OBSERVATIONS

A MONTHLY PUBLICATION OF THE

Chester County Astronomical Society

★*President:* Mike Turco ★*Vice President:* Steve Limeburner

★*Treasurer:* Pete LaFrance ★*Secretary:* Doug Liberati

MARCH 2000

(VOLUME 8, NO. 3)

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

Saturday Afternoon at the CCAS Telescope Works

February 26, 2000

At left, Ed Lurcott and Mike Turco work on the ground board of the Telekit for the CCAS 20" telescope, being built around the mirror donated to the Society by the University of Pennsylvania. Behind Ed you can see the main rocker box that holds the mirror. The spoked half-circles are the altitude bearings, on which the telescope will pivot up and down.

In the photo below, Mike is unpacking the roller bearings that fit into the ground board. It is on these that the telescope will pivot "left to right", or in azimuth. Again you can see the main rocker box. To the right of that, you can see what looks like a black rectangle with tan (light-colored varnished wood) "trimmings". That is the upper cage assembly of the telescope, already largely finished: only the optics remain to be installed in that part. The upper cage assembly holds the eyepiece focuser (not seen in this photo), which can accommodate both 2" and 1.25" diameter eyepieces. Inside the cage is an ingenious holder for filters (both color and light-pollution blocking): simply turn a knob to move a different filter into place. The light blue tube, in the vertical position, to the right of the cage is the 8" reflector donated to the CCAS by Kathy Miles; it is in the Telescope Works for disassembly and cleaning. And just to the right of that, you can see an aluminum tube with black fittings, also upright: Ed Lurcott's venerable 6" portable reflector.

Mike, Ed and I had a pleasant afternoon working and chatting, and at about 3:00 Mrs. Lurcott provided a tasty snack break.

Photos & text by Jim Anderson, *Observations* Staff Photographer

The next work session will be on Sunday, March 12, 2000 at Ed Lurcott's home. If you think telescope building is too technical for you, or that because you're not an expert carpenter you'd wreck something, think again. This is a kit; all the difficult design work, and cutting of parts, is already done. 80-90% of the remaining work is sanding the wood parts, to get them ready for varnishing. So if you can hold a piece of sandpaper, come on out and join the gang.

CCAS TO HOLD 3rd ANNUAL MESSIER MARATHON
SATURDAY/SUNDAY APRIL 1 / 2 , 2000

Charles Messier

Well it's that time of year again, and you know what that means. It's time to plan **The CCAS Third Annual Messier Marathon**, and the first of the new millenium. With many new members and several new shiny scopes and binoculars, I believe it could be a real hoot! With a little luck, it is not difficult to bag 50, 60, 70 or even more objects in one night's outing. Ask our Messier veterans like **John Inburgia, Mike Turco** or **Steve Limeburner**, these outings can be lots of fun. And of course our own Astronomer Royal, Mr. Ed Lurcott will no doubt be there with suggestions and donuts for all. This year's primary weekend is Saturday/Sunday, April 1st and 2nd. We have found that the Saturday/Sunday routine to work out better than Friday/Saturday because you need to get to the BVA well before sunset to capture those "M" objects low in the western horizon. Once you have those, you can relax for a while. The sun sets at approximately 6:28 PM EST on Saturday, April 1, 2000 and rises at 6:45 AM EDT Sunday, April 2, 2000. (**Don't forget to set your clocks ahead 1 hour**). Also, the waning crescent moon doesn't rise until about 5:59 AM Sunday morning and will not be an issue during your observations this year. I'll have lots of material for you to pick up at the March meeting, and hopefully all of your Messier questions will be answered.

Many of you know all about Charles Messier and the 100 plus objects that bear his monogram. However, for those of you who are new to this hobby, here is a brief summary. It is a list of objects "discovered" or compiled by the French astronomer Charles Messier in the 1700's. Messier worked hard to discover comets, and he compiled this list so he could avoid mistaking the objects for comets.

What is a Messier Marathon? Fanatical observers love a challenge, and the Messier Marathon is quite popular today. Amateur astronomers challenge their abilities by finding all the Messier objects in one night. The Marathon is generally held during March, on the weekend that is closest to the equinox. During this night it is theoretically possible to see all of the objects on Charles Messier's list. One obvious problem with this is that the Moon may interfere with the night in question. It so happens that the Moon is in a favorable position once every three years. There is another night to see many of the Messier objects that is close to fall equinox, but a different object order must be used. It is imperative that your observing site have good horizons in all directions. If your horizon view is blocked to the East, for example, you will not find the early morning objects at the end of the list.

Dress properly!!! During the marathon most observers will need heavy, cold weather observing clothes. The most important item for keeping warm, which is often overlooked by those who do not observe in cold weather, is a hat. Much body heat is lost through the head, where blood vessels are close to the surface. Wearing a hat can keep your hands and feet from freezing! Layering is the secret to keeping warm. Wear long underwear under your pants, try using overalls such as are used for skiing or snowmobiling. Plan to set up before the sun goes down. Your observing site should be available before sunset. If you must set up all your equipment, try to arrive one hour before sunset. Have all charts & observing aids handy at the start. Make sure you have a place to sit during the night because your body will complain if you do not. Also have some hot liquids to drink (coffee is not really recommended because the caffeine in it tends to narrow the blood vessels, causing one to feel even colder) and something to eat will help you make it through the night.

The Marathon begins as soon as it is possible to see the guide stars for the first objects. As darkness begins to prevail over twilight, the first objects must be hunted quickly. Do not linger over them, as they will be difficult to find and see at best. Once the first objects are located, you may then begin to work at a slower pace. The first part of the session will end in the Virgo cluster of galaxies. They will challenge even the hardiest of observers. After the Virgo cluster is complete, some time around 1 AM, you may then take the one nice long break of the night. You should start back on the search by 2:30 AM, in order to find all the objects left on the list. If you get hung up on any of the remaining objects, remember that they are rising. Don't waste time becoming stranded on one of these, continue with the next objects and come back to the one that tripped you up later. Practice makes Perfect This advice will help you through all aspects of the Messier Marathon. Unless you use a computer-controlled telescope, it is doubtful that you will succeed to see all 110 objects the first year you try it. **Remember, if you plan on applying these observations toward an Astronomical League award, computer control and digital setting circles are not allowed.** However, last year we observed 79 objects using my 10 inch LX-200, and we sort of bent the rules. We would GOTO to a nearby guide star and then manually direct the scope to the M object.

Although an experienced observer can do the marathon on the first try, most of us will probably need more than one Marathon to make it happen. In addition, you can practice for the Marathon all year long! The Virgo cluster of galaxies is probably going to be the stumbling block for many observers. The galaxies are well placed for observing just before marathon time--if you can stay up after midnight to see them, practice for a few weeks ahead of time. If they trip you up on your marathon, spend the next weeks getting familiar with them. This way, when the Marathon comes around again, you will be ready for them! If you would like to finish the Marathon, but find yourself lost in the Virgo cluster, you should probably just poke around up there and resolve to spend some time learning to identify them. If you are blessed with setting circles and know how to use them, there's no reason why the cluster should defeat you. If possible, practice looking for those objects that appear first and last on the list of objects--M30, M72, M73, M74, M77, M76. These objects will be elusive and may not actually be visible from your site.

Frank J. Angelini

January, 2000

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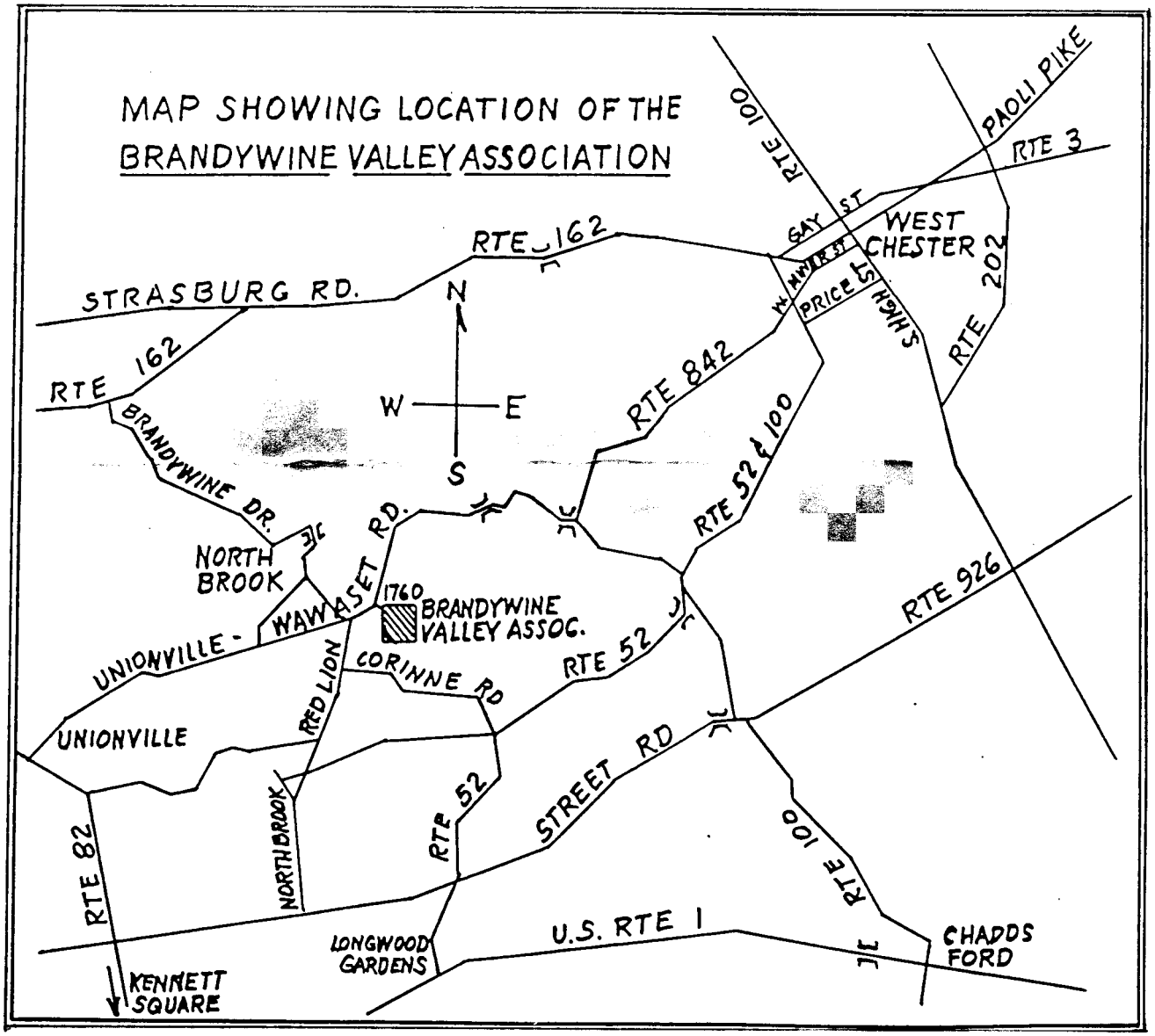

CCAS March Meeting

DATE:	**Tuesday March 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)

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.

This month we will have an illustrated presentation entitled "The Art and Science of Early Star Atlases", by Ray Harris, Treasurer of the Lehigh Valley Amateur Astronomical Society. This presentation will cover the evolution of printed star atlases from the invention of the printing press in the 1400's until about 1801. After this date, art and science diverged. We'll be ejoying the art and examining the scientific content of these early alases as we go. This includes coverage of the advances in cartography and in knowledge of the heavens, including the charting of "nebulae" - the term once used for all non-stellar objects.

Our guest speaker, Ray Harris, is a graduate of Yale University, and a former Nuclear Submarine Officer in the U.S. Navy. Mr. Harris has worked for PP&L for 20 years in support of their Susquehanna nuclear station. He currently manages software projects, although his degree was in biology. He got into astronomy in a serious way about 16 years ago at age 34. Since then he has enjoyed visual observing, meteorites, astrophotography, and most especially antique star atlases. He has conducted research in star atlases here in the U.S. and in Europe, and has published two articles on the subject. He has had photos published in *Sky & Telescope*, and teaches courses in astrophotography and meteorites in the LVAAS. His proudest accomplishment is the erection of a Planet Walk in Allentown's Little Lehigh Parkway. It's a memorial to a former LVAAS member, and is a scale model of the Solar System that stretches 3700 feet. PP&L is now developing two copies of this Planet Walk: one at their Susquehanna Riverland Preserve, and another at their Montour Preserve. These two Planet Walks are expected to open to the public later this year.

This should be a enjoyable talk on a fascinating subject. Don't miss it! Bring your friends.

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CCAS Observing Session

There is a CCAS Observing Session on Friday March 3, 2000 (cloud date is Saturday March 4). Unfortunately, you will not get this newsletter before then. March's Session was listed in the "Calendar Notes" in last month's newsletter, so I hope you all marked your calendars then. The next Observing Session is scheduled for Friday March 31 (cloud date is Saturday April 1). The Observing Sessions start at about 6:00 p.m. or earlier, if you can get there earlier to set up before darkness falls. At the observing sessions, there is 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.

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Public Open House: F & C Observatory

There will be a **FREE** public open house program at the University of Pennsylvania's Flower & Cook Observatory in Malvern, PA on Friday March 31, 2000. The program starts at **8:00** p.m. EST with a talk on "How the Sun Works" by Dr. Simon Dicker of the University of Pennsylvania. If the skies are clear, there will be observing with the Observatory's telescopes. Children are of course welcome as long as they are accompanied by an adult. The Observatory is located on Providence Road, just west of the intersection with Warren Avenue. A map is included on a later page.

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National Astronomy Day: April 8, 2000

This event is now less than 6 weeks away!

We need to start planning what we will do to promote the hobby and science of astronomy that day. Last year, the CCAS won an Honorable Mention award in a nationwide contest for NAD events, a contest sponsored by the Astronomical League and *Sky & Telescope* magazine. Please turn out for the March meeting where we will discuss and plan our NAD activities. This is our biggest "outreach" activity of the year and we need everyone's ideas and help. Thanks in advance for your assistance.

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March Skies

Moon Phases

New Moon	03/06
First Quarter	03/13
Full Moon	03/19
Last Quarter	03/27

The Planets

Mercury is low in the morning sky in March. On March 15 and 16, Mercury will be just a bit over 2° above much brighter Venus: you should be able to get them both in one field of view with binoculars. They will be low in the sky though.

Venus is in the morning sky this month, rising less than an hour before the Sun.

Mars is low in the southwest at susnset. It's now very far away from us, so even a telescope won't improve much on the naked-eye view. But that view will become more impressive as we go through March! Mars, Jupiter and Saturn will be moving closer together in the evening sky all month. On the 1st, Mars will be about 19° away from Juipter; closing to only 3° on the 31st! Jupiter and Mars will be even closer together on April 6.

Jupiter is the brightest "star" in our evening skies this month, and very easy to find. Jupiter is always a grand sight in a telescope of any size! On March 22 Jupiter will be in the middle between Mars and Saturn, with Mars about 7.5° west of Jupiter ("below") and Saturn about 7.5° east of Jupiter ("above"). This will be an outstanding naked-eye lineup of these three planets: t. So just go out and savor the sight!

Saturn is about 10° behind (east of) Jupiter on the first of March, closing to about 6° away from Jupiter on March 31. The ring system is of course a marvelous sight to behold in a telescope.

Uranus and Neptune are in the morning sky in March, not far from much-brighter Venus, but very tough to find.

Pluto is high in the south as dawn breaks, but finding Pluto requires at least a 10" telescope, dark skies, good charts, and lots of patience.

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Vernal Equinox: Monday March 20, 2000

The Vernal Equinox (the "first day of Spring" in the Northern Hemisphere) occurs on Monday March 20 at 2:35 a.m. EST. That is the moment the Sun crosses the celestial equator into the Northern Hemisphere of our sky here on Earth. Interestingly, Full Moon occurs almost exactly 3 hours before that, at 11:34 p.m. EST on Sunday March 19. There's no special significance to that; it was just a coincidence that caught my eye while I was looking at the month's celestial events.

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Calendar Notes

March 31/April 1, 2000: (Friday)	CCAS Observing Session Brandywine Valley Association
April 7, 2000 (Friday)	Star Night at Flower & Cook Observatory in Malvern, PA for 2 Girl Scout troops 7:00 p.m. EDT
April 8, 2000 (Saturday)	**National Astronomy Day**
April 11, 2000 (Tuesday)	CCAS Meeting Topic: TBA 7:30 p.m. EDT
April 14, 2000 (Friday)	Star Night at Flower & Cook Observatory in Malvern, PA for a Cub Scout den 7:00 p.m. EDT
April 28, 2000 (Friday)	Free Public Open House at Flower & Cook Observatory in Malvern, PA Topic: "The Tenth Birthday of the Hubble Space Telescope", by Dr. Jeff Goldader (UPenn) 8:00 p.m. EDT
May 5/6, 2000: (Friday)	CCAS Observing Session Brandywine Valley Association
May 9, 2000 (Tuesday)	CCAS Meeting Topic: TBA 7:30 p.m. EDT
September 1-4, 2000 Labor Day Weekend	2nd Annual Black Forest Star Party Cherry Springs State Park, PA

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Telescopes and Members Needed!

Due to Deb Goldader's broken wrist, there will not be any star nights for Brownie or Cub Scout groups in March at the Flower & Cook Observatory.

There **is** a star night for 2 troops of Girl Scouts (a Brownie Troop and a Junior Troop) on Friday April 7 at 7:00 p.m. EDT.

There is also a star night for a den of Cub Scouts (7 3rd graders) of Cub Scout Pack 7 on Friday April 14 (rescheduled from 2/11) at 7:00 p.m. EDT.

We could use some help from CCAS members, with or without telescopes, to assist with this event. Those without telescopes can assist with pointing out stars, planets, and constellations. These events are always fun and fulfilling, because many of these children will be looking through telescopes for the first time. Remember the first time you saw Jupiter or Saturn through a good telescope? Share the magic!

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"Thank you" from Ed Lurcott

Ed Lurcott sends a "thank you" to everyone who sent him cards and/or called during his recent illness. He really appreciated all the kind thoughts and prayers. He is now "as close to normal as I ever get" and expects to be as fully active as ever.

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Telescopes and Members Needed

We need members, with or without telescopes to help with some upcoming star nights. On Tuesday March 21, setup begins at 6:00 p.m. EST at Penn-London Elementary School in southern Chester County. Take PA Route 796 South from the interchange with US Route 1. Go about 1.8 miles and the school is on the left side of the road. Let Observing Chair Ed Lurcott know if you can assist with this (610-436-0387).

Mark your calendars for Tuesday June 6 for our Third Annual Star Night at East Goshen Township Park. This event will start at about 8:00 p.m. EDT. The rain date will be the next day, Wednesday June 7. We will set up on the soccer field(s) as we have in years past.

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CCAS Newsletters Now Available via E-mail

With this issue of *Observations* we are announcing a new service for members. You can now receive the monthly newsletter by e-mail. When the newsletter is finished, I convert it to a special type of file (a .pdf, for Portable Document Format) using a utility called Adobe Acrobat. Then all you need on your PC, besides an Internet connection with e-mail, is the Adobe Acrobat Reader program for your PC or Mac. This program is available free of charge from Adobe. Just connect to their Website at www.adobe.com and follow the links and directions for downloading and installing the correct Reader program for your PC or Mac. On the main screen (home page) of Adobe, at the top look for a "button" labeled "Products" and click it. On the next screen, scroll down to where it says "Adobe Acrobat Reader", and click that. Then click on "Download Now". Make sure the version number of the Reader you get is at least 4.0 because I'm using Adobe Acrobat version 4.0 to make the .pdf files. If you have an earlier version of the Reader, like 3.0, you'll have problems reading the files I make with Acrobat 4.0. The 4.0 Reader, however, can read 3.0 files without a problem, so if you're currently using a 3.0 Reader you will still be able to read older files produced by Acrobat 3.0 if you upgrade your Reader to 4.0.

Once you've done that, then just send me an e-mail to let me know you want to switch to e-mail delivery of the newsletter. The biggest advantage of getting your newsletter this way is you get it two to three days earlier. Another of the advantages of getting the newsletter this way is that the photos and/or drawings that are color in the original will be in color in your copy of the newsletter. When we make the paper copies for mailing, they get copied in black & white, and sometimes the copy quality of pictures is not good. Another advantage is that getting your newsletter by e-mail will save the Society money in copying and mailing expenses. In the past year some issues have cost the Society $75.00 and more in copying and mailing costs. So if you want your newsletter by e-mail, send me an e-mail at sny114@aol.com and I'll get you set up on the e-mail distribution list.

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News from Neighboring Societies

[Editor's Note: All that is required to have notices published here is to include Jim Anderson on the mailing list of your society's newsletter. See below for Jim's address.]

From *Focus*, the newsletter of the Delaware Astronomical Society:

Upcoming Meeting Topics and speakers:

March 21, 2000 (Tuesday) 8:00 p.m. EST	"What Makes Color?" by Bob Mentzer
April 18, 2000 (Tuesday) 8:00 p.m. EDT	"Cosmology's Embarassments" by Billie Westergard
May 16, 2000 (Tuesday)	Annual Dinner Meeting "The Art & Science of Early Star Atlases" by Ray Harris, Treasurer of Lehigh Valley Amateur Astronomy Society
June 20, 2000 (Tuesday) 8:00 p.m. EDT	"Variable Stars" by Dr. Judi Provencal, MCAO Resident Astronomer

DAS meetings are held at the Mount Cuba Observatory in Greenville, Delaware, just to the north of Wilmington. For more info contact President Warren Jacobs (610-566-0510). Or check their Website at:
http://www.physics.udel.edu/

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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 **jim.anderson@hboc.com**. Or mail the contribution, typed or handwritten, to:

Jim Anderson
19 Bluff Road
Thorndale, PA 19372-1104

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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.

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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 four 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 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 (note that this has just increased, as of October 1999),** 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.

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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

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

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

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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

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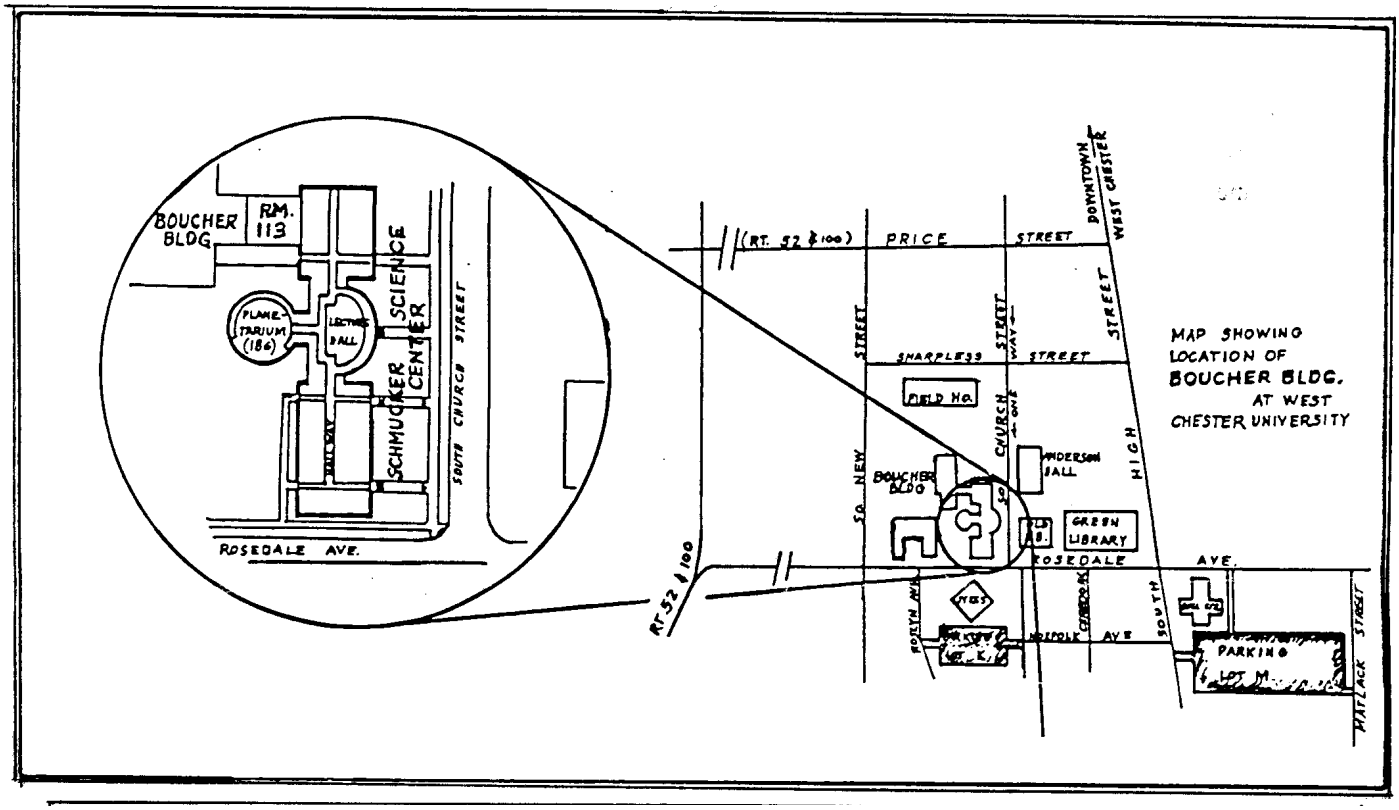
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SCIENCE CENTER
SCHMUCKER
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SO. NEW STREET
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BOUCHER BLDG
SO.
ANDERSON HALL
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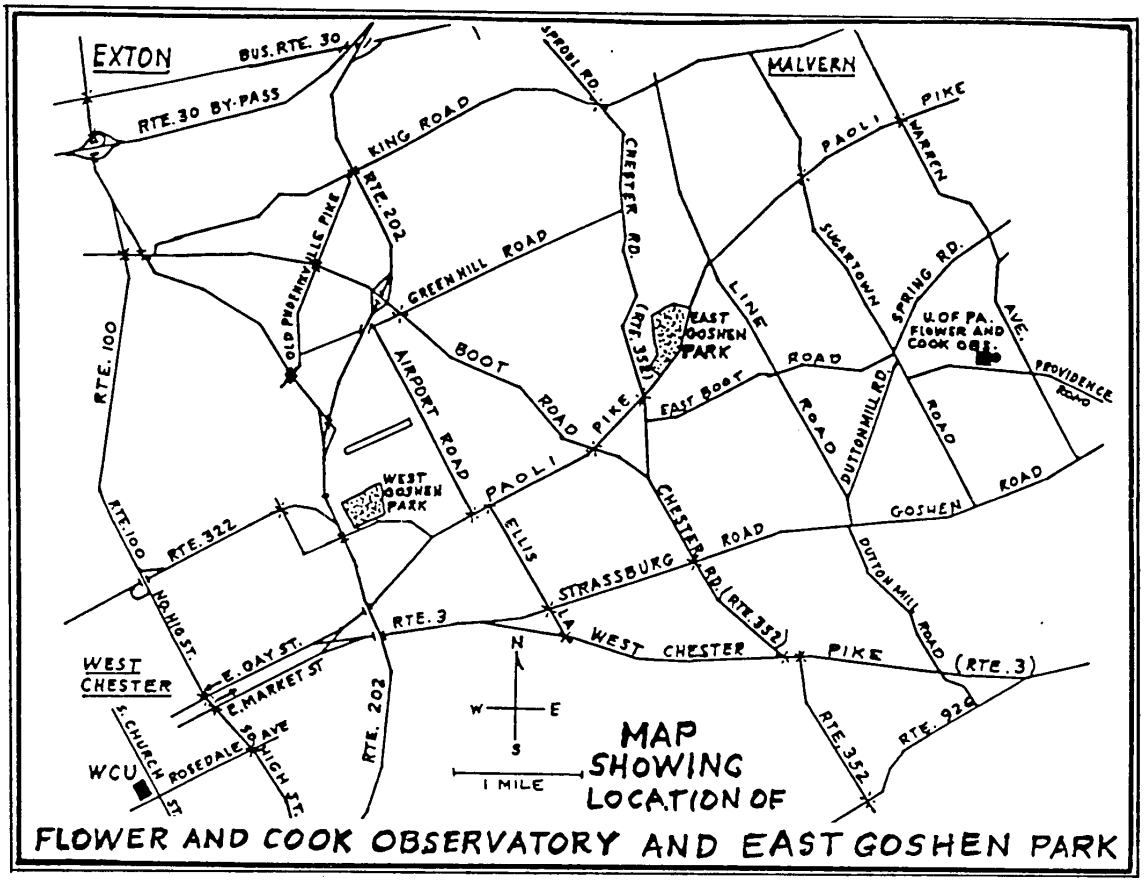
HATLACK STREET
MAP SHOWING LOCATION OF BOUCHER BLDG. AT WEST CHESTER UNIVERSITY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OLD PHOENIXVILLE PIKE
GREENHILL ROAD
RTE. 100
AIRPORT ROAD
BOOT ROAD
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CHESTER RD.
EAST GOSHEN PARK
WEST GOSHEN PARK
PAOLI
ELLIS
LINE
MALVERN
PAOLI PIKE
WARREN
SUGARTOWN
SPRING RD.
U. OF PA. FLOWER AND COOK OBS.
AVE.
PROVIDENCE ROAD
EAST BOOT ROAD
DUTTON MILL RD.
GOSHEN ROAD
CHESTER ROAD
STRASSBURG
RTE. 322
RTE. 3
WEST CHESTER
PIKE
(RTE. 3)
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RTE. 926
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FLOWER AND COOK OBSERVATORY AND EAST GOSHEN PARK