Observations

A Monthly Publication Of The

CHESTER COUNTY ASTRONOMICAL SOCIETY

MARCH 2008

(VOLUME 16, NO. 3)

Visit our website at www.ccas.us

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Important March 2008 Dates

4 **Backyard Observing class** meets at West Chester University. Class starts at 7:00 p.m. EST.
Topic: *Telescope Demo*.

See page 4 for details.

7 New Moon.

7/8 **CCAS Observing Session**
Location: **Brandywine Valley Association**
Time: sunset, or earlier (see page 3 for more details.)

11 **CCAS Meeting**
Location: West Chester University
Room 113, Boucher Building

7:00 – "Active Galaxies and Quasars" (DVD).

7:30 – Regular Meeting Starts

Constellation of the Month: Orion

Main Presentation: "Aurora Expedition in Alaska"

See page 3 for more details.

14 First Quarter Moon.

18 **Backyard Observing class** meets at West Chester University. Class starts at 7:00 p.m. EST.
Topic: *Within the Solar System*

See page 4 for details.

21 **Vernal equinox, 1:48 a.m. spring begins!**

21 Full Moon.

29 Last Quarter Moon.

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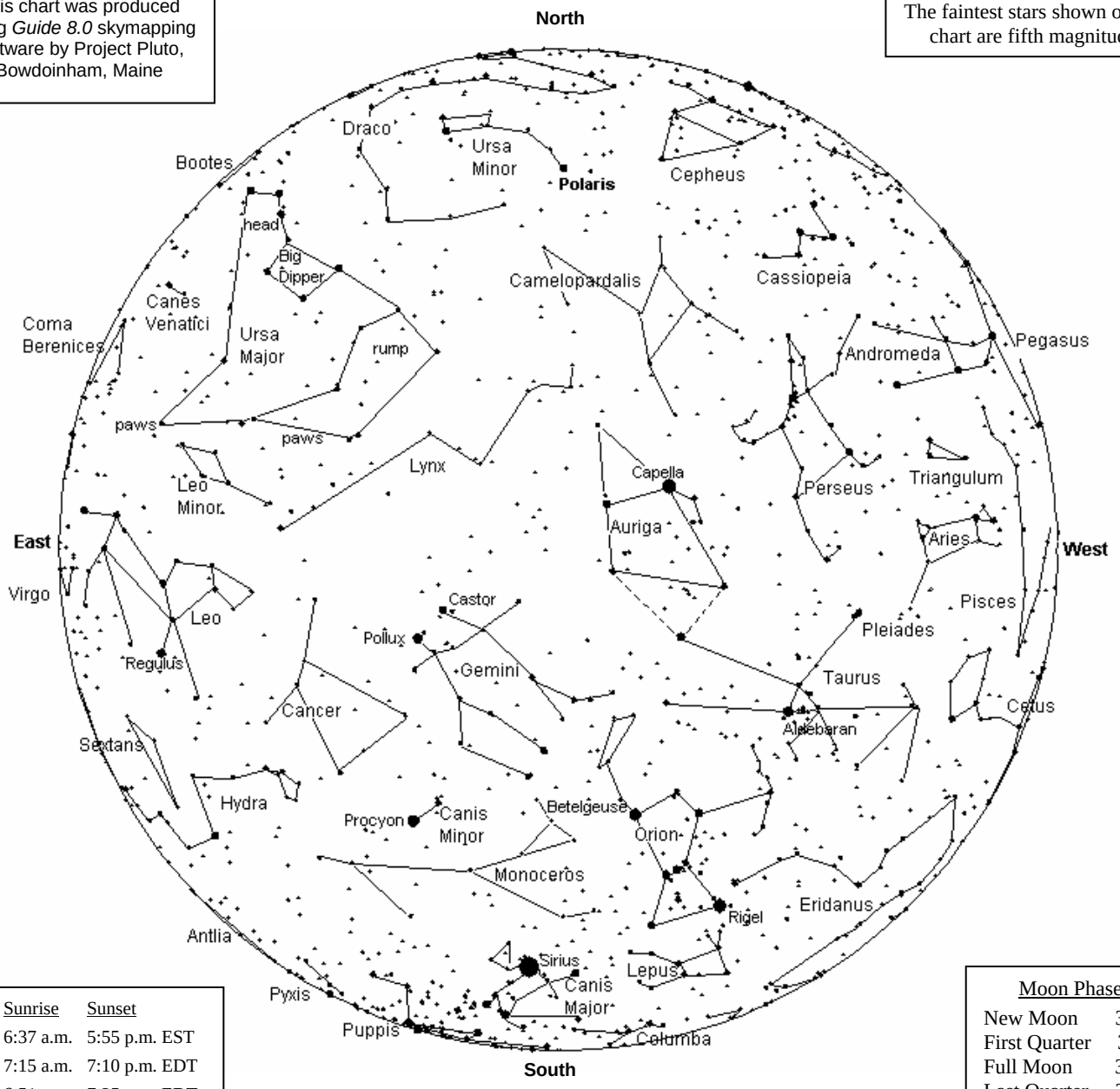
This chart was produced using *Guide 8.0* skymapping software by Project Pluto, Bowdoinham, Maine

The faintest stars shown on this chart are fifth magnitude.



Date	Sunrise	Sunset
3/1	6:37 a.m.	5:55 p.m. EST
3/15	7:15 a.m.	7:10 p.m. EDT
3/30	6:51 a.m.	7:25 p.m. EDT

Moon Phases	
New Moon	3/07
First Quarter	3/14
Full Moon	3/21
Last Quarter	3/29

The sky over Chester County

March 15, 2008 at 8:00 p.m. EDT

The Planets, by Don Knabb

Mercury: Look for Mercury early in the month low in the eastern sky in the glow of the rising Sun. Mercury stays close to Venus through all of March.

Venus: Venus is pulling away from us in our race around the Sun and is very low in the eastern sky as dawn approaches. Venus will soon be lost in the glow of the Sun until it comes around the other side of the Sun as the "Evening Star" this summer.

Mars: The Red Planet is high in the sky as the sky darkens. But, Mars is fading rapidly through the month as we get further away. Take your binoculars out around March 10th and look at Mars as it is close to the star cluster M35!

Jupiter: The King of the Planets is rising several hours before the Sun, but is best viewed just before dawn when it is fairly high in the sky. Just to the right of Jupiter is the teapot of Sagittarius with many deep sky wonders nearby.

Saturn: The ringed planet is the highlight of the month. It is well up in the east as darkness falls, but wait a bit longer for it to get higher in the sky so you can view it through less of our atmosphere. Share this sight with family and friends for an experience they will never forget.

Uranus & Neptune: Both gas planets are difficult to find during March since they are lost in the glow of the sun at dawn.

Pluto: The "ex-planet" Pluto can be found before dawn above Sagittarius if you have steady, clear skies and a really big telescope.

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.

March Observing Highlights

by Don Knabb, CCAS Observing Chair

March 3 Mercury is at greatest western elongation.

March 7 New Moon, 12:14 p.m.

March 10 Mars is nearby M35, a beautiful sight in binoculars!

March 14 First quarter Moon, 6:46 a.m.

March 20 Vernal equinox, 1:48 a.m. spring begins! This is the earliest in the year that the start of spring has occurred since 1896.

March 21 Full Moon, 2:40 p.m., The Full Worm Moon according to Native Americans. As the temperature begins to warm and the ground begins to thaw, earthworm casts appear, heralding the return of the robins. Also called the Full Crow Moon, the Full Crust Moon and the Full Sap Moon.

March 29 Last quarter Moon, 5:47 p.m.

Planets: Just after the glow of the sun fades in the evening we can see Mars high in the sky and Saturn reasonably well up in the east. Then it is a long wait until Jupiter rises a few hours before the Sun.

Constellations: Early in the evening the "big guy" Orion dominates the sky in the southwest, with bright Capella in Auriga nearly overhead. Leo the Lion is in the southeast and as the night progresses you can see some spring constellations rising such as Bootes, Corona Borealis and Hercules.

Messier/Deep sky: Take a few more gazes at the Orion Nebula before it settles into the west as spring marches on. The Big Dipper is high in the sky so take this opportunity to look for galaxies M81 and M82. With a low power eyepiece in your telescope they might be in the same field of view depending on your equipment. For more of a challenge, look for the 10th magnitude galaxies M65 and M66 in Leo.

Comets: Just as in February we had a chance to see Comet 46P/Wirtanen, we can do so again in March if we look for the comet when the Moon is not bright in the sky. Look during the first week of the month or early in the evening during the last week of the month. *Astronomy* magazine has a finder chart for this short period comet. You'll need dark skies and a telescope to see this comet, which should show a faint tail.

Meteor shower: There are no significant meteor showers during March.

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Welcome!

This month we welcome two new members to the Society: Randall Spackman and Family of West Chester; and Tracey Dougherty of Downingtown. We're glad you decided to join us under the stars! Clear Skies to you all!

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CCAS March Meeting

DATE: **Tuesday March 11, 2008**
PLACE: Room 113 – Boucher Building
West Chester University
LOCATION: South Church Street
West Chester, PA
TIME: **7:00 p.m. EDT for Cosmology Class**
7:30 p.m. EDT for regular meeting

Our February meeting was cancelled due to bad weather. We have rescheduled the program items for February to the March meeting.

A map of the campus is on page 14.

Cosmology Class: **Active Galaxies and Quasars**

This month's Constellation of the Month (COM) will be **Orion**, presented by Jim Anderson.

This month's main presentation will be **"Aurora Expedition in Alaska"** by Deb Goldader (illustrated talk, with lots of gorgeous pictures).

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CCAS Observing Session March 2008

The Observing Session will be on Friday March 7 at the Brandywine Valley Association, starting at sunset, if the weather is good enough. In case of bad weather ("mostly cloudy" qualifies as bad weather for stargazing, even if it's not raining) then we will observe on Saturday March the weather cooperates). If the weather is good both nights, we can observe both nights. You can arrive before sunset to set up if you want to. CCAS Observing Sessions are free and open to the public. You can bring friends and family.

If you have any questions write to **observing@ccas.us** or **dknabb00@comcast.net**, or call Don Knabb at **484-888-1831**. Directions to the BVA are on page 13.

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CCAS Observing Sessions in 2008

April 4/5

May 10: Astronomy Day at Hoopes Park in West Chester

June 6/7

July 5 (Saturday only, due to holiday)

August 1/2

September 5/6

October 3/4

November 28/29

December 26/27

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CCAS April Meeting

Coming attractions for our meeting on April 8:

Cosmology Class (DVD): **Cosmic Powerhouses of the Distant Past.**

Constellation of the Month (COM): **Canis Major.**

Main presentation: **Member's Night:** any member can give a brief talk on any astronomy subject (5-15 minutes long), or share observing experiences. Have you acquired any new gear or books lately? Perhaps you could tell the other members about it, tell us what you think are the good points and the drawbacks.

Also, questions will be taken on any astronomy topic. The members present will try to come up with an answer. Any that cannot be answered at the meeting will be researched later and published in the April newsletter.

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Treasurer's Report

by Bob Popovich

January 2008 Financial Summary

Beginning Balance	$1,717
Deposits	0
Disbursements	0
Ending Balance	$1,717

Membership Renewals Due

03/2008:	Ballester
	Dascaloff
	LaFrance
	Malloy
	Morgan
04/2008:	Popovich
	Reynolds
	Richter
	Seago
05/2008:	Aziz
	Kutta
	Long

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 12 in this newsletter.

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CCAS Backyard Observing Class

The Backyard Observing class is underway, with all seats filled. The remaining six classes will be held on the first and third Tuesdays of each month, starting at 7:00 p.m. and ending at 8:00 p.m. These are the dates on which classes will be held:

March 4	Telescope Demo
March 18	Within the Solar System
April 1	Targets of Opportunity
April 15	Observing Stars
May 6	Finding Faint Fuzzies, Part I
May 20	Finding Faint Fuzzies, Part II

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.

If you would like to help, either as an instructor (or perhaps as an instructor's assistant), or with "logistics" (set up, clean up, registration, etc.) please call **Kathy Buczynski at 610-436-0821.** We can always use some extra help.

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Astronomy Day Plans Underway

This year the CCAS will celebrate International Astronomy Day on Saturday May 10 in a different way than in recent years. We will team up with West Chester's Department of Recreation to host a star party at Hoopes Park in West Chester. The Recreation Department will do advertising of the event, in addition to providing support staff at the park that day. We will provide the telescopes and program.

Don Knabb is leading the planning for this event. If you have some ideas for what we could do for the program (note that offering an idea does **not** mean you have to run it or present it!), or can help with telescopes, making handouts, crowd control on the night of the event, please contact Don. Thanks!

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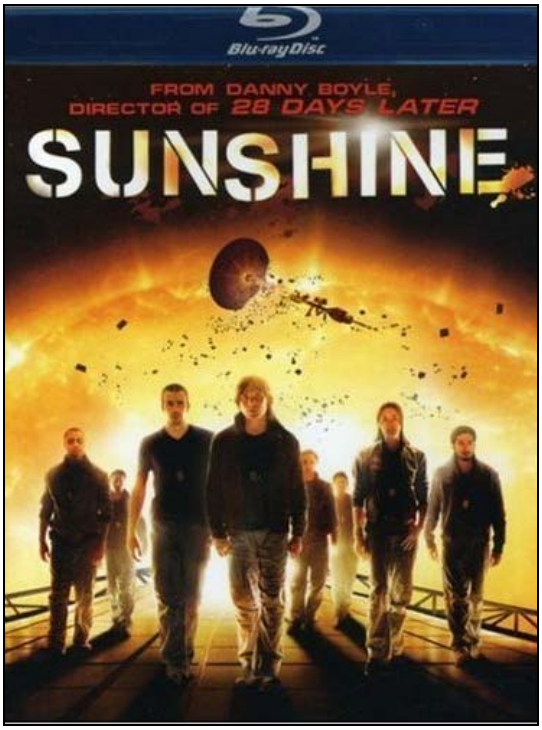
DVD reviews: *Sunshine* and *Roving Mars*

by Don Knabb

I thought I'd give you a short review of two movies Barb and I rented recently. It might save you having to sit through the first one, and will hopefully generate some interest to see the second one.

First is *Sunshine*. Being a science fiction fan, when I saw this on the shelf I knew I wanted to see it. It is a story about a mission to travel to the Sun and restart the reactions with a huge bomb. Earth is freezing, one mission has already failed and this is the story of the second mission to try to restart the Sun.



Yeah, totally preposterous, I know, but some movies can still be great even when they do not even have one toe left in reality.

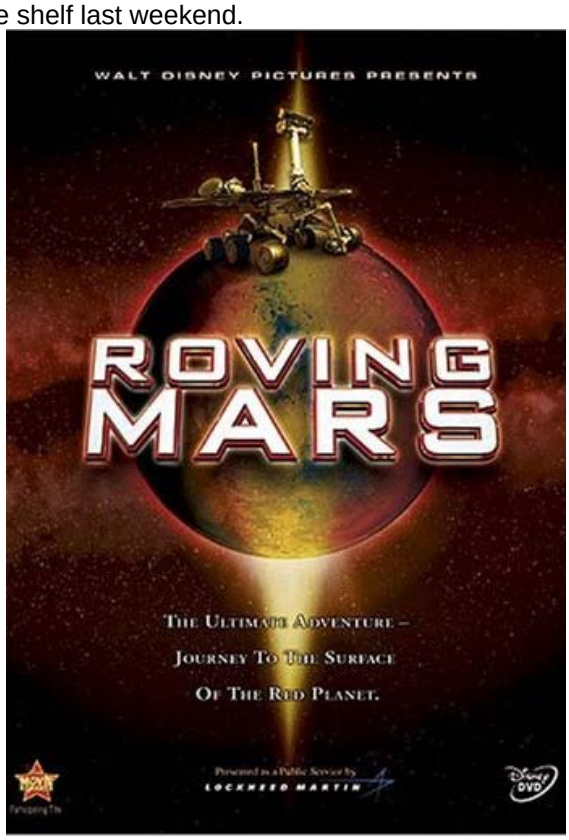
The movie started out reasonably well. The computer-generated special effects are truly amazing. The space ship is essentially a long series of segments behind a huge gold covered shield. The crew is fairly well developed and I did not have a problem with the acting.

I enjoyed this movie until perhaps the last half hour. There were good action scenes, excellent extravehicular activity to watch and the sound effects were well done. Then it happened. As a podcast review of this movie that I listened to stated, “Then Freddy Kruger showed up.” Yeah, the film took on an evil twist that was totally unnecessary.

I don’t want to totally discourage you from watching it if you are a serious science fiction fan. It was fun for most of the movie. But there was no need to give it an evil presence. So watch it for the great special effects, the reasonably done story and action, then turn it off before the last half hour and pretend it had a happy ending.

The next movie we watched has been shown on the Science Channel and we had seen some parts of it before falling asleep on a work night. But the experience was vastly improved without commercials and with the clarity of a DVD.

The movie is called *Roving Mars*, and as you probably can figure out, it is a documentary about the robotic rovers that NASA sent to the Red Planet. It was released on DVD last July but I just saw it on the video store shelf last weekend.



There is footage of the development of the rovers and excellent computer graphics of the rovers in action on Mars. Paul Newman narrates the introduction to the movie, and Steve Squyres, the lead scientist of the project, narrates most of the movie.

The musical score is by Phillip Glass, a popular modern composer. It is well matched to the documentary.

If you have interest in the NASA project on Mars I highly recommend this DVD. It is very well done and the 40 minute length goes by quickly.

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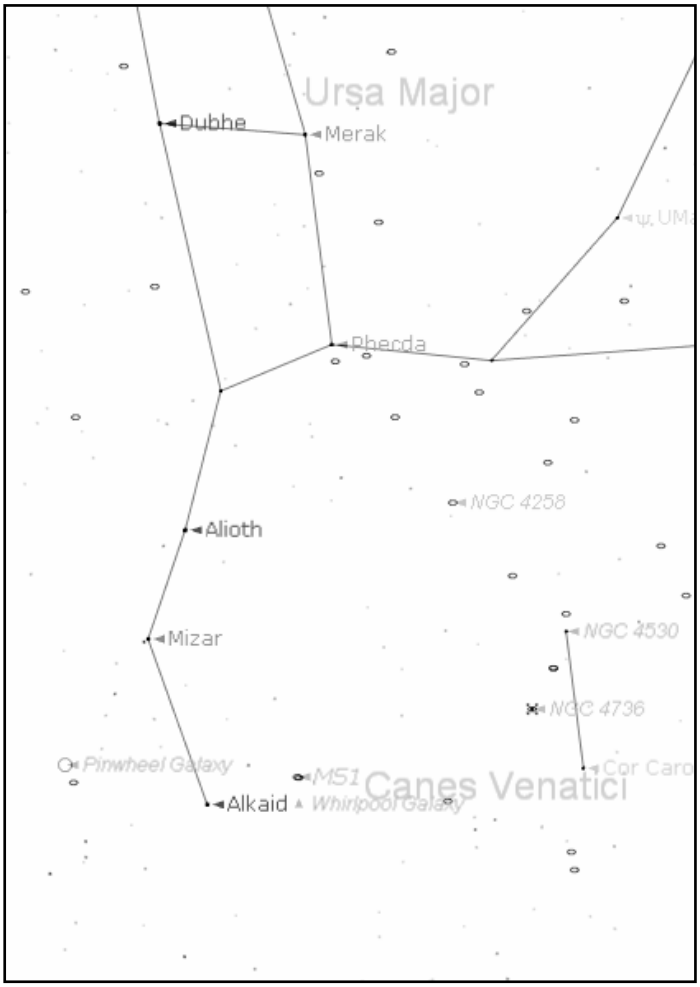
Through the Eyepiece: M51, The Whirlpool Galaxy

by Don Knabb, CCAS Observing Chair

As we move into spring and the handle of the Big Dipper is rising higher in the sky, one of the few galaxies whose spiral structure can be glimpsed in a backyard telescope is also rising into good viewing position. M51, the Whirlpool Galaxy, can be seen in March at a reasonable height in the eastern sky around 10 or 11 p.m. As seen at the bottom of the sky map below, M51 is under Alkaid, the star at the end of the handle of the Big Dipper, the asterism that makes up part of the constellation Ursa Major.



Sky map: *Starry Night Enthusiast* Version 5.8.2

To see the spiral structure of M51 you need a fairly large telescope, preferably 8 inches or larger. But the true magnificence of M51 only shows up in long exposure photographs such as this one taken by the Hubble Space Telescope.

Credit: NASA (Hubble Space Telescope)

No, you won't see anything that looks remotely like the photograph above, but knowing that the photons being perceived by your eye left the Whirlpool Galaxy 27 million years ago makes whatever you do see amazing.

Wait for a night when the Moon is not visible in the sky, or is just a sliver setting in the west. Try different eyepieces until you find the best image. Averted vision is a good tool in our Chester County skies to help you pick out these faint and fuzzy objects since light pollution will make this dim object fade quite a bit. Take your time and give your eyes the chance to adjust to the dark skies.

The Whirlpool Galaxy was discovered by Charles Messier in 1773 when observing a comet, and described it as a "very faint nebula, without stars." Its companion galaxy, NGC 5195, was discovered in 1781 by Pierre Méchain. It was however not until 1845 that the Whirlpool became the first galaxy to be recognized as a spiral. This was achieved by Lord Rosse employing a 72-inch reflecting telescope which he constructed at Birr Castle, Ireland.

Most astronomers feel that the pronounced spiral structure is a result of M51's current encounter with its neighbor, NGC 5195. Due to this interaction, the gas in the galaxy was disturbed and compressed in some regions, resulting in the formation of new young stars.

You can try to find M51 with binoculars on a dark night, but wait until later this spring when it will be higher in the sky. This sounds like a good target for our March and April observing sessions at Brandywine Valley Association!

Information sources:

Dickinson, Terence 2006. *Nightwatch: A Practical Guide toViewing the Universe*. Buffalo, NY. Firefly Books

Hewitt-White, Ken. *Night Sky Magazine*, The Whirlpool Galaxy

http://www.seds.org/messier/m/m051.html

http://en.wikipedia.org/wiki/Messier_51

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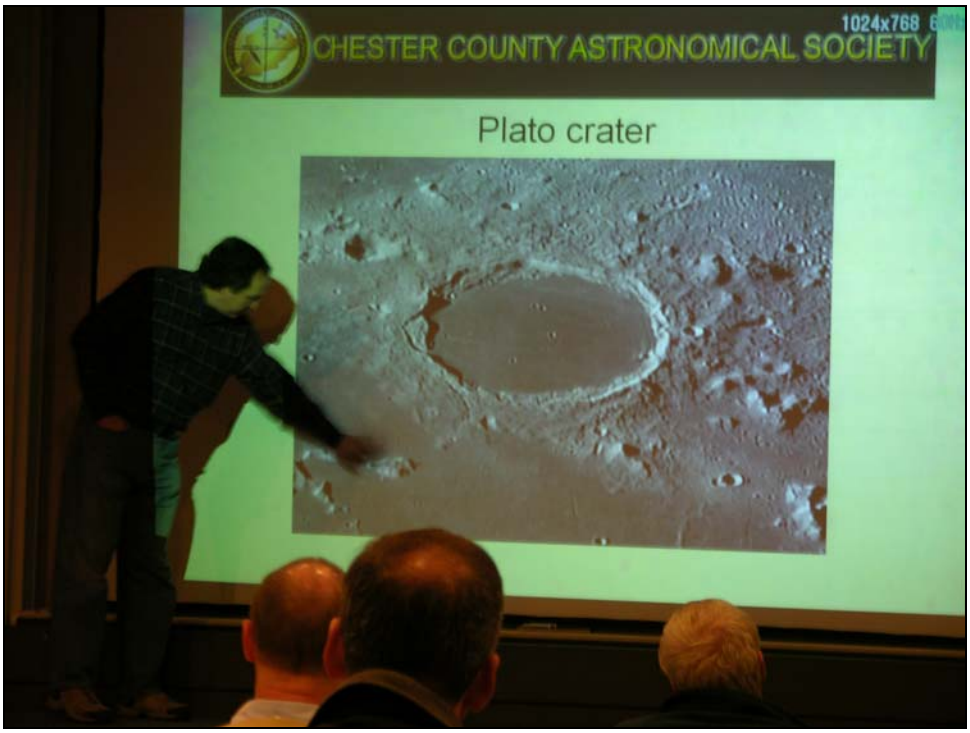
Backyard Observing Classes Begin

By Kathy Buczynski

On February 5, 2008 the Education Committee started the new and improved Backyard Observing Classes. First up was Jim Anderson who tackled "How to Prepare for Observing" with knowledge and enthusiasm. Jim has been observing for quite some time and knows of what he speaks. The students asked pointed questions and they were handled smartly.

For the next class, "The Moon," it was Jim again. Here's where Jim's observing expertise really paid off. Jim is the Society's first Lunar Award winner; our first "Certified Lunatic." Many topics about the Moon were covered, including what to observe naked eye, with a telescope or with binoculars. Jim covered some specific craters like Plato and Clavius and explained why some craters were flat in their interior and some were not.



The Sun and the Moon must have known Jim was giving this talk because the next night they talked the Earth into the getting in the way and giving us a Lunar Eclipse. Luckily the clouds parted just in time.

That's Saturn to the left and a bit below the Moon.

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NASA Space Place

Invisible Spiral Arms

By Patrick L. Barry

At one time or another, we've all stared at beautiful images of spiral galaxies, daydreaming about the billions of stars and countless worlds they contain. What mysteries—and even life forms—must lurk within those vast disks?

Now consider this: many of the galaxies you've seen are actually much larger than they appear. NASA's Galaxy Evolution Explorer, a space telescope that "sees" invisible, ultraviolet light, has revealed that roughly 20 percent of nearby galaxies have spiral arms that extend far beyond the galaxies' apparent edges. Some of these galaxies are more than three times larger than they appear in images taken by ordinary visible-light telescopes.

"Astronomers have been observing some of these galaxies for many, many years, and all that time, there was a whole side to these galaxies that they simply couldn't see," says Patrick Morrissey, an astronomer at Caltech in Pasadena, California, who collaborates at JPL.

The extended arms of these galaxies are too dim in visible light for most telescopes to detect, but they emit a greater amount of UV light. Also, the cosmic background is much darker at UV wavelengths than it is for visible light. "Because the sky is essentially black in the UV, far-UV enables you to see these very faint arms around the outsides of galaxies," Morrissey explains.

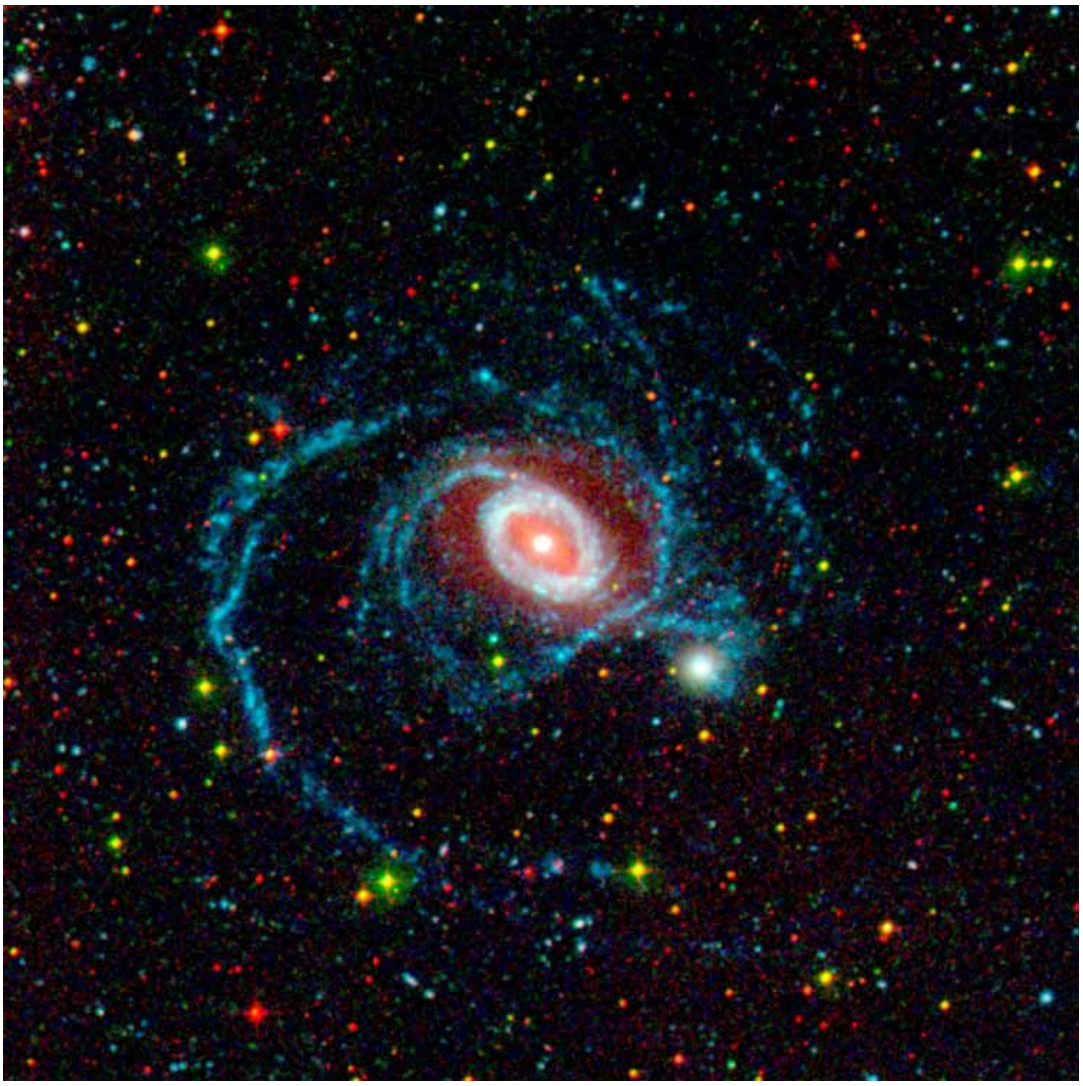
These "invisible arms" are made of mostly young stars shining brightly at UV wavelengths. Why UV? Because the stars are so hot. Young stars burn their nuclear fuel with impetuous speed, making them hotter and bluer than older, cooler

stars such as the sun. (Think of a candle: blue flames are hotter than red ones.) Ultraviolet is a sort of “ultra-blue” that reveals the youngest, hottest stars of all.

“That's the basic idea behind the Galaxy Evolution Explorer in the first place. By observing the UV glow of young stars, we can see where star formation is active,” Morrissey says.

The discovery of these extended arms provides fresh clues for scientists about how some galaxies form and evolve, a hot question right now in astronomy. For example, a burst of star formation so far from the galaxies' denser centers may have started because of the gravity of neighboring galaxies that passed too close. But in many cases, the neighboring galaxies have not themselves sprouted extended arms, an observation that remains to be explained. The Galaxy Evolution Explorer reveals one mystery after another!

“How much else is out there that we don't know about?” Morrissey asks. “It makes you wonder.”



In this image of galaxy NGC 1512, red represents its visible light appearance, the glow coming from older stars, while the bluish-white ring and the long, blue spiral arms show the galaxy as the Galaxy Evolution Explorer sees it in ultraviolet, tracing primarily younger stars. (Credit: NASA/JPL-Caltech/DSS/GALEX).

Spread the wonder by seeing for yourself some of these UV images at **www.galex.caltech.edu**.

Also, Chris Martin, principle scientist for Galaxy Evolution Explorer —or rather his cartoon alter-ego—gives kids a great introduction to ultraviolet astronomy at: **spaceplace.nasa.gov/en/kids/live#martin**.

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

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MIRROR GRINDING CLASS

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:

www.POLCouncil.org

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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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Another Good Outdoor Lighting Website

http://www.greenearthlighting.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"!

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New Astronomy Store Opens in Manayunk

Spectrum Scientifics

www.spectrum-scientifics.com

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:	Don Knabb 610-436-5702
Newsletter:	Jim Anderson 610-857-4751
Librarian:	Linda Lurcott Fragale 610-269-1737
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. If you need to renew, you can mail your check, made out to "Chester County Astronomical Society," to:

Bob Popovich
416 Fairfax Drive
Exton, PA 19341-1814

Phone: 610-363-8242
e-mail: B2N2@verizon.net

Sky & Telescope Magazine Group Rates

Subscriptions to this excellent periodical are available through the CCAS at a reduced price of **$32.95,** much less than the newsstand price of $66.00, and also cheaper than individual subscriptions ($42.95)! Buying a subscription this way also gets you a 10% discount on other Sky Publishing merchandise.

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If you have **any** questions call Bob first **(610-363-8242).**

Astronomy Magazine Group Rates

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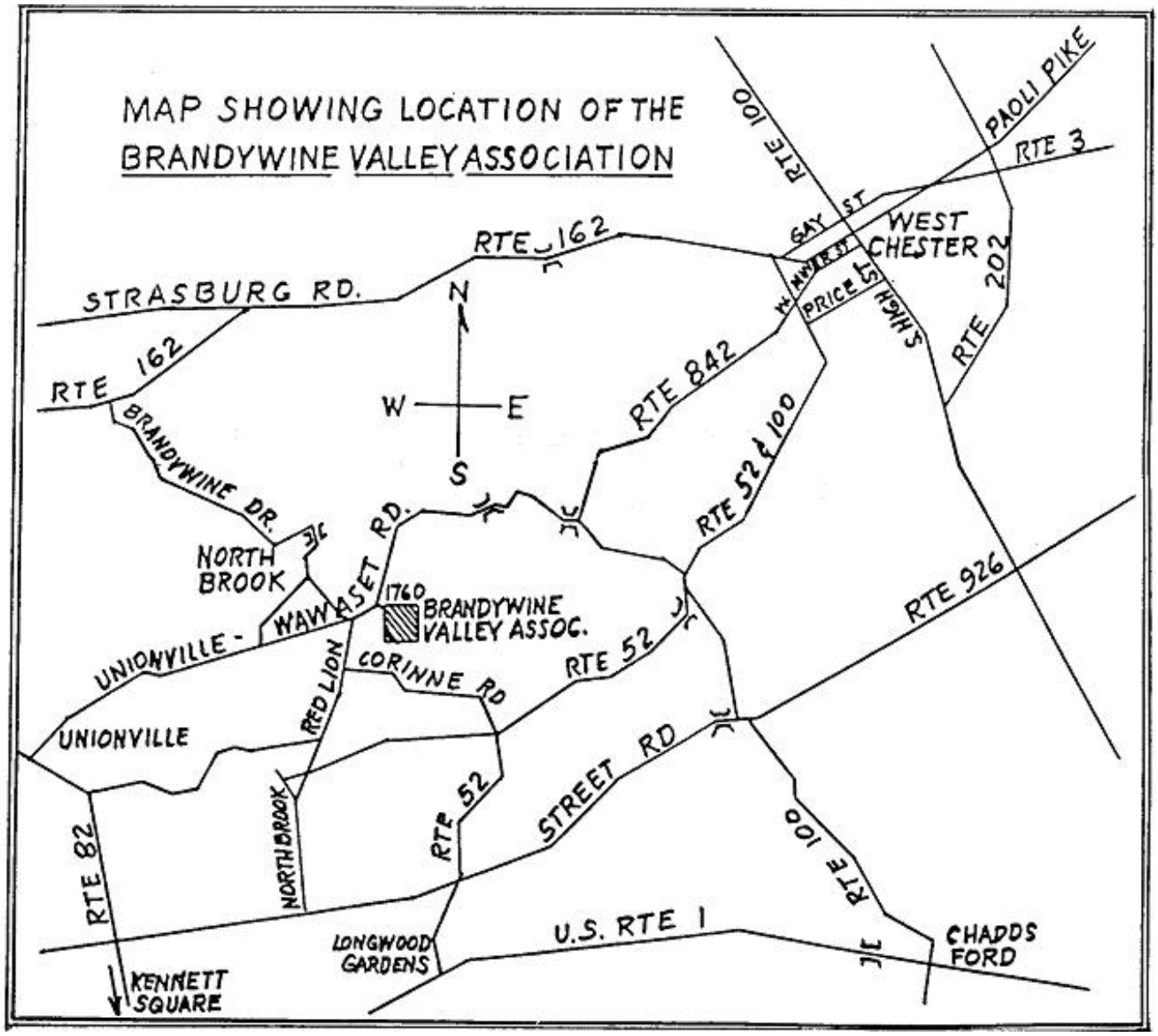
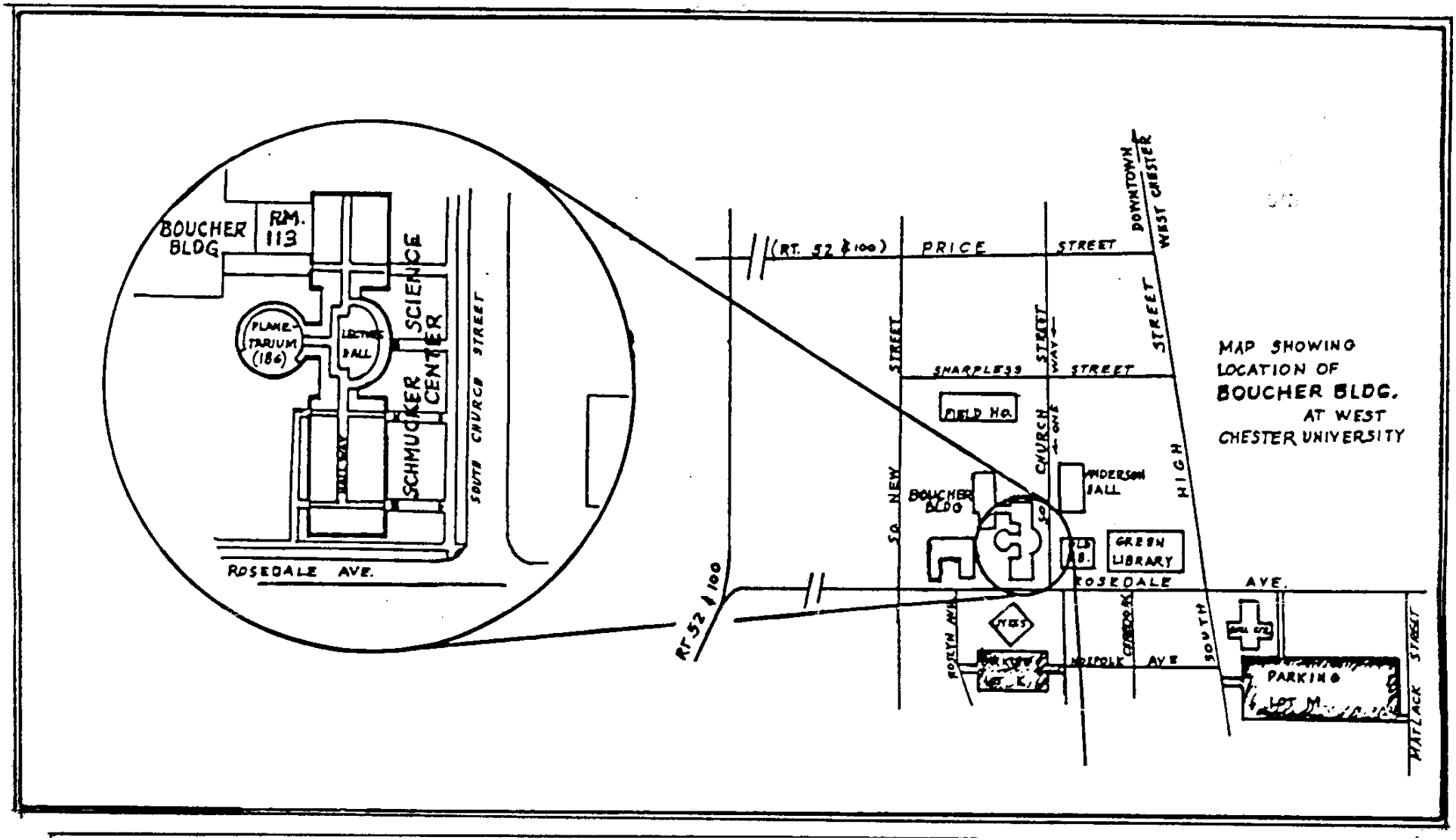


To get to the Myrick Conservation Center of the Brandywine Valley Association from West Chester, go south on High Street in West Chester past the Courthouse. At the next traffic light, turn right on Miner Street, which is also PA Rt. 842. Follow Rt. 842 for about 6 miles. To get to the observing site 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.