bservations

2006 Winner of the Astronomical League's
Mabel Sterns Best Newsletter Award

A Monthly Publication Of The
CHESTER COUNTY ASTRONOMICAL SOCIETY

APRIL 2007
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Visit our website at www.ccas.us

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Important April 2007 Dates

2 Full Moon—the Milk Moon.

3 **Introductory Astronomy class** meets at West Chester University. Class starts at 7:00 p.m. EDT. Topic: *Astronomy on the Web*.

See page 4 for details.

10 Last Quarter Moon.

10 **CCAS Meeting 7:30 p.m.** EDT
Location: West Chester University
Constellation of the Month: Canis Major

Main Presentation: "CCD Astronomy Imaging Adventure in the Southwest."
See page 4 for details.

13/14 **CCAS Observing Session**
Location: Brandywine Valley Association

Time: sunset, or earlier (see page 4)

17 New Moon.

17 **Introductory Astronomy class** meets at West Chester University. Class starts at 7:00 p.m. EDT. Topic: *The Secret Life of Stars*.

See page 4 for details.

19 Venus, the Moon, and the Pleiades line up in the evening sky.

21 **International Astronomy Day,** see page 4 for details.

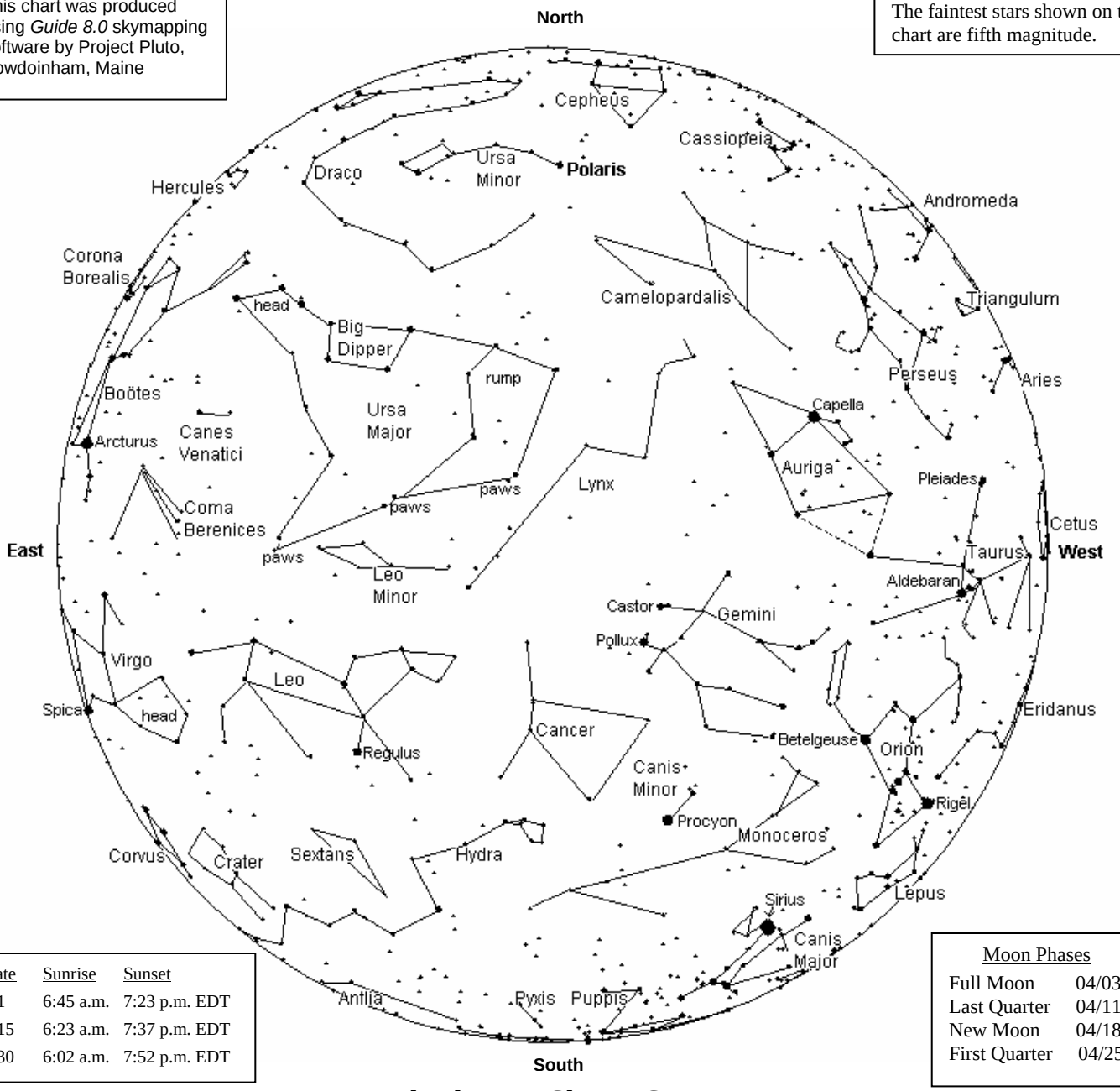
22 Lyrid Meteor Shower peaks.

24 First Quarter Moon is at 2:36 a.m. EDT.

★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★

This chart was produced using *Guide 8.0* skymapping software by Project Pluto, Bowdoinham, Maine

The faintest stars shown on this chart are fifth magnitude.



Date	Sunrise	Sunset
4/1	6:45 a.m.	7:23 p.m. EDT
4/15	6:23 a.m.	7:37 p.m. EDT
4/30	6:02 a.m.	7:52 p.m. EDT

Moon Phases	
Full Moon	04/03
Last Quarter	04/11
New Moon	04/18
First Quarter	04/25

The sky over Chester County

April 15, 2007 at 8:00 p.m. EDT

The Planets, by Don Knabb

Mercury: Mercury is not well placed for viewing during April.

Venus: Venus is nearly 40º high at sunset and outshines everything in the night sky except the Moon. It stays up for about two hours after sunset. On April 11 it passes about 2º to the lower left of the Pleiades and on April 19 we have a great line up of Venus, a thin crescent Moon and the Pleiades. Don't miss the show!

Mars: Mars is a dim speck low in the glow of the sunrise. Wait until later in the summer to enjoy the Red Planet.

Jupiter: By the end of April Jupiter is rising around 11:00 p.m. But, for the next couple of months the best view of Jupiter is in the morning sky.

Saturn: Take a look at the ringed beauty this month! The jewel of the solar system is very high in the south at nightfall. The rings are tipped approximately 15º from edgewise and they are starting to close. We won't see them this open again for five years.

Uranus: Uranus is very low and dim in the morning twilight and is therefore not well positioned for viewing during April.

Neptune: Neptune, like Uranus, is low and dim in the morning twilight.

Pluto: Pluto is not far from Jupiter in the early morning skies, but is a tough target for Chester County skies since it is one three-millionth as bright as Jupiter.

Note: the constellation stick figures used on the chart above were adapted from the book *The Stars: A New Way to See Them*, by H. A. Rey. This excellent guide to learning the constellations can be purchased at many area book stores, or from online booksellers.

April Observing Highlights

by Don Knabb, CCAS Observing Chair

Planets: Saturn and Venus continue as the main show in the evening skies. Saturn is high in the south as night falls and Venus is shining bright in the southwest. Wow, that is one bright planet! And now that we are getting up in the morning twilight thanks to Daylight Savings Time you can once again see the king of the planets, Jupiter, as you pick up the morning paper.

Constellations: We say goodnight to the winter constellations as April progresses. But the spring constellations are here to enjoy and if you are up late you will even see the Summer Triangle peaking over the eastern horizon. In the east we can have bright Arcturus in Bootes, followed by Corona Borealis the Northern Crown. If you are up a bit later you will see Hercules rising. Leo the Lion is at center stage and Ursa Major is high overhead.

Deep sky: Catch the Orion Nebula, M42, before it dives below the horizon. If you have a telescope, zoom in to see the four stars of the Trapezium in Orion's sword. The globular cluster M5 is rising below Corona Borealis and don't forget the galaxies M81 and M82 high overhead in Ursa Major.

Meteor shower: The Lyrid meteor shower peaks on the evening of April 22 when the sun is still up. But you should still be able to see up to 10 meteors per hour under dark skies later that night.

Apr. 2	Full Moon, the Milk Moon, 1:15 p.m.
Apr. 10	Last quarter Moon, 2:04 p.m.
Apr. 17	New Moon, 7:36 a.m.
Apr. 19	Venus, the Moon and the Pleiades line up in the evening sky.
Apr. 22	The Lyrid meteors peak.
Apr. 24	First quarter Moon, 2:36 a.m.

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Through the Eyepiece: M81 and M82

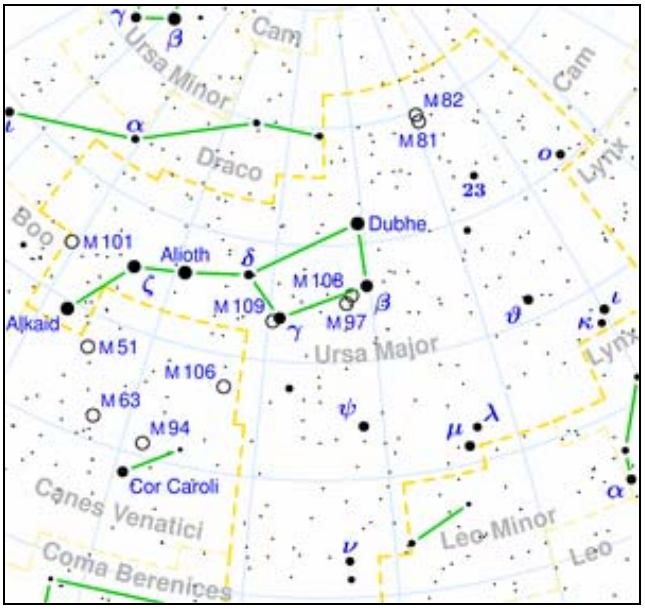
Bode's Galaxy and The Cigar Galaxy

by Don Knabb, CCAS Observing Chair

M81 and M82 are perhaps the most famous pair of galaxies in the northern skies. They can be seen in one field of view if you use low power. Both galaxies are thought to be spiral galaxies but we see them from different points of view so that M81 is the classic spiral while we see M82 edge on, which gives it that "Cigar Galaxy" name.

Now is a great time of year to see this pair of galaxies. About half way between the zenith and the North Star, below and to the left of the Big Dipper you can find these "smudges" in binoculars in dark skies. Better yet, use a telescope with a lower power (wide field) eyepiece and you will be able to see the different shapes of the galaxies. My 2000mm focal length LX-90 with a 32mm eyepiece (62X) is just right to see both galaxies in one field of view.

Using the chart below you should be able to find M81 and M82 fairly high in the sky at this time of year.



http://en.wikipedia.org/wiki/Ursa_Major

M82 is considered to be one of the prettiest spirals in the sky.

http://en.wikipedia.org/wiki/M81

M82 is called a starburst galaxy. A recent—a few hundred million years is considered recent in astronomical time scales—close encounter with M81 deformed M82 and caused star formation to increase 10 fold compared to normal galaxies. At this time the centers of M81 and M82 are estimated to be 130,000 light years apart. The galaxies are approximately 12 million light years distant from us

Recently over 100 freshly formed globular clusters have been discovered in M82 using the Hubble Space Telescope. Their formation is also thought to be due to the encounter with M81.

Although this photograph was taken in Southern California, this is a good approximation of how M81 looks to me when we gather at Brandywine Valley

Association for our monthly observing session (next page):

Photo: Brent Crabb

Please join us on April 13 at the Brandywine Valley Association and we can see these two highlights of the sky "live"!

Information credits:

Pasachoff, Jay M. 2000. *A Field Guide to the Stars and Planets.* New York, NY.: Houghton Mifflin.

http://en.wikipedia.org/wiki/Messier_82
http://www.seds.org/messier/m/m082.html
http://www.robgendlerastropics.com/M82text.html

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CCAS April Meeting

DATE:	**Tuesday April 10, 2007**
TIME:	**7:30 p.m. EDT**
PLACE:	Room 113 – Boucher Building
	West Chester University
LOCATION:	South Church Street
	West Chester, PA

A map of the campus showing the location is on page 16.

This month's Constellation of the Month (COM) will be Canis Major, presented by Vic Long (postponed from March).

This month's presentation will be "CCD Astronomy Imaging Adventure in the Southwest", by CCAS member Steve Siskind. Steve and his brother Dave took a trip to the Southwest to do CCD imaging of astro objects, using rented equipment. Neither of them had done this before—Steve doesn't even own a telescope, but his brother Dave used to do film astrophotography through his 8" Celestron. Come see what they learned and the fun they had! You may decide to make just such a trip yourself!

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Welcome!

We welcome our newest members to the Society: John Seago and Family of West Chester. We're glad you decided to join us! Clear skies to all!

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CCAS Observing Session
April 13/14, 2007

CCAS Observing Sessions will be at the Brandywine Valley Association's Myrick Conservancy Center (see map on page 15) on Fridays 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 the next day, Saturday. 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 free of charge and open to the public.

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International Astronomy Day is April 21, 2006

We have completed arrangements to have a display at the Exton Square Mall on that Saturday. We will be in the North Court. We also have permission to set up for solar observing outside the North entrance to the Mall. The Mall asks that we be in position and set up by 10:00 that morning, before the Mall officially opens. You'll have no trouble getting in the North entrance (midway between Sears and the Food Court) before 10:00. If you can't stay all day, that's OK, come for the morning or afternoon. If you can come for an hour or so around lunchtime, that's a big help: then people who are there longer can take a break to eat lunch. Another way to help is to make some extra copies of this April newsletter if you can: 5, 10, however many copies you can make, please do that and bring them along. We pass out copies of the current newsletter and we always run out. If you have purchased a CCAS polo shirt, this is an excellent activity for "showing the colors."

Please consider helping out with this important outreach program. If you can attend, please contact Kathy Buczynski at 610-436-0821 so we know how many members will be showing up, and at about what times. Thanks!

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CCAS Introductory Astronomy 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 the remaining classes will be held:

April 3	Astronomy on the Web
April 17	The Secret Life of Stars
May 1	Planetarium show (WCU planetarium)
May 15	Beyond Naked Eye

The classes will be held in Room 113 in the Boucher Building at West Chester University. This is the room where we hold our monthly meetings. See the map on page 16.

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2007 is Election Year in CCAS

The offices of President, Vice President, Treasurer, and Secretary are up for election this year. These officers serve two-year terms. Anyone with a valid CCAS membership is eligible for these offices.

At the March meeting three members volunteered for the Election Committee. The Election Committee (EC) canvased the membership for nominations to form the slate of candidates. As of March 31, we do not have a candidate for Vice President. Please contact Jim Anderson if you would like to run for Vice President.

In April, ballots are mailed to all CCAS members in good standing. For the election, a Family membership gets one vote. The newsletter editor usually assists the EC with mailing the ballots, because he already has in place the needed computer software to print the envelopes, etc. At the May meeting, the Election Committee collects and counts the ballots. They then announce the new officers. The names of the new officers are published in the newsletter in June, and the new terms of office officially begin in June.

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Treasurer's Report by Bob Popovich

January 2007 Financial Summary

Beginning Balance	$1,753
Deposits	195
Disbursements	0
Ending Balance	$1,948

February 2007 Financial Summary

Beginning Balance	$1,948
Deposits	643
Disbursements	403
Ending Balance	$2,188

Membership Renewals Due

04/2007	Corrum
	Heck
	Imburgia
	Popovich
	Reynolds
	Richter
05/2007	Henderson
	Kutta
	Long
	Volcheck
06/2007	Churchman
	Driedyen
	Hebding
	Limeburner
	Mayer-Kielmann
	Moore
	Siskind
07/2007	Scarfo
	Sleeper
	Tobey

Membership Renewals

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

Bob Popovich
416 Fairfax Drive
Exton, PA 19341-1814

The current dues amounts are listed in the *CCAS Information Directory* on page in this newsletter.

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Minutes from CCAS March Meeting

by Vic Long, CCAS Secretary

For the meeting held on Tuesday March 13, 2007.

Constellation of the Month:

Don Knabb prepared a handout and made a presentation on Corona Borealis (The Northern Crown). *Starry Night* software was used to show its location and stars. The constellation's mythology, interesting facts, and observing club objects were discussed.

Main Presentation:

Vic Long demonstrated how the free software program *Registax* could be used to create high resolution images from inexpensive webcam AVI movies. *Registax* was used to create a stacked image and perform wavelet processing on a short movie taken of the crater Clavius.

Education (Kathy Buczynski):

Introductory Astronomy class is currently running and will finish on May 15.

Observing (Don Knabb):

We have received an invitation for joint observing session at Anson B Nixon Park in Kennett Square. The purpose of the session is to provide an orientation to the sky for those of us who would like to know more about the stars and planets.

Website (John Hepler):

John reports problems with the "members" e-mail list have recurred. The issue is only with Comcast subscribers—mail from our hosting company looks like spam to Comcast, which blocks it.

Treasurer (Bob Popovich):

Astronomy classes on DVD have been ordered; tickets for *Life of Brecht* play have been received; International Astronomy Day at Exton mall is scheduled for April 21st.

Light Pollution (Ed Lurcott):

Ed Lurcott will attend the first meeting to discuss light pollution on April 4th being held by the Pennsylvania Outdoor Lighting Council. They are looking for us to provide a liaison.

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Calendar Notes

May meeting location change: We will be in Boucher Room 222 because of finals week at WCU.

May observing session location change: We have been asked to host an observing session at Anson B. Nixon Park in Kennett Square. The park is a 106 acre public park just north of Kennett Square. There are many events held at the park such as concerts, nature programs, etc. They even have restrooms! Check out the web site at: **http://www.ansonbnixonpark.org/**

Since many club members are busy supporting the Astronomy Classes through mid May we have decided to combine our regular monthly observing with the event at Anson B. Nixon Park in order to make fewer demands on club members' time. Therefore, we will not be observing at BVA in May, but will observe at the park on the same date as was scheduled for BVA. Don Knabb will visit the park soon and select an observing location. He will put directions to the park and observing location in the next newsletter.

May 1, 2007 (Tuesday)	Introductory Astronomy class Location: West Chester University **Planetarium Show!** **All CCAS members invited!** 7:00 p.m. EDT.
May 8, 2007 (Tuesday)	CCAS Meeting Location: West Chester University Boucher Hall **Room 222** 7:30 p.m. EDT
May 15, 2007 (Tuesday)	Introductory Astronomy class Location: West Chester University 7:00 p.m. EDT.
May 18/19, 2007 (Friday/Saturday)	CCAS Observing Session Location: Anson B. Nixon Park sunset
June 15/16, 2007 (Friday/Saturday)	CCAS Observing Session Location: Brandywine Valley Assoc. sunset
July 13/14, 2007 (Friday/Saturday)	CCAS Observing Session Location: Brandywine Valley Assoc. sunset
August 17/18, 2007 (Friday/Saturday)	CCAS Observing Session Location: Brandywine Valley Assoc. sunset
September 14/15, 2007 (Friday/Saturday)	CCAS Observing Session Location: Brandywine Valley Assoc. sunset
October 12/13, 2007 (Friday/Saturday)	CCAS Observing Session Location: Brandywine Valley Assoc. sunset
November 9/10, 2007 (Friday/Saturday)	CCAS Observing Session Location: Brandywine Valley Assoc. sunset

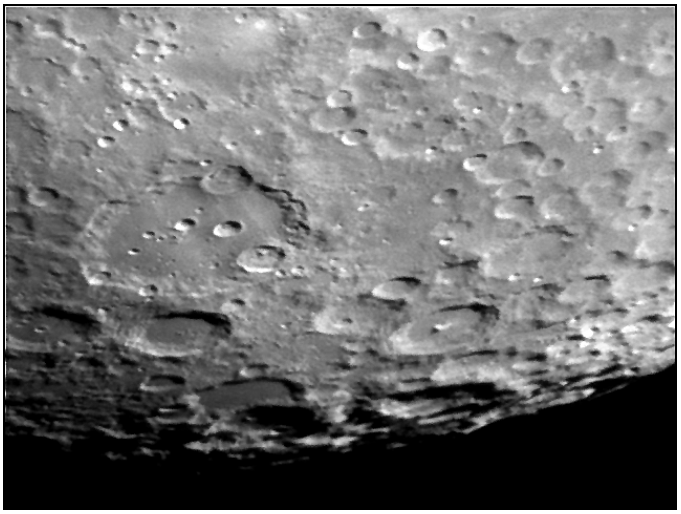
★ ★ ★ ★ ★

Lunar Eclipse Images
by Vic Long

"I was in Raleigh, NC on Saturday March 3 (clear skies and warm). I didn't have a telescope, but managed to get a few shots of the eclipse with my digital camera."

★ ★ ★ ★ ★

Clavius Crater Image
by Vic Long



"Thursday night (March 29) was clear, not too chilly, with a bright moon dominating the sky—prime time for Clavius!

"A four-inch f/10 refractor, a Celestron Neximage webcam, an UV/IR-cut filter and a 2X Barlow were used to take this image. Three webcam frames were selected manually and stacked in Registax. Notice that some of the smaller craters on the floor of Clavius are captured."

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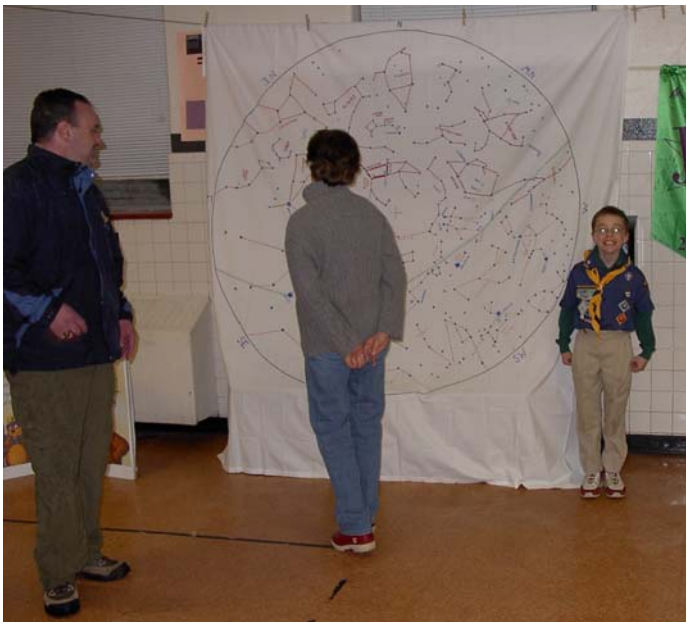
Visit to a Cub Scout Pack on March 15



Kathy Buczynski admires the Pack's March star chart.

Although the skies were cloudy on March 15th, Don Knabb and Kathy Buczynski helped a Pack of Cub Scouts learn how to read a star map. Pack Master Chris McHenry of Cub Scout Pack 199 of West Chester took the time to recreate a March star chart on a sheet and displayed it for all to see.

There was also a discussion of equipment including the difference between a reflector and a refractor and how easy it is to use a pair of binoculars to explore the night sky.

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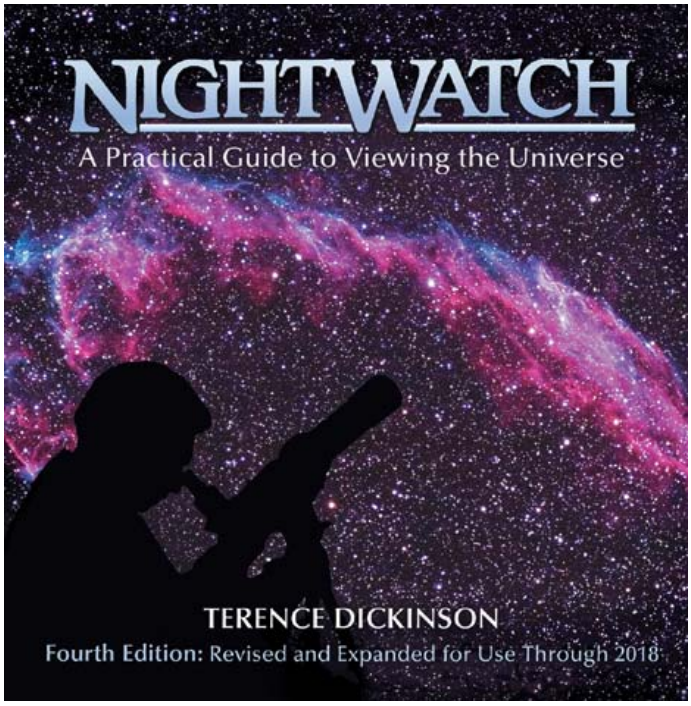
Book Review:

Nightwatch, A Practical Guide to Viewing the Universe, by Terence Dickinson, Fourth Edition



I picked up this book just a few days ago and have been so impressed by it that I wanted to share my thoughts on it with our club members as soon as possible. We have many new members and if you are looking for a good book to get started in astronomy I think this is a great choice.

First of all, it's a good sized hardcover book, about 11 inches square. And one of the best things about it is that it is spiral bound so that you can open it and fold the cover completely around to the back so you can easily handle it in the field.

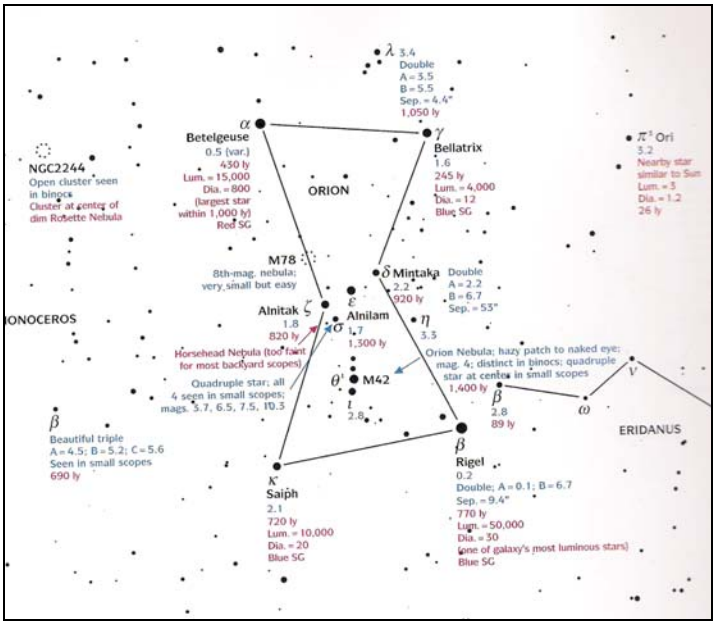
The book is very well made by Firefly Books who publishes quite a few astronomy titles. The colors are bright and the pages are filled with incredible photographs, many by the author.

There is a great deal of excellent information in this book, many things that I have not seen before, and I've looked in quite a few astronomy books. The author provides several charts helping us understand where our solar system is in the Milky Way galaxy.

The basics are well covered and he includes many interesting side discussions such as "The Galaxy in a Sandbox" which starts the discussion of the size of the galaxy and universe by stating that there are as many grains of sand in a child's sandbox as there are stars in our galaxy.

There is a clearly written section on helping one chose a telescope if you are new to astronomy. This is a good, descriptive description without getting too technical.

Seasonal "all sky" charts are of course included. One of the parts of the book that really impressed me is the deep sky charts.



You will notice that some of the printing is black, some blue and some red. Of course you can see all the printing while "armchair" stargazing with the book. But when you are outside observing and you use your red flashlight, the red text is not visible, making the chart less cluttered. The red text is background information you really don't need when you are under the night skies.

So if you're looking for a good beginning book or a good addition to anyone's astronomy library no matter how long you have been observing, take a look at this book. I believe it will be one of my main companions under the night skies for many years to come.

Don Knabb
CCAS Observing Chair

★ ★ ★ ★ ★

CCD Camera for Sale

CCAS member Pete LaFrance has a SBIG ST-8xe camera for sale. Pete recently upgraded to a ST-10xe, and doesn't really need **two** cameras! The St-8xe has served him well as his images on his web site can attest to. Images taken with this camera can be viewed on his web site at:

www.plafrance.org

Here is some information about the ST-8xe camera:

Dual sensor, TC-211 guide chip, USB camera CCD AGB, Water Cooling Ready, Custom Case. This camera has served me well. I am the second owner and have had the camera for about 1 1/2 years. Camera is in good condition. Pay-Pal users add 3%.

Price...$2600.00

Pete can be reached by phone at **610-268-2616** or by email at **plafrance@verizon.net.**

Pete's image of M11, the Wild Duck Cluster, taken with the ST-8xe.

Pete's image of M33, a spiral galaxy in Triangulum, taken with the ST-8xe.

Pete's image of M51, the Whirlpool Galaxy, taken with the ST-8xe.

The SBIG ST-8xe camera
(photo from the SBIG website).

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Astronomus

"THE Astronomer"

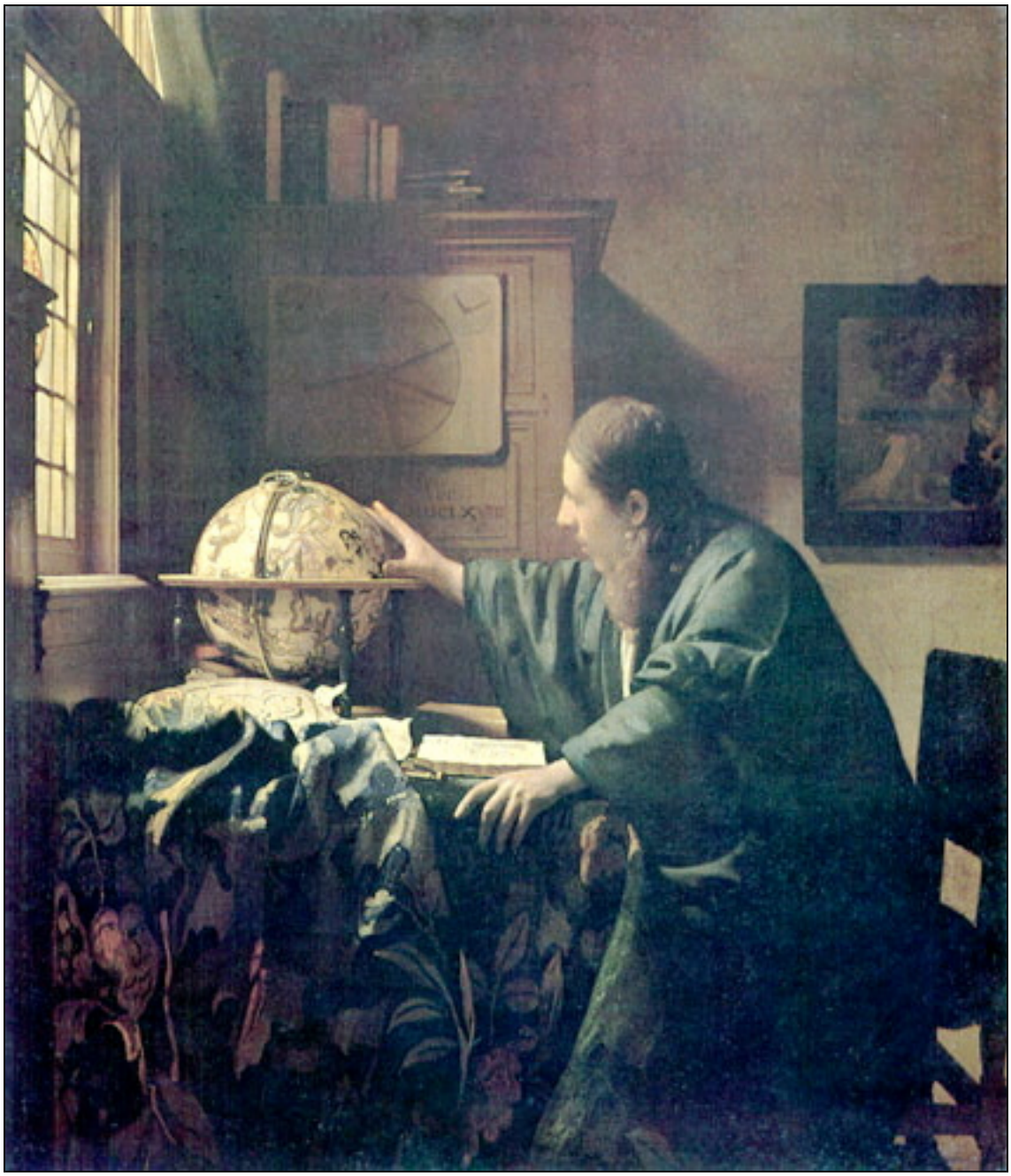
By Bob Popovich

I suspect we all have moments when our observing skills bear exhilarating fruit. Those moments (rare for me) when we really consider ourselves an amateur astronomer with an accent on the astronomer. But moments also exist (not so rare for me) when, perhaps, we look up at the night sky and can't identify any constellation for sure. These are the times when we're an amateur astronomer with an accent on the amateur.

But no matter whether we've just observed M101 with binoculars or failed to find the Big Dipper, each of us remains an amateur astronomer—not THE astronomer. No cover story in *Time* magazine, no article in a scholarly publication and certainly no rendering of our image in a public place (I suspect that one or two of you have been pictured at the Post Office, but that's another topic altogether).

But I digress. Let's return to the distinction of "an" vs. "the." Perhaps you'll recall a college professor working him/herself all into a lather over the idea of someone composing THE history of anything. "Not THE history, but A history!" they protested. "The notion of being THE account of anything is tantamount to declaring your work definitive." Likewise we distinguish an astronomer from THE astronomer. But could anyone ever have been called THE astronomer? Well, THE astronomer has to have existed or this would be the end of my story.

In 1668, a 36 year old Dutch master painter named Johannes Vermeer gave the world one his 35 paintings: The Astronomer. Measuring less than 20" x 18", it is a magnificent depiction of a consummate scientist of his day. Let's take a closer look.



First—the man himself. Wearing a silk robe often sported by that day's men of science, it was styled after the Japanese kimono. As for who posed for the painting, you might be disappointed to know that it was not a 17th century astronomer. But wait—THE astronomer has a surprise for us. It is suspected that the profile we see may be that of Anton van Leeuwenhoek—a neighbor of Vermeer's who is credited with having developed the microscope. This intriguing connection between the optics of the micro and the optics of the macro (the telescope) is lovely—even if it's not true.

Next, some of the tools of the trade. Look at THE astronomer's gaze upon the celestial globe as crafted by Joducus Hondius—even from our angle we see both his understanding and his awe.

Joducus Hondius

Details may be difficult to see in the above illustration of THE astronomer, but looking at the globe in the actual painting (in the Louvre) it is easy to see constellations including Ursa Major, Draco and Hercules. There are 3 known copies of this globe in museums today.

Though he appears to gaze at the globe, can't you also sense his unseen eyes darting back and forth between the globe and the open book? This book was so masterfully rendered by Vermeer that it has actually been identified as *The Investigation and Observation of Stars* (1621) by Adrian Metius, himself a student of none other than Tycho Brahe.

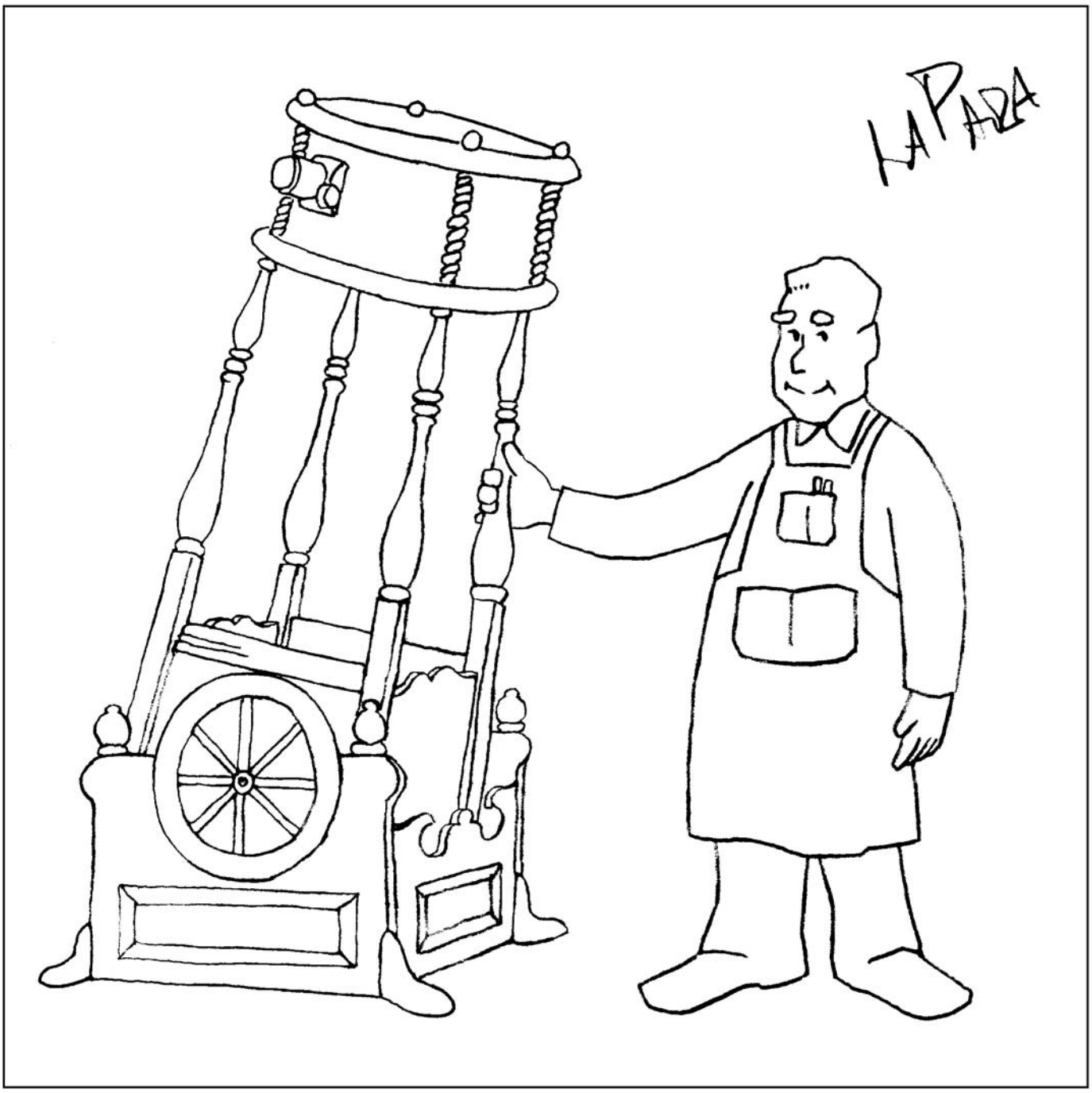
Adrian Metius

And like any good astronomer of the day, THE astronomer has an astrolabe close at hand. Can you see it? It's lying between the book and the window, propped up just a bit by the globe's base. Here, too, Vermeer's skill shines as brilliant as Sirius for like the book, the astrolabe has been identified as the work of a Willem Jansz Bleau (c. 1625). Combining this analog computer with the globe and the astronomy reference book, THE astronomer was fully equipped to ply his trade.

Contemplative, intense, learned and surrounded by his toys, he was truly THE astronomer.

Next Time: What I Want To Be When I Grow Up.

★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★



WOODWORKER'S DOBSONIAN

Cartoon by Nicholas La Para

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CCAS Information Directory

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 North First Avenue
Tucson, AZ 85719

Telephone: 520-293-3198
Fax: 520-293-3192
E-mail: ida@darksky.org

For more information, including links to helpful information sheets, visit the IDA web site at:

www.darksky.org

Note that our CCAS Webmaster John Hepler has a link to the IDA home page set up on our Society's home page at www.ccas.us.

Dark-Sky Website for PA

The Pennsylvania Outdoor Lighting Council has lots of good information on safe, efficient outdoor security lights at their web site:

http://home.epix.net/~ghonis/index.htm

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Good Outdoor Lighting Website

One of the biggest problems we face in trying to reduce light pollution from poorly designed light fixtures is easy access to good ones. When you convince someone, a neighbor or even yourself, to replace bad fixtures, where do you go for good lighting fixtures? Now there is a web site and business intended to address that very problem. At this site you can find information on all kinds of well-designed (that is, star-friendly) outdoor lighting fixtures. This company, Starry Night Lights, intends to make available all star-friendly fixtures they can find, and information on them, in one place. Check it out, and pass this information on to others. Help reclaim the stars! And save energy at the same time!

http://www.starrynightlights.com/

Local Astronomy Store: *Skies Unlimited*

There is an astronomy equipment store called ***Skies Unlimited*** in our area, in Pottstown to be specific, at:

Suburbia Shopping Center
52 Glocker Way
Pottstown, PA 19465
Telephone: 610-327-3500 **or** 888-947-2673

http://www.skiesunlimited.net/

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CCAS Members Benefit from High Point Scientific

The owners of High Point Scientific, an astronomy equipment store in Montague, NJ, have extended a special free benefit to members of the CCAS. All members get a *High Point Advantage Card*, which entitles the member to special discounts on almost all purchases. It also includes access to exclusive deals only available to *High Point Advantage Card* holders. Other benefits of the program are detailed in the letter and booklet given to each CCAS member.

High Point Scientific
442 Route 206
Montague, NJ 07827
Phone: 1-800-266-9590

www.highpointscientific.com

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Find out about Lyme Disease!

Anyone who spends much time outdoors, whether you're stargazing, or gardening, or whatever, needs to know about Lyme Disease and how to prevent it. You can learn about it at:

www.LymePA.org

Take the time to learn about this health threat and how to protect yourself and your family. It is truly "time well spent!"

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, Linda Lurcott Fragale, to make arrangements to borrow one of the books in the CCAS lending library. Copies of the catalog are available at CCAS meetings, and on the CCAS website. Linda's phone number is 610-269-1737.

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

stargazer1956@comcast.net

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 (**in full color**!) via 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:

stargazer1956@comcast.net

CCAS Website

John Hepler is the Society's Webmaster. You can check our Website at:

http://www.ccas.us/

John 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 John Hepler (484-266-0699) or e-mail to webmaster@ccas.us

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 Executive Committee

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

President:	Kathy Buczynski 610-436-0821
Vice Pres:	Jim Anderson 610-857-4751
ALCor and Treasurer:	Bob Popovich 610-363-8242
Secretary:	Vic Long 610-399-0149
Newsletter:	Jim Anderson 610-857-4751
Librarian:	Linda Lurcott Fragale
Observing:	Don Knabb 610-436-5702
Education:	Kathy Buczynski 610-436-0821
Webmaster:	John Hepler 484-266-0699
Public Relations:	Deb Goldader 610-304-5303

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 Treasurer's Report in each issue of *Observations* to see if it is time to renew your membership. If you are due to renew, you can mail in your renewal check made out to "Chester County Astronomical Society." Mail to:

Bob Popovich
416 Fairfax Drive
Exton, PA 19341-1814

Sky & Telescope Magazine Group Rates

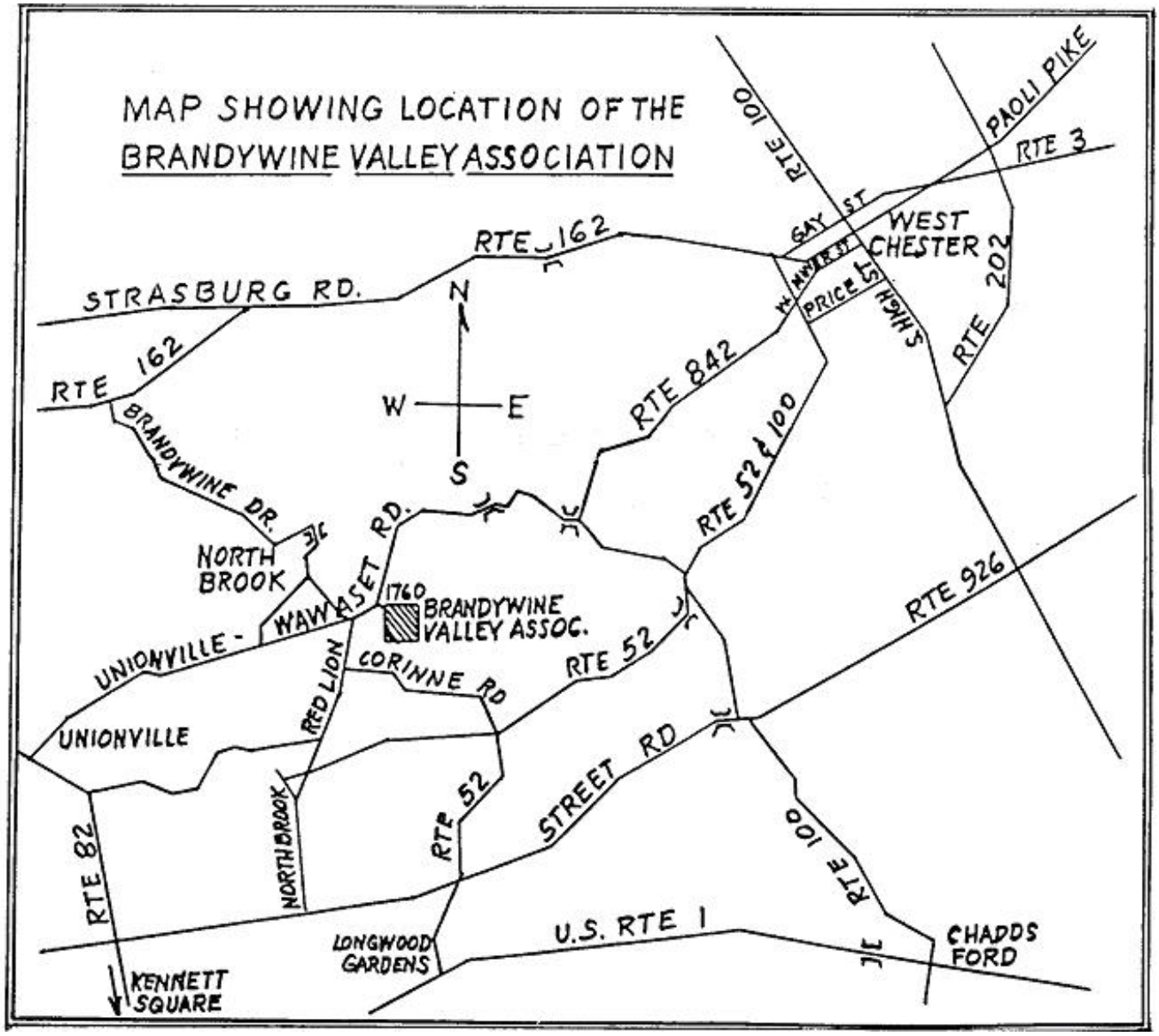
Subscriptions to this excellent periodical are available through the CCAS at a reduced price of **$32.95** which is much less than the newsstand price of $66.00, and also cheaper than individual subscriptions ($42.95)! Make **sure** you make out the check to the **Chester County Astronomical Society** (do **not** make the check out to Sky Publishing, this messes things up big time), note that it's for *Sky & Telescope*, and mail to Bob Popovich. Or you can bring it to the next Society meeting and give it to Bob there. **If you have any questions by all means call Bob first (610-363-8242).** Buying a subscription this way also gets you a 10% discount on other Sky Publishing merchandise.

Astronomy Magazine Group Rates

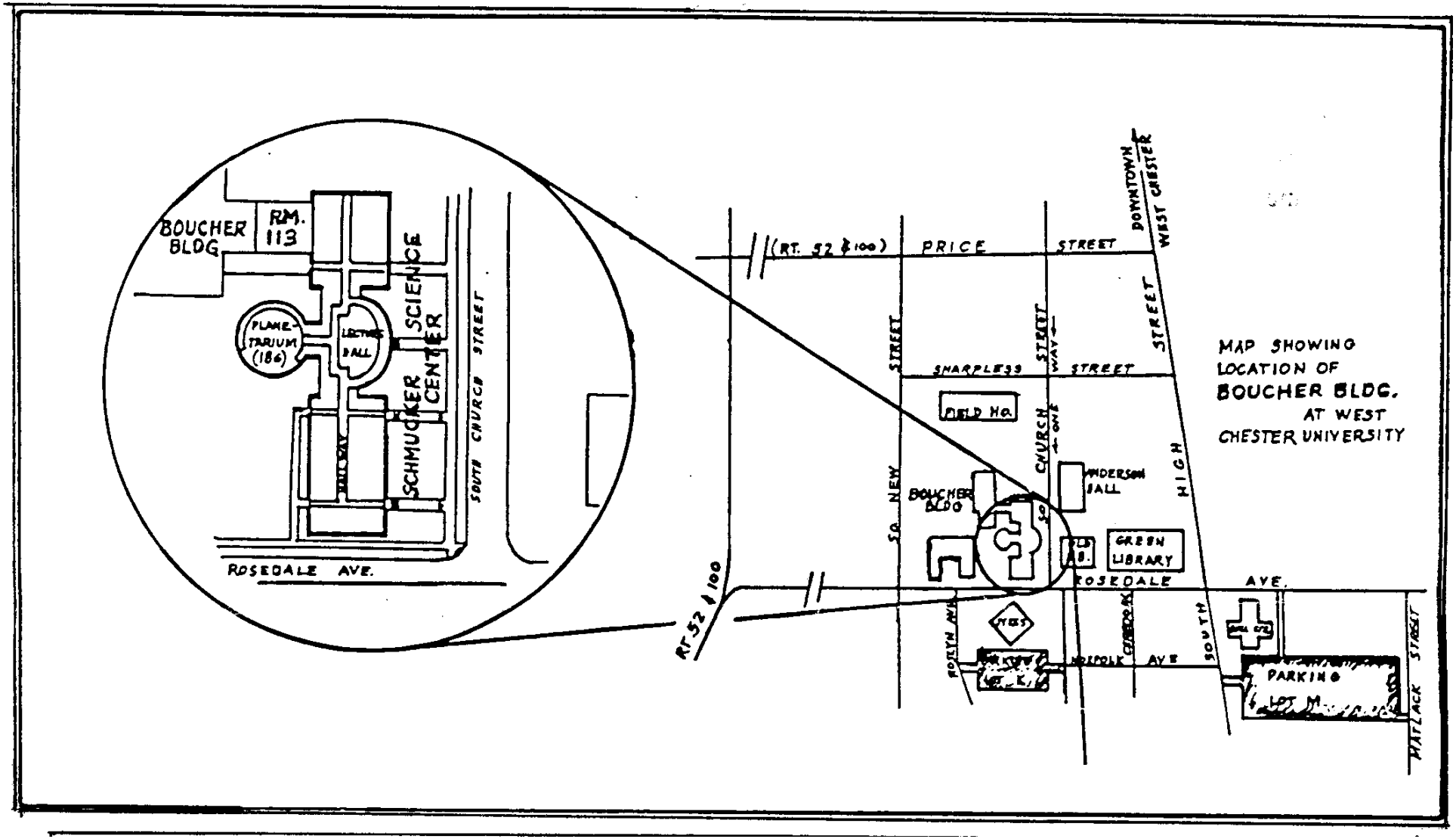
Subscriptions to this excellent periodical are available through the CCAS at a reduced price of **$34.00** which is much less than the individual subscription price of $42.95 (or $60.00 for two years). If you want to participate in this special Scoiety discount offer, **contact our Treasurer Bob Popovich.**

Phone: 610-363-8242

e-mail: B2N2@verizon.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).



Parking is available behind Sykes Student Center on the south side of Rosedale Avenue (Parking Lot K), and behind the Bull Center at the corner of Rosedale Avenue and South High Street (Parking Lot M). If you arrive early enough, you may be able to get an on-street parking space along South Church Street, or along Rosedale Avenue. You can take the Matlack Street exit from Rt. 202 South; Matlack Street is shown on the map at the lower right corner with Rt. 202 off the map. If approaching West Chester from the south, using Rt. 202 North, you would continue straight on South High Street where Rt. 202 branches off to the right. This would bring you onto the map on South High Street near Parking Lot M, also in the lower right corner.

Roy Scarfo, Sr., of Downingtown PA, has been accepted into the International Association of Astronomical Artists (IAAA). His juried membership acceptance was based upon his space art being of the highest standards, both astronomically and artistically. Scarfo is considered one of the pioneers of space art. He was named the top international designer of space colonies by Reuters *International Design Magazine*. He was Art Director of General Electric's Space Technology Center at Valley Forge PA for over fifteen years. He was also a consultant and space art illustrator for the *New York Times* for over ten years. His space illustrations have been reproduced by many major newspapers and magazines throughout the world. Scarfo's exhibit of 35 paintings opened the International Space Hall of Fame in Alamogordo, NM. His work can be viewed at **www.royscarfo.com.**

Roy Scarfo is also a member of the CCAS. He has graciously given the Society permission to share some of his visions of the future in our newsletter.

"Lunar City", by Roy Scarfo

Description from Roy's website:

This advanced lunar city would be a combined complex of surface and underground activity with modern Lunarites living mainly below the surface, protected from the extreme temperatures and dangerous cosmic rays.

At the extreme top left is the power station, its source of energy both nuclear and solar. To its right are ore and rock mines that will tap the mineral wealth of the moon. At top center is a large industrial complex that processes the ore into liquid hydrogen, oxygen and other substances necessary for maintenance of the lunar city.

Hovering overhead in the lunar sky is the moon orbiting station that serves as a transfer point for passengers shuttling between Earth and Moon. At the right upper center is a large lunar spaceport. The smooth landing surface is made of pulverized moon rock and a man-made binder.

Inside the hollowed-out lunar city at lower left is a moving sidewalk that carries pedestrians at speeds up to 15 miles per hour. It is shown radiating out in three spokes from the bubble hub. The tall slab-like structures in the upper part of the lunar city are apartments. The rectangular dome-topped structure directly to the right is Lunar Campus, Columbia University.

Beneath the large dome at the left center of the city is a scientific research center. The dome to the right houses lunar farms for the growing of fruit and vegetables in a carefully simulated "Earth" environment.

A park with a space art gallery surrounding the central fountain is at the lower portion of the city center. To its left a moon citizen is shown hovering in a one-man winged "transport" made possible because of the moon's low gravitational pull. Underneath is the Olympic Stadium, site of the first Lunar Olympics. Sets of high-intensity floodlights recreate Earth daylight in Lunar City.

On the moon surface, at extreme lower right, is an astronomical observatory that will be able to view the heavens without the obstructed atmosphere of Earth. Above the observatory is a roving moon taxi. At right center is a complex radio antenna for the radio astronomical observation of the universe. To its left is the covered moving pedestrian sidewalk that brings the Earth travelers from the spaceport to Lunar City.

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