepheid Variable:** Cepheus cheating on Cassiopeia

**Declination:** polite refusal

**Double Star:** come-back performer such as John Travolta

**Ecliptic:** Internet swindle

**Galaxy:** where the world turns

**Globular Cluster:** damp gumballs that stuck together

**Light Year:** lengthy diet

**Messier Catalogue:** file structure on your computer

**Messier Object:** that file you can't find

**Meteor:** asteroid (which see) you spit out

**Milky Way:** rival of Snickers

**Open Cluster:** chocolate-covered-peanut rival of Milky Way

**Planetary Nebula:** earth's smog

**Proper Motion:** kneeling in church

**Red Giant:** large Native American

**Right Ascension:** "I do" at the altar

**Spectral type:** classification of ghosts

**Universal Time:** intergalactic newsmagazine

**Vernal Equinox:** heavenly sameness, as contrasted with "invernal equinox"



### CCAS to be featured on WCOJ Radio!!

This just in... CCAS President Mike Turco will be the guest on WCOJ Radio (1420 AM) on Monday, December 24, 2001 from 10:00 – 11:00 a.m. on the program "Circling the Square." The topic of discussion will be the Chester County Astronomical Society!

"Circling the Square" is a daily call-in talk show. The show features Chester County people, expressing their opinions on issues that affect Chester County. Each show features guests from area businesses and organizations, and callers with questions are always welcome.



Information for CCAS Membership Directory

Name: \_\_\_\_\_

CCAS Position: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Phone: \_\_\_\_\_

Fax: \_\_\_\_\_

E-mail: \_\_\_\_\_

Memberships: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Equipment: \_\_\_\_\_

\_\_\_\_\_

Astro Interests: \_\_\_\_\_

\_\_\_\_\_

Club-related Skills: \_\_\_\_\_

\_\_\_\_\_

Other Interests: \_\_\_\_\_

\_\_\_\_\_

The Membership Directory is updated once a year. Please submit any additions or changes to Kathy Buczynski by June 30 and December 31 each year. Submissions can be made on this form and can be mailed, faxed, e-mailed, or presented in person at any CCAS function.

Kathy Buczynski  
106 Afton Way  
West Chester, PA 19380

Fax: 610-436-0829  
e-mail: [Kbuczynski@aol.com](mailto:Kbuczynski@aol.com)

## CCAS Information Directory

### CCAS Lending Telescope

Contact Kathy Buczynski to make arrangements to borrow the Society's lending telescope. CCAS members can borrow the 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 email message and send it to

**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

### 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

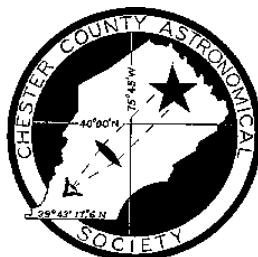
**Secretary:** Doug Liberati  
(610) 827-2149

**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



### 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

### 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://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) or e-mail to [lafrance@chesco.com](mailto:lafrance@chesco.com)

