

OBSERVATIONS



A MONTHLY PUBLICATION OF THE Chester County Astronomical Society

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

NOVEMBER 2000

(VOLUME 8, NO. 11)

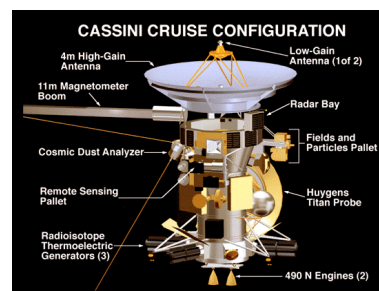
http://members.tripod.com/~ccas_2/ccas.html

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



It's Jupiter Month!

Jupiter reaches opposition on November 28, meaning we are as close to it as we will get this year. That also means that this month is a great time to observe Jupiter! The Cassini spacecraft took the true-color image at left on October 8, 2000 when the spacecraft was 77.6 million miles from Jupiter. Cassini (pictured on the right) will make its closest approach to Jupiter on December 30, 2000, getting a gravity-boost on its way to Saturn (arriving there in 2004). Images courtesy NASA/JPL.



CCAS November Meeting

DATE: Tuesday November 14, 2000
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 on a later page)

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. CCAS meetings are always open to the public, and free of charge. Children are welcome as long as an adult accompanies them.

Have you seen those astronomy vacation ads in the back of *Astronomy Magazine* or *Sky & Telescope* and wondered what they are all about? If so, attend November's meeting where Roy and Elise Furman will take you on a slide show tour of **Astronomical Adventures, Star Hill Inn, Jack Newton's Imaging Center** and the **Greenwich Royal Observatory**. You'll see the observing sites, the telescopes you'll use, the accommodations, and the scenic and historic places to visit during the daylight hours.



Public Open House: FCO

There will be a **FREE** public open house program at the University of Pennsylvania's Flower & Cook Observatory in Malvern, PA on Friday November 17, 2000. The program starts at **8:00 p.m. EST**. The featured presentation for November is "Autumn Night Skies," delivered by the students of Dr. Deborah Goldader's Astronomy 250 class at the University of Pennsylvania. If the skies are clear, there will be observing with the Observatory's telescopes. Children are always welcome as long as an adult accompanies them.

The Observatory is located on Providence Road, just west of the intersection with Warren Avenue. A map is included on a later page.



CCAS November Observing Session

The next CCAS Observing Session will be on Friday November 24, 2000 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 November 25, 2000 (that's Thanksgiving weekend, by the way). 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. Make sure to dress warmly, as it gets cold rather quickly at this time of year.

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 Content Survey: Results

by Jim Anderson

A total of 44 surveys were distributed to the members in good standing. 22 surveys were returned; that's a return rate of 50%, which is a pretty high return rate for a survey. My thanks to all who took the time to fill out the form and return it. The "total score" for each item was calculated, that score was entered into the table, and then the table was re-sorted by score in descending order. This put the item with the highest score at the top of the list. In the table below, the "#" column is the number the item had on the original survey sheet.

Total Score	#	Topic	Total Score	#	Topic
99	7	news of observing opportunities (comets, etc.)	69	8	observing challenges for advanced observers
94	3	a "question & answer" section, where you can submit questions on astronomical topics to be answered by the <i>Observations</i> panel of distinguished consultants	69	29	observing occultations
91	10	observing challenges for beginning observers	68	4	opinion pieces (president's message, members' opinions)
90	13	reports of members' experiences	68	38	Internet astronomy resources
88	30	observing planets	66	23	solar eclipse observing
87	12	reports of members' observations	65	18	telescope types and selection criteria
87	50	reports on other CCAS activities	63	22	solar observing
85	17	telescope observations	63	36	computer planetarium programs
85	24	lunar observing	62	34	current space exploration coverage
85	45	trip reports (star parties, eclipse trips, etc.)	61	21	telescope accessories (types, uses, tips)
85	48	reports on CCAS meetings	61	27	meteorites
83	15	naked eye observations	60	1	a "letters to the editor" section
83	39	the monthly sky (bright stars, constellations)	60	37	reports on computer programs for planning observing sessions
82	40	constellation articles (what to observe)	59	19	binocular types and selection criteria
80	16	binocular observations	58	44	astroimaging (with CCD devices)
79	25	lunar eclipse observing	56	2	answers to "letters to the editor"
79	31	observing deep-sky objects (objects outside the solar system)	55	6	Astronomical League news
78	9	observing challenges for intermediate observers	55	33	space exploration history
77	11	observing "projects" (like the Vesta project in the July 2000 <i>Observations</i>)	55	43	astrophotography (with camera)
77	49	reports on presentations at CCAS meetings	55	46	history of astronomy
75	51	how to attend a star party: what to take, what to leave, sleeping, eating, bathroom matters, telescope security, do's and don't's at a star party, what to do if it rains, etc.	52	41	observing earth-orbiting satellites
74	32	observing double stars	50	5	opinions a la "point/counterpoint"
73	26	observing meteors and meteor showers	50	42	cosmology
73	28	observing comets	45	20	building a telescope
72	14	whatever pleases the editor's whims that month	45	47	constellation history and mythology
70	35	dark-sky information (outdoor lighting)			

Write-ins:

- "Kids' Konstellations": education/material for children
- Recognition of new members by name
- Would like to see more members contribute to the newsletter
- Offer newsletter to elementary and middle schools
- Ed's observing calendar of events
- Recognition of members' awards or accomplishments
- Role of cats in astronomy and/or Galileo's cat

Where Have You Gone, Frank Angelini?

I was hoping to write a report on "What I Did Last Summer," from an astronomical observing perspective that is. But there is only one problem. I did absolutely nothing last summer from an astronomical observing perspective.

The poor weather was one reason. We had a really cloudy, wet summer. I was out once and that was the 4th of July, probably the most light-polluted night, next to the Christmas-lights season, in my neighborhood. It was almost a total waste of time. I packed up in disgust after about an hour of fighting the glare. But I can't blame it all on the weather. And yes, my wife is not presently working and we have another child, a double-whammy that means I work harder to earn the needed bucks. But that's no excuse either. So what's the problem?

We now purportedly live in the most prosperous economy in history. No more Iron Curtain or Cold War, lowest unemployment rates in memory, plenty of new technology to make our lives easier, etc., etc. But there is less free time available than ever. We're beating ourselves to death. Why is that? I submit it is because the accountants are running amok.

Everyone seems to be working longer hours than ever before. People are pushed to the limit as a result of "reengineering," "downsizing," or going "lean and mean," all euphemisms for layoffs in the name of short-term profits. Those left in middle management have taken pay cuts and picked up the duties of those who were laid off. When I began my career in engineering, upper management was composed of engineers. (In hindsight, all was right with the world.) Then as competition heated up, sales became the thing. "Marketing" was the catchphrase of the day, and MBA-types took control. Next came the rule of the lawyers, as government regulation threatened to put, among others, the heads of corporations in jail if they didn't straighten out their environmental and financial behaviors. And now, in the unending quest to squeeze the last drop of blood from the proverbial stone, the accountants have taken control, assisted ably by the "information technologists" who have applied every conceivable means of transmitting information to my workspace and home, including voice mail, email, fax machines and the Internet, to supplement the telephone, radio, TV and, sadly, the antiquated written word.

Our avocations are the first casualties. This past summer, when there was a clear night, there was no energy left to set up the telescope and do any observing. Fifty-hour workweeks will see to that. Maybe it's time to take a quality-of-life hit. Do something drastic and "downsize" the house for a less expensive one. They tell me there is a two-year waiting list for AP refractors, so maybe I should "Reengineer" my telescope equipment, i.e., keep the little scope and sell the bigger one. You know, go "lean and mean." Try anything in order not to drop out altogether from amateur astronomy, the hobby we know and love.

Has anybody seen Frank Angelini lately?

Mike Turco

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Telescopes and Members Needed: November 17

Deb Goldader is requesting telescopes and members to assist at the Public Open House at the Flower & Cook Observatory on Friday November 17, 2000. Two Girl Scout leaders are bringing their groups of Scouts (both groups are of fourth-grade age girls) to the FCO that night, and if it's clear Deb could really use the extra help! There will be a total of 17 Scouts, plus parents and siblings. Please let Deb know at the November meeting if you can make it.

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Thanks!

Deb Goldader asked me to publish this e-mail in the newsletter:

"A belated THANK YOU to everyone who helped with the Philadelphia Science and Space Club night at the FCO! **Steve Limeburner, Jim Anderson, Nicholas LaPara, and Ed Lurcott** – you guys were terrific!"

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Calendar Notes

- | | |
|--------------------------------|---|
| Dec. 4, 2000 | One night this week the CCAS will entertain a group of 3 rd graders and parents at the Shamona Elementary School in the Lionville area
Sunset |
| December 12, 2000
(Tuesday) | CCAS Meeting
Location: TBA
Topic: "Blue Stragglers Part 2"
by Dr. Rex Saffer, Villanova Univ.
7:30 p.m. EST |
| December 15, 2000
(Friday) | Free Public Open House at Flower & Cook Observatory in Malvern, PA
Topic: "Photo of the Millennium"
by Jeff Goldader
8:00 p.m. EST |
| Dec. 22/23, 2000:
(Friday) | CCAS Observing Session
Brandywine Valley Association
Sunset |
| December 25, 2000
(Monday) | Christmas!
Give a child a telescope or a star book!
Partial Solar Eclipse visible from our area! |
| January 1, 2001
(Monday) | Happy New Year!
Watch the film "2001!" |

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Observations Editorial Staff

Editor in Chief: James J. Anderson
Copy Editors: Donna G. Anderson
Edwin T. Lurcott

Contributing Members:

Kathy Buczynski, Deborah Goldader, Nicholas LaPara,
Doug Liberati, Michael A. Turco

November Skies

Moon Phases

First Quarter	11/04
Full Moon	11/11
Last Quarter	11/18
New Moon	11/25

The Planets

Mercury is in the morning sky in the middle half of November, and around November 15 it will be easier to see, as it will be rising about 90 minutes before the Sun (which rises at about 6:44 a.m. on November 14).

Venus is in the evening sky this month, rising higher above the Sun each day, and thus setting almost 3 hours after the Sun by month's end. It will be the first bright star you see after sunset.

Mars is a faint flicker in the east at daybreak during November. Wait until next June to look at Mars...

Jupiter is rising in the northeast in our evening skies this month, after Saturn, and close to Aldebaran. The trio make quite a sight, especially with the Hyades and Pleiades star clusters close by. As noted on page 1, both Saturn and Jupiter reach opposition in November (on 11/19 and on 11/28, respectively), meaning they are as big and as bright as they will get this year. Jupiter is a captivating sight in a telescope of any size!

Saturn is near Jupiter all month, making it easier to find, and not far from the Pleiades star cluster (the Seven Sisters). Saturn's rings are tilted open at about 24°, and its apparent size is now the largest it has been since 1976! Don't miss this show! It's one of the most sublimely beautiful sights in the galaxy!

Uranus and Neptune are still well placed for telescopic observations in this month's evening sky. They are in Capricornus, high in the southwest as the Sun sets.

Pluto is hopelessly lost in the Sun's glare this month.

The Leonids Meteor Shower: Nov. 17-18

This annual but variable meteor shower occurs in the early morning hours of November 17 and 18. One pair of experts is predicting a peak rate of about 100 meteors per hour, but the glare from the Last Quarter Moon will wash out fainter meteors. Facing toward the east will help you see more meteors. Another expert says that eastern North America could see a significantly heavier outburst on the morning of November 17, at around 2:53 a.m. EST. A third prediction agrees with the "burst" theory, but predicts it for November 17 at about 4:30 a.m. EST. Who ya gonna believe? Your own eyes, obviously. Get out there and look!



A.L. Observing Awards Updates

It has come to my attention that we failed to report some months back that member **Elise Furman** completed her Lunar Award, thus becoming the second certified lunatic in the CCAS. I am sorry that I missed reporting this important event when it occurred.

Frank Angelini reports that **Steve Limeburner's** logbook for the Honorary Messier award (that's the biggie, for all 110

Messier objects) passed muster. Frank sent the request off to the A.L. for the award, so now we just wait until we get that back from the A.L.

Ed Lurcott reports that the noted observing machine **Steve Limeburner** has submitted his logbook for the Lunar Award. It has passed review, and Ed has sent a request to the A.L. for the award.

Anyone else working on an A.L. observing award? Let *Observations* know how you're doing.

CCAS Messier Certificates:

Jim Anderson, Basic
Frank Angelini, Honorary
John Imburgia, Basic
Ed Lurcott, Honorary

CCAS Lunar Certificates:

Jim Anderson
Elise Furman

CCAS Double Star Certificates:

Jim Anderson
Steve Limeburner
Ed Lurcott
Mike Turco



Report on CCAS October Meeting

by Doug Liberati

The October meeting of the Chester County Astronomical Association (CCAS) was convened at approximately 7:30 PM on Tuesday, October 10th, 2000.

Officers in attendance were: President Mike Turco, Vice President Steve Limeburner, Secretary Doug Liberati, Observing Chair Ed Lurcott and Librarian William O'Hara.

The meeting was attended by approximately 15 people, including officers.

Mike opened the meeting with several remarks. First, he introduced our long-awaited Astronomy Day 1999 Honorable Mention Certificate, suitably framed.

Mike also gave us an update on a raft of equipment recently donated to CCAS. He has completed restoration work on the pier of the 8" equatorial Newtonian and is now working on restoring the motor drive, which is a Criterion Dynascope drive. CCAS was also recently gifted with a Celestron 4.5" Firstscope, another Newtonian, under specific condition that it be given to a young person. Several ideas were traded about how to best address this. The dominant theme was that the award of the telescope be tied to some type of educational event, such as an Introduction to Astronomy course offered by the club. The Education Committee is to consider this further. Finally, CCAS received an Orion Skyview mount on a tripod. It currently has tube rings to mount a 90mm optical tube. Mike is considering getting a dovetail plate to allow mounting of scopes such as the Televue Pronto.

Doug then presented the Secretary's report for the September "season opening" meeting of CCAS.

In other remarks, Mike showed a copy of a magazine called "Astrograph" which he had received. The magazine focuses on

astrophotography and has been around for about 31 years. Mike had it on hand for post-meeting review. Subscriptions are \$12.00 per year.

Peak time for sunspots is approaching and reference was made to a web page for more information on this topic. The exact address was unknown, but its author is Todd Gross, so a name search should bring it up. Also on this topic, someone inquired as to the best welder's glass to use for solar observing and number 14 was recommended, the other grades being insufficient for the intense solar glare. EXTREME caution is to be used in solar observing in any and all cases.

Steve provided a program report for the next few sessions:

- November - Roy and Elise Furman will present on Astronomical vacation sites
- December - Dr. Saffer will update us with his latest work on blue stragglers. These are blue giant stars that exist in otherwise ancient globular clusters that should have lost their blue giants long ago. After December, the schedule is wide open. Those wishing to suggest, or present, a program should contact Steve, the program chair.

Ed presented an observing report, along with a one page document updating us on events requiring the CCAS' assistance. Ed also updated us on the status of the club's 20" Dobsonian telescope. Due to some difficulty bringing some eyepieces to focus, the truss tubes of the scope have been shortened by 1/4". This has resolved the problem.

Presentation - Doug presented an overview of Cartes du Ciel, a freeware software package for creating and printing sky charts, developed in France. The package is available at no charge at <http://www.astrosurf.com/astroc/cartes/>. A discussion was encouraged with others who have used commercial astronomy or observatory software so that the features offered by this free package could be better judged.

The meeting adjourned at approximately 9:00 PM.



Beginning Astronomy Educational Program

by Kathy Buczynski

The Education Committee met on November 1 to discuss the idea of running a regular "beginners' astronomy program."

Below is the summary of what was discussed:

Objective: The attendees of the training sessions will

Understand:

- the motion of the Earth;
- the Earth/Moon and Sun system, including the seasons;
- the Solar System and beyond;

Identify:

- Constellations;
- Bright Stars;
- Directions (North/South/East/West);

Know how to:

- Read a star chart;
- Select a telescope or binoculars.

Sessions: The original discussion of "ongoing" was replaced by a set length of 8 sessions to start (Feb 6 to May 22, every first and third Tuesday). The room can remain scheduled if we decide to make this a continuous process. Can be discussed after sessions begin.

Cost: \$15.00 per person, \$25.00 per family, first session free. This includes parking, handouts per session, membership into the regular club, "Observations", observing sessions at BVA and Flower and Cook, and a star locator (planisphere).

Ages: 9 - 90. (The thought is that someone younger than 4th grade may not have the attention span for an hour's worth of astronomy.)

Advertising: A press release and a flyer is needed. This will more than likely be the topic of our next meeting. Once the flyer is done, distribution is key. Below are the places we thought to distribute it along with some other avenues:

- local newspapers;
- WCOJ;
- Flower and Cook;
- Bulletin boards including your place of business and supermarkets;
- Boy/Girl Scout troops;
- other clubs;
- prior members;
- neighborhoods;
- Science stores;
- BVA;
- YMCAs.

Curriculum: It was suggested that each night we give the group an observing challenge, something like find Orion in the sky. Also, it was suggested to do a longer term observing exercise to determine the change in direction of a sunset from February to May. Instructors are yet to be determined.

Session 1:

- Orientation/Introduction
- Slide show of upcoming events
- Current Sky (to get some excitement going)
- Observing challenge

Session 2:

- Spaceship Earth
- Seasonal changes
- Observing challenge

Session 3:

- Earth/Moon/Sun System
- Eclipses
- Observing challenge

Session 4:

- Solar System
- Naked-eye planets
- Observing challenge

Session 5:

- Planetarium Field Trip, WCU (if available)
- Observing challenge

Session 6:

- Stars
- Life of a star
- Characteristics of a star
- Bright stars/constellations

Observing challenge

Session 7:

Constellations
Observing challenge

Session 8:

Telescopes
Binoculars
Observing challenge

Our next meeting will again be at my house on Tuesday, November 7, 2000, at 7:00. But please don't forget to vote before you come.

Kathy

Call if you need directions, 610-436-0821.

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Help Needed: Positions Still Available!

I would like to thank **Ed Lurcott** and **Donna Anderson** for indicating that they will continue to help me with the newsletter as they have in the past. I would also like to thank **Doug Liberati** for offering to send me the meeting minutes on a regular basis, so that we can publish what happened at the meetings for those who could not be present.

I would also like some help with the newsletter on a regular basis. A reporter or two (or three or more), who could attend events and submit brief reports for publication in the newsletter, would be nice. Preferably this person (or persons) would have a computer and Internet access so they can submit articles electronically, to make it easier to include the report in the newsletter. That is NOT, however, a requirement. Reports can be typed or handwritten; the important thing is to get the information to me for inclusion in the newsletter. A report would consist of a description of the event, what happened, and who was there.

Contributing photographers would also be like reporters, but would take pictures at events and submit those for publication. These would not necessarily be astrophotographs, although those are nice to have too. Photos of meetings, observing sessions, educational events, and the like are the kind of photos I'm primarily thinking of here. Include members and/or visitors in the photos when possible. Snapshots are fine; you can submit photos in "hard-copy" format and I can scan them into my computer for inclusion in the newsletter (that's the easy part, really). You would of course also have to tell me what the photo shows, when it was taken, who is in it, etc.

Last but not least, you may have noticed that on the "newsletter content survey results," there were several "informational type" topics that ranked rather high with our members. Someone (or someones) could offer to research (if needed) and write an article or series of articles on these topics. If done as a regular series, it would not have to be every month: it could be done as an installment every second or third month, or as you get parts finished. As the newsletter has gotten more sophisticated, it is taking more of my time each month just to compose it from the many pieces I receive. That means I have less time available to research and write articles myself, which is why I need more help in that area. Thanks for taking the time to read this; if you can help please let me know.

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Observer's Handbook 2001: Save Money!

By Jim Anderson

I received a total of 7 requests for this book, in response to the note I placed in last month's *Observations*. This means we have enough orders to get the \$13.50 per copy reduced price for bulk orders. I ordered 10 copies, so we will have an extra 3 copies available at \$13.50 each.

The *Observer's Handbook* is a very valuable reference tool published each year by the Royal Astronomical Society of Canada. As the information and data presented really covers just about all of North America, it is just as valuable here in Chester County as it is in Toronto. This book contains many sections of information. One section is a two-page calendar-type synopsis of the astronomical events visible that month. Full articles, complete with path & totality maps, are published for every solar and lunar eclipse that occurs in the covered year (regardless of where it is visible!). There are sections on each planet, with planetary satellite tracking data, an asteroid section, and an occultation section that covers all occultations visible that year from North America. And that's not all, but I'm not going to list everything.

Contact me at 610-380-4512 to reserve one of the three available copies.

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Book Update Available from Jim Mullaney

CCAS Friend Jim Mullaney has published the second edition of his book *Celestial Harvest – 300 Plus Showpieces of the Heavens for Telescope Viewing and Contemplation*. There are several new entries, and some new "Thoughts for Contemplation." Anyone who purchased the first edition (1998) can receive complimentary updated entries from Jim directly. Just send a self-addressed envelope (66 cents postage for the 9 pages) to:

James Mullaney
P.O. Box 1146
Exton, PA 19341

His e-mail is: jimmullaneymsn@msn.com

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Newsletter Deadlines

These are the deadlines for submitting material for publication in the newsletter, through the June 2001 issue.

<u>Issue</u>	<u>Deadline</u>
December 2000	11/28/2000
January 2001	12/28/2000
February 2001	01/29/2001
March 2001	02/26/2001
April 2001	03/27/2001
May 2001	04/26/2001
June 2001	05/28/2001

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"Stars are the golden fruit of a tree beyond reach."

George Eliot (1819 – 1880)

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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 the editor at skywalker56@earthlink.net

Or mail the contribution, typed or handwritten, to:

Jim Anderson
19 Bluff Road
Thorndale, PA 19372-1104

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:

skywalker56@earthlink.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): Frank Angelini
(610-873-7929)

Lunar: Ed Lurcott
(610-436-0387)

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

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

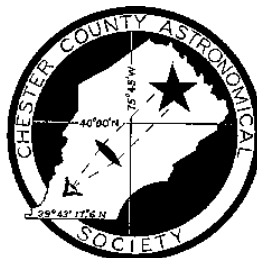
Treasurer: Pete LaFrance
(610) 268-2616

Secretary: Doug Liberati
(610) 827-2149

ALCor and Newsletter: Jim Anderson
(610) 380-4512

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

Observing: Ed Lurcott
(610) 436-0387



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

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

