



# Observations

A Monthly Publication Of The  
CHESTER COUNTY ASTRONOMICAL SOCIETY

Vol. 32, No. 3 **Three-Time Winner of the Astronomical League's Mabel Sterns Award** ☼ 2006, 2009 & 2016 March 2024

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## Sagittarius C Imaged by NIRCcam



Part of an image captured by JWST's NIRCcam of the center of the Milky Way Galaxy. Image credit: [Webb Space Telescope](#)

## Membership Renewals Due

03/2024	Angelini DellaPenna Fulton Han Rainville Sterrett Zibinski
04/2024	Erickson Hepler Kataria McCabe Miles Richey Richter Rossomando Sah
05/2024	Allerton Bentley Blessing Fletcher Kagel Malkan Massi, Jr. Mulhall O'Hara Ostanek Quinn

## March 2024 Dates

- 3rd** • Antares 0.4° south of Moon around 3:16 a.m. EST.
- 3rd** • Last Quarter Moon, 10:23 A.M. EST.
- 10th** • New Moon, 5:00 a.m. EDT.
- 11th** • Mercury, Jupiter and the Moon line up this evening. Also, double shadows on Jupiter.
- 13th** • Jupiter 3.6° south of the Moon at 8:02 p.m. EDT.
- 14th** • Pleiades Star Cluster (M45) 0.4° north of Moon at 9:45 p.m. EDT.
- 17th** • First Quarter Moon, 12:10 a.m. EDT.
- 25th** • Penumbral Lunar Eclipse (mag = 0.956) at 2:13 a.m. EDT.
- 25th** • Full Moon, 3:00 a.m. EDT.



## CCAS Upcoming Nights Out

In addition to our monthly observing sessions at the Myrick Conservancy Center, BRC (for directions, see pg. 9), CCAS has several special "nights out" scheduled over the next few months. Members are encouraged to help out during these events any way they can. See below for more information.

- ☼ Friday, March 29, 2024 - Star Party at Tyler Arboretum, Media, PA. The event is scheduled 8 p.m. to 10 p.m. EDT.
- ☼ Sunday, April 14, 2024 - Observing Event at Sacred Heart Academy, Bryn Mawr, PA. The event is scheduled 7:15 to 9:15 p.m. EDT.
- ☼ Friday, April 26, 2024 - Observing Event with Atglen Public Library at Wolf's Hollow Park, 7:30 to 9:30 p.m. EDT.
- ☼ Wednesday, May 1, 2024 - Walk With the Third Quarter Moon at Paoli Battlefield Park, Malvern, PA. The event is scheduled 7:30 to 9:30 p.m. EDT.

For more information about future observing opportunities, contact our [Observing Chair](#), Michael Manigly.

## Winter/Spring Society Events

### March 2024

**8th** • CCAS Monthly Observing Session, Myrick Conservancy Center, Brandywine Red Clay Alliance. The observing session is from 7:00 p.m. to 9:00 p.m. EDT.

**10th** • [Start Daylight Saving Time](#) - Set Clocks Ahead 1 Hour at 2:00 a.m. ET.

**12th** • CCAS Monthly Meeting, in person (as well as via Zoom) at West Chester University's Merion Science Center, Room 113. Member meet & greet, 7:00-7:30 pm. Meeting starts at 7:30 pm. CCAS Member Speaker: Dr. Don Miller, NASA Ambassador & CCAS Member, "Could Extraterrestrial Life Exist in the Universe?—Scientific & Philosophical Considerations (Part 2)."

**19th** • Vernal Equinox (northern spring/southern autumn begins), occurs at 11 p.m. EDT. The Sun will shine directly on the equator and there will be nearly equal amounts of day and night throughout the world.

**20th** • Open call for articles and photographs for the April 2024 edition of [Observations](#).

**20th** • Introduction to Astronomy Class: Spaceship Earth—the Sun and its effects on the Earth, Peirce Middle School, West Chester, 7 p.m. EDT.

**26th** • Deadline for newsletter submissions for the April 2024 edition of [Observations](#).

**26th** • West Chester University Planetarium Show: "Fire In The Sky," in the Mather Planetarium. The show starts at 7 p.m. and runs approximately one hour in length. For more information and reservations, visit [WCU Public Planetarium Shows](#).

**27th** • Introduction to Astronomy Class: Our Moon—Phases and Faces, Peirce Middle School, West Chester, 7 p.m. EDT.

**29th** • CCAS Special Observing Event: Star Party at Tyler Arboretum, Media, PA. The event is scheduled 8 p.m. to 10 p.m. EDT.

### April 2024

**3rd** • Introductory Astronomy Class: The Other Kids on the Block—The Planets. Class is in-person at Pierce Middle School, West Chester, PA, starting at 7:00 p.m. EDT.

**8th** • Total Solar Eclipse. Hibernia Park or Exton Park.

**9th** • CCAS Monthly Meeting, in person (as well as via Zoom) at West Chester University's Merion Science Center, Room 113. Member meet & greet, 7:00-7:30 pm. Meeting starts at 7:30 pm. Guest Speaker: TBA.

**12th** • CCAS Monthly Observing Session, Myrick Conservancy Center, Brandywine Red Clay Alliance. The observing session is from 7:00 p.m. to 9:00 p.m. EDT.

**14th** • Observing Event at Sacred Heart Academy, Bryn Mawr, PA. The event is scheduled 7:15 to 9:15 p.m. EDT.

**17th** • Introductory Astronomy Class: Observing Basics, Star Charts and Planetarium Software. Class is in-person at Pierce Middle School, West Chester, PA, starting at 7:00 p.m. EDT.

**19th** • West Chester University Planetarium Show: "Citizen Science," in the Mather Planetarium. The show starts at 7 p.m. and runs approximately one hour in length. For more information and reservations, visit [WCU Public Planetarium Shows](#).

**20th** • Open call for articles and photographs for the March 2024 edition of [Observations](#).

**24th** • Introductory Astronomy Class: Observing Equipment, Binoculars, and Telescopes. Class is in-person at Pierce Middle School, West Chester, PA, starting at 7:00 p.m. EDT.

**26th** • Deadline for newsletter submissions for the March 2024 edition of [Observations](#).

**26th** • Observing Event with Atglen Public Library at Wolf's Hollow Park, Atglen, PA. The event is scheduled 7:30 to 9:30 p.m. EDT.

## February 2024 Monthly Meeting Minutes

by Bea Mazziotta, CCAS Secretary

- The February 2024 meeting was held on Tuesday, February 13, 2024.
- Owing to inclement weather the February 2024 meeting was changed to YouTube and Zoom only. Dave Hockenberry, CCAS president welcomed members and guests to the virtual meeting.
- Mike Manigly, Observing Chair, informed attendees of the upcoming March observing events and star parties.
- Dave also announced that the annual Night School program would be starting its 2024 term on Wednesday March 20th at Pierce Middle School in West Chester Park. It's part of Chester County's Lifelong Learning Program.
- Go to [CCAS.US](#) for details on upcoming events and night school registration.
- Bruce Ruggeri, Program Chair, gave updated information on the club Scholarship Fund and requested donations. He then introduced the evening's speaker, Dr. Ashley Spindler.
- Dr. Spindler is a Senior Lecturer in Astronomy and Data Science at the University of Hartfordshire in the UK. She is also a member of the university's Center for Astrophysics Research.
- Her presentation, entitled AI, Machine Learning and Astronomy - Teaching Computers to Study the Stars, highlighted the field of astronomy's pressing need for help analyzing an unprecedented influx of data. The rapid development and deployment of newer and better telescopes has led to a data overload problem. One possible way to deal with 'too much data' is to teach computers how to interpret the data. Based on current capabilities, our lack of understanding of 'how computers learn' and the misinformation issues we've seen with some current technology, we may be further from real AI that we've been led to believe. And also, as with most new technologies, the potential for unexpected harmful consequences is real and has to be addressed during the development phase.

## March 2024 CCAS Meeting Agenda

by Bruce Ruggeri, CCAS Program Chair

Our next meeting will be held on March 12, 2024, in person at West Chester University's Merion Science Center, Room 113. The Science Center is located at 720 S. Church St., West Chester, PA. CCAS Member Speaker: Dr. Don Miller, NASA Ambassador & CCAS Member, "Could Extraterrestrial Life Exist in the Universe?—Scientific & Philosophical Considerations (Part 2)."

Please note that inclement

weather or changes in speakers' schedules may affect the program. In the event there is a change, CCAS members will be notified via e-mail with as much advance notice as possible.

As for future meetings, we are looking for presenters for our 2024-2025 season and beyond. If you are interested in presenting, or know someone who would like to participate, please contact me at [programs@ccas.us](mailto:programs@ccas.us).

## March 2024 Monthly Meeting Presenter Bio

by Bruce Ruggeri, CCAS Program Chair

Our March CCAS meeting (in person and Zoom) is on Tuesday, March 12th, commencing at 7:30 pm ET.

Our speaker is Dr. Don Miller, a fellow CCAS member and NASA Solar System Ambassador. Don will be providing a combined presentation of his initial presentation (part 1) given on January 9th (when our virtual CCAS meeting was cut short due to severe storm-related power outages) along with the planned second part of Don's presentation to be given in March. The CCAS meeting will commence at 7:30 pm and the presentation will commence at approximately 8:00 pm ET. Our meetings are held at West Chester University's (WCU) Merion Science Center, Room 113. The Science Center is located at 720 S. Church St.

The presentation title, synopsis and bio sketch for Dr. Miller are provided below:

**Title:** The Search for Intelligent Life in the Universe

**Synopsis:** For millennia, humans have wondered if we are alone in the universe; which remains one of mankind's greatest unanswered questions. The search for extraterrestrial intelligence (SETI) began more than 50 years ago by listening for signals from beyond the earth. With no clear evidence discovered to date for an intelligent signal from a non-human species, does this mean that we are alone?

This program will review two aspects of this topic: a) how likely is it that humankind is alone in the universe; and b) review our ongoing programs which are searching for life beyond the Earth.

The first part of the program will review what we know about the search for extraterrestrial, intelligent, civilizations and the parameters that would predict our chances of detecting such a

signal. The improvement in our understanding of the stars, the galaxy, and exoplanets has allowed us to update the old estimations of the probability for success with SETI.

The second part of the program will focus on what NASA and other space agencies are doing to actively search for life in the universe, through both spacecraft missions and space telescopes. A number of missions have already been completed, others are ongoing currently, and also plans exist for a wide range of future programs.

**Biosketch:** Dr. Don Miller is retired from a career in pharmaceutical research covering a range of disease areas from oncology to neurology. During his career, he led the team that developed the first anti-TNF agent which became Enbrel and also the team that developed the world's first antibody targeted chemotherapeutic (Mylotarg); for the latter, he received recognition from the American Chemical Society as a "Hero in Chemistry" and the American Institute of Chemical Engineering as Industrial Researcher of the Year. Don holds B.S. and Ph.D. degrees in Chemical Engineering.

Don has been interested in science and the stars ever since he had a night out with his father at age 6 looking at the sky and discussing the possibilities of the universe. He followed every aspect of the Apollo and subsequent programs. He saved up his money as a young kid to purchase an 8-inch reflector telescope and later as an adult

*(Continued on page 7)*

## Spring 2024 Introductory Astronomy Classes

by Dennis O'Leary, CCAS Education Co-Chair

CCAS has partnered with [Chester County Lifelong Learning](#) to offer a six-week program that meets on Wednesday nights. The one-hour classes are in-person at Pierce Middle School, West Chester, PA, starting at 7:00 p.m. ET. The cost for the six-week course is \$64.00 per person.

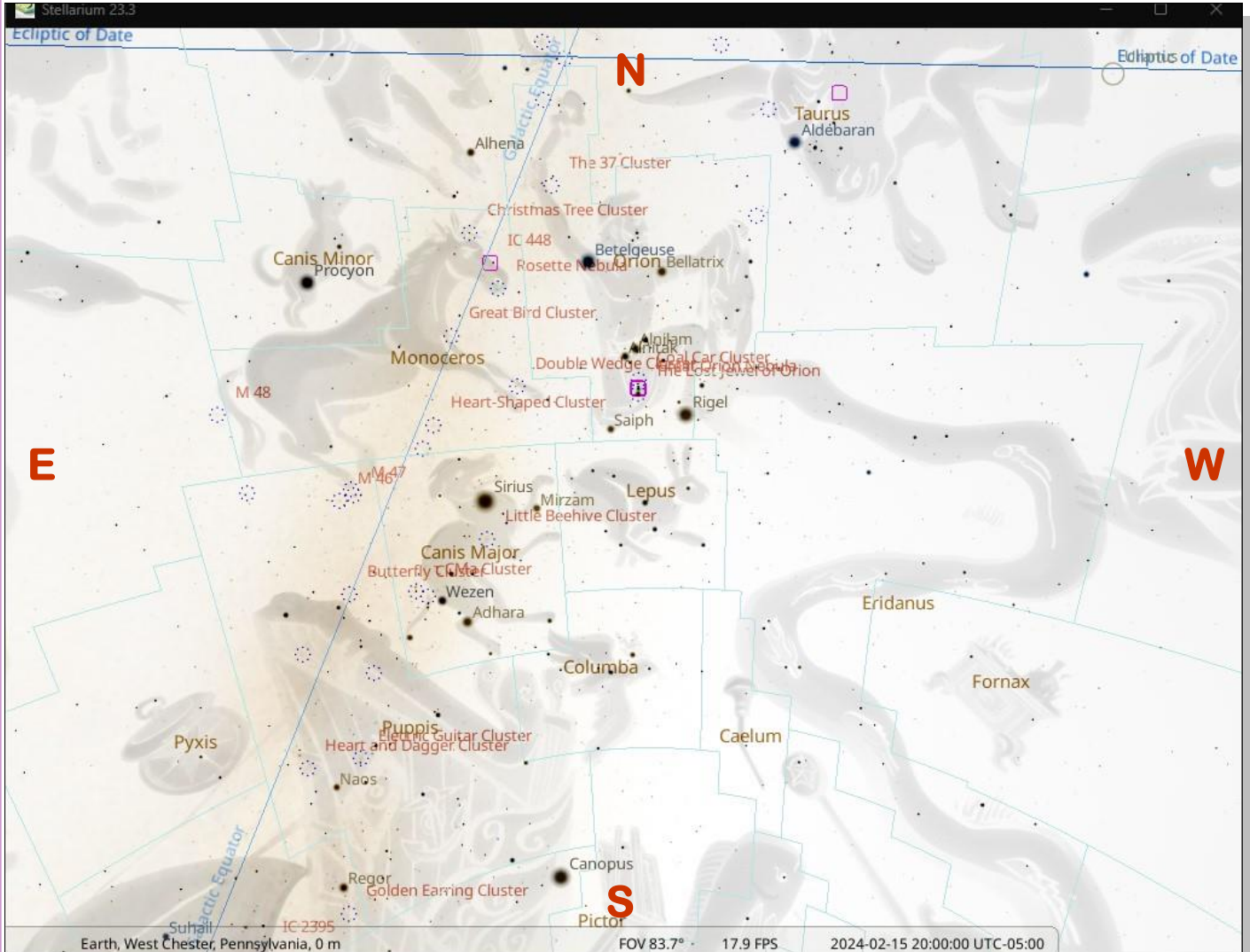
The classes run from March 20, 2024, through May 1, 2024 (No classes the week of April 8th). Visit the Chester County Lifelong Learning website to [register online](#).

- March 20th: Spaceship Earth—the Sun and its effects on the Earth
- March 27th: Our Moon—Phases and Faces
- April 3rd: Other Kids on the Block—the Planets
- April 17th: Observing Basics, Star Charts and Planetarium Software
- April 24th: Observing Equipment, Binoculars, and Telescopes
- May 1st: Beyond Naked Eye Observing (deep sky stuff)

# The Sky Over Chester County

March 15, 2024 at 8:00 p.m. ET

Note: This screen capture is taken from Stellarium, the free planetarium software available for download at [www.stellarium.org](http://www.stellarium.org).



Date	Civil Twilight Begins	Sunrise	Sunset	Civil Twilight Ends	Length of Day
03/01/2024	6:09 a.m. EST	6:36 a.m. EST	5:35 p.m. EST	6:23 p.m. EST	11h 19m 26s
03/15/2024	6:47 a.m. EDT	7:14 a.m. EDT	7:11 p.m. EDT	7:38 p.m. EDT	11h 56m 44s
03/31/2024	6:20 a.m. EDT	6:48 a.m. EDT	7:27 p.m. EDT	7:55 p.m. EDT	12h 39m 31s

Moon Phases					
Last Quarter	03/03/2024	10:23 a.m. EST	New Moon	03/10/2024	5:00 a.m. EDT
First Quarter	03/17/2024	12:10 a.m. EDT	Full Moon	03/25/2024	3:00 a.m. EDT

## March 2024 Observing Highlights

by Michael Manigly, CCAS Observing Chair

3	<b>Antares 0.4° south of Moon around 3:16 a.m. EST and 3 Juno at opposition (Mag = 8.7).</b>
11	<b>Mercury, Jupiter and the Moon line up this evening. Also, double shadows on Jupiter.</b>
13	<b>Jupiter 3.6° south of the Moon at 8:02 p.m. EDT.</b>
14	<b>Pleiades Star Cluster (M45) 0.4° north of Moon at 9:45 p.m. EDT. Binoculars will aid in seeing. Jupiter and Uranus approximately 4° below the Moon this evening.</b>
15	<b>Aldebaran stands to the lower left of the Moon at nightfall.</b>
18	<b>Lunar Straight Wall this evening.</b>
19	<b>Pollux sits to the left of the Moon at nightfall with Castor to the upper left. The Vernal Equinox (start of spring) is at 10:07 p.m. EDT.</b>
20	<b>Moon is located near the Beehive Cluster (M44).</b>
21	<b>Regulus 3.6° south of the Moon at 11:46 p.m. EDT.</b>
25	<b>Penumbral Lunar Eclipse (mag = 0.956) at 2:13 a.m. EDT. Spica poses below the Moon around 11:00 p.m. EDT.</b>

**The best sights this month:** March finds Venus and Mars viewable at morning twilight and Jupiter and Uranus at night with Mercury making a brief appearance. Multiple comets with 12P/Pons-Brooks and 144P/Kushida dominant in March. Still dressing for cold weather conditions, March is a great month to view the winter constellations and Messier/deep sky objects. See below for additional details. Asteroid 4 Vesta may be seen on the 16th when it appears south of the First Quarter Moon.

**Mercury** appears very low in the western sky at evening twilight, but sets by 7:00 p.m. ET. Best viewed after mid-month. The planet appears at its brightest on the 17th. The crescent Moon is nearby on the 11th.

**Venus** is the morning star in March and is extremely low in the southeast at morning twilight. It is joined by the waxing crescent Moon on the 8th and the planet has a close conjunction with Saturn on the 22nd.

**Mars** is extremely low in southeast at morning twilight during March. It is tiny in appearance and does not offer much to view.

**Jupiter** is low in the western sky at evening twilight and sets around 11 p.m. ET. Telescopic views this month include the planet's four Galilean Moons as well as many atmospheric features. The Great Red Spot shows up every other day and the two equatorial belts straddling the equator are clearly visible.

**Saturn** is not viewable during the month of March.

**Uranus** appears northeast of Jupiter at the start of March. The planet shines at mag 5.8 and is easily spotted with binoculars. The crescent Moon and Jupiter join the planet on the 13th.

**Neptune** is in solar conjunction on the 17th and is too close to the Sun to be seen most of the month. Sets around 8:30 p.m. ET.

**The Moon:** The Full Moon is on the 25th. This month's Full Moon is called the Maple Sugar Moon. Other names this month are the Sap Moon, Worm Moon and the Lenten Moon. It reaches its greatest southern declination (-28.5°) on the 5th and its greatest northern declination (+28.4°) on the 18th.

**Constellations:** Although still cold, March continues to be a great time for naked eye star gazing and constellation viewing. Look for Cancer, Canis Minor, and Lynx.

**Messier/deep sky:** March can be good for observing Messier/deep sky objects including the Beehive Cluster (M44). Prominent winter asterisms include the Winter Triangle (Sirius, Betelgeuse and Procyon which are the primary stars in the constellations Canis Major, Orion and Canis Minor and the Winter Hexagon, also known as the Winter Circle (Rigel in Orion, Aldebaran in Taurus, Capella in Auriga, Castor and Pollux in Gemini, Procyon in Canis Minor and Sirius in Canis Minor).

**Comets:** 12P/Pons-Brooks floats about 15° high in the western sky about 90 minutes after sunset. 144P/

*(Continued on page 14)*

## Through the Eyepiece: The Leo Triplet of Galaxies

by Don Knabb, CCAS Treasurer & ALCOR

The Leo Triplet, also known as the M 66 group, is a small group of galaxies in the constellation Leo the Lion. The galaxies are estimated to be about 35 million light years away.

The group consists of two Messier objects, M 65 and M 66, along with NGC 3628. All three galaxies are spiral galaxies, similar in structure to our own Milky Way. NGC 3628 is also known as the Hamburger Galaxy!

Messier 66, the largest and brightest member of the Leo Triplet, is roughly 95 light years across. It has an apparent magnitude of 8.9.

Messier 65 has a visual magni-

tude of 10.25. It is an intermediate spiral galaxy, poor in dust and gas, and shows little evidence of star formation.

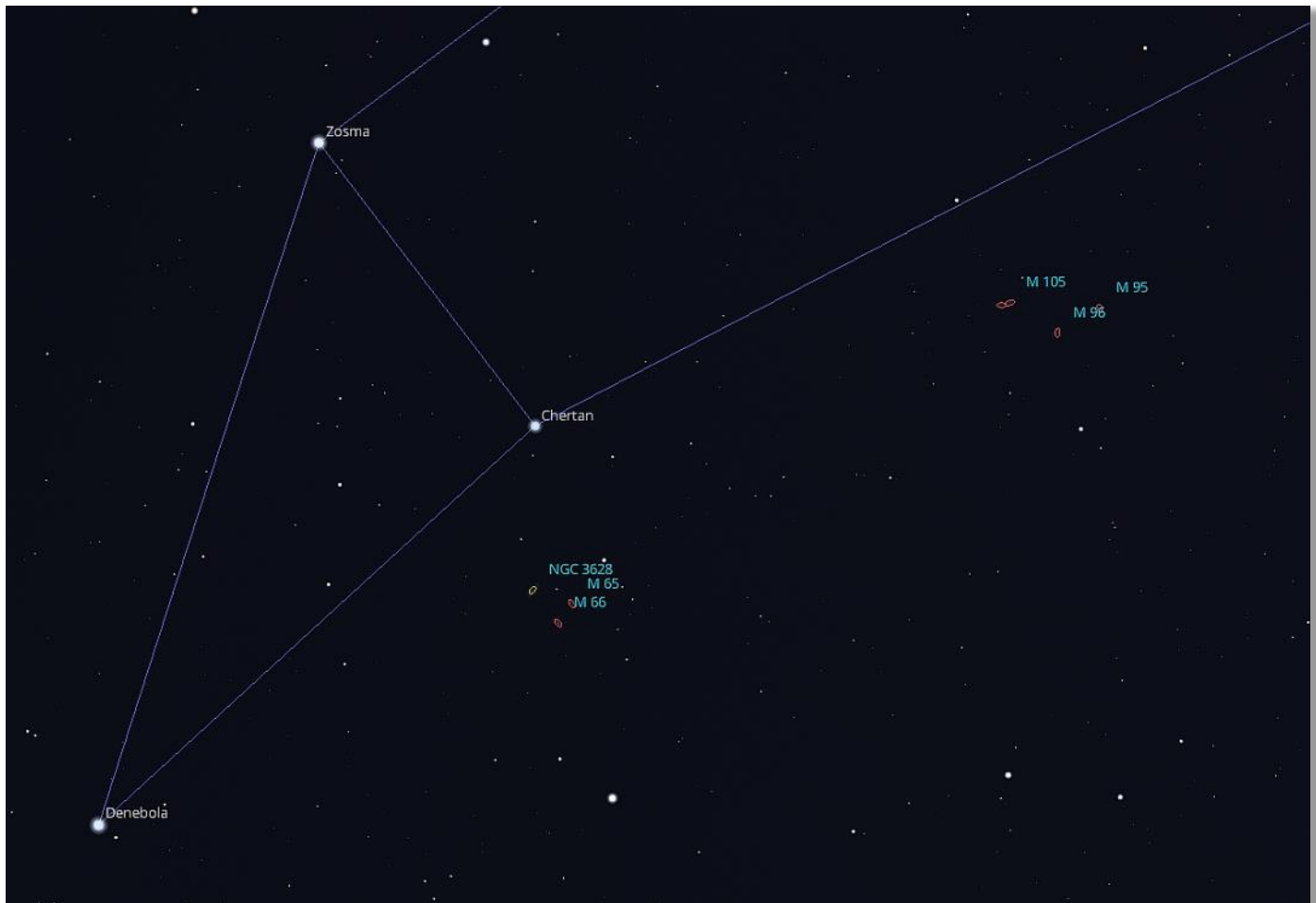
NGC 3628 is an unbarred spiral galaxy with a visual magnitude of 10.2. Seen edge-on, the galaxy appears transected by a broad band of dust that stretches along its outer edge, hiding the young stars in the galaxy's spiral arms.

One needs a telescope to see this group of galaxies from our Chester County skies, although at a dark sky site you should be able to just pick them out with a pair of large binoculars.

You can use the star chart below to find the Leo Triplet. This is a map of the back end of the constellation Leo the Lion.

Further east of the Leo Triplet is a group known as the M 96 group. The M 96 Group contains up to 24 galaxies, including the spiral galaxies Messier 95 and Messier 96, and the elliptical galaxy Messier 105. As the two groups are physically close, some sources identify the M 66 Group as part of the M 96 Group. The two groupings may in fact be separate parts of a considerably larger galaxy group.

*(Continued on page 7)*



*Sky map made with Stellarium, the free planetarium software*

## Eyepiece (Cont'd)



Photo credit: Hunter Wilson, <https://commons.wikimedia.org/wiki/File:LeoTripletHunterWilson.jpg>  
Creative Commons file

*(Continued from page 6)*

With a telescope you should be able to see these Messier objects shown on the chart, M95, M96 and M105 to the upper right of the Leo Triplet.

The photo above shows the three galaxies of the Leo Triplet. M 65 is at the top right, M 66 at the bottom right, and NGC 3628 is on the left. They all have a unique appearance because their galactic disks are tilted at different angles to our line of sight.

Leo the Lion and the Leo Triplet are ideally located in the spring sky for evening viewing. Let's put this unique telescopic sight on our list for our next observing session at Brandywine Red Clay Alliance!

Information credits:

- <http://www.seds.org/messier/more/m066gr.html>
- [https://en.wikipedia.org/wiki/Leo\\_Triplet](https://en.wikipedia.org/wiki/Leo_Triplet)
- <https://www.messier-objects.com/leo-triplet/>

## Speaker Bio (Cont'd)

*(Continued from page 3)*

moved on to an even larger telescope. He can frequently be found in his backyard or at star parties looking at the stars and sharing his love for space with the community. He has been a member of the San Francisco Sidewalk Astronomers, moved to Pennsylvania and joined the Chester County Astronomical

*(Continued on page 9)*

# NGC 4435 & NGC 4438—Two Spiral Lenticular Galaxies Known as “The Eyes”

by *Astronomical League*



Said to be one of the eeriest sights encountered in galaxy observing.



## NGC 4435 & 4438

### "The Eyes"—Two Spiral Lenticular Galaxies

#### Navigate to NGC 4435 & 4438

1. Find Beta Leonis (Denebola) and Epsilon Virginis (Vindemiatrix).
2. Draw a line from Beta to Epsilon.
3. M84 and M86 lie at the mid point of that line.
4. NGC 4435 & 4438 glow about 40 minutes east of M86.
5. In a 40 minute field, they appear as two eyes staring back in the blackness of space.

#### Bonus Galaxies:

The region abounds in galaxies: M84, M86, M87, and many fainter ones.

#### Recommended Aperture:

Not less than 10 inches. The larger, the better.

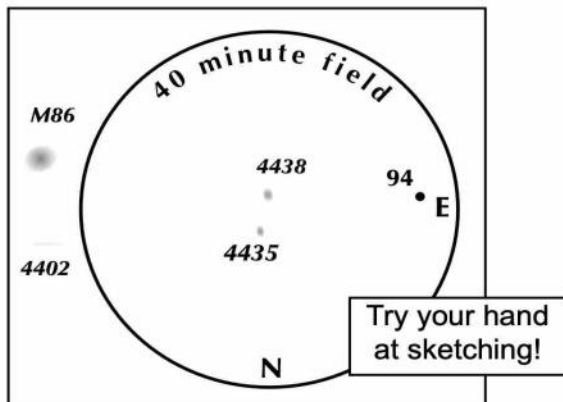
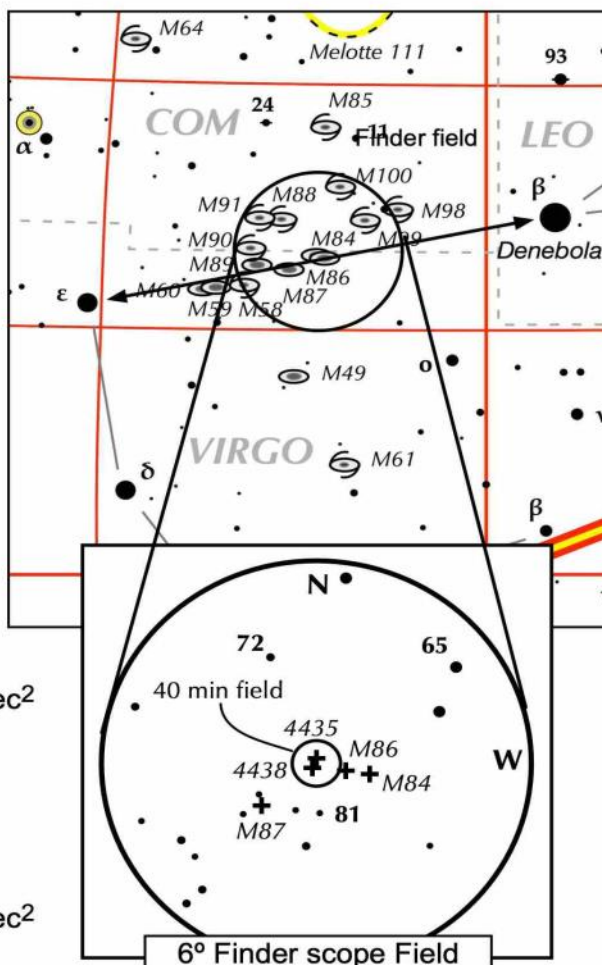
Yes, they do resemble two eyes staring at you from the blackness of space!

#### Published Characteristics for NGC 4435

Integrated magnitude: 11.7  
 Size: 2.8 min x 2.0 min  
 Surface brightness: 13.7 mag./min<sup>2</sup>, 22.6 mag./sec<sup>2</sup>  
 Position Angle: 10°  
 Distance: 52 million light-years

#### Published Characteristics for NGC 4438

Integrated magnitude: 10.6  
 Size: 8.6 min x 3.2 min (bright core, faint tails)  
 Surface brightness: 15.0 mag./min<sup>2</sup>, 24.0 mag./sec<sup>2</sup>  
 Position Angle: 20°  
 Distance: 52 million light-years



**Eyepiece Impressions:**  
**NGC 4435:** Very small, elusive. Uniform brightness. Use averted vision. Near NGC 4438 and located 25' east of M86. (6-inch Cass.; ACAC)  
 10 inch f/10 SCT, 125x: "NGC 4435 is slightly elongated with a bright center." JG  
**NGC 4438:** Extremely elongated, uniform brightness, very large. Use averted vision. Located 4' south of NGC 4435. (6-inch Cass.; ACAC)  
 10 inch f/10 SCT, 125x: "NGC 4438 is elongated with a bright center. Under careful observation, wispy outer regions are noticed." JG



## Speaker Bio (Cont'd)

(Continued from page 7)

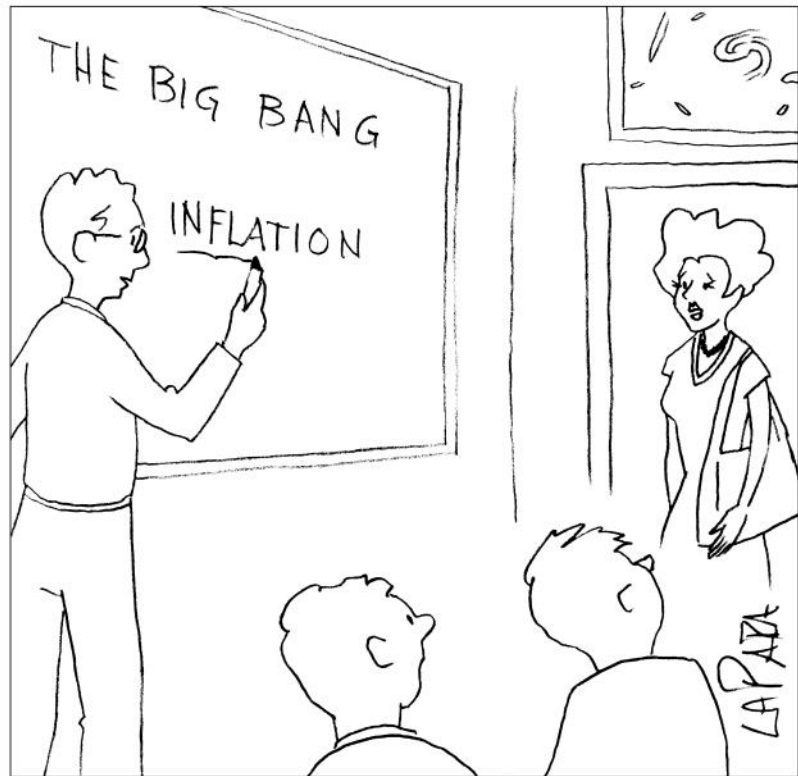
Society, traveled to Wyoming to see the total solar eclipse, traveled to northern Sweden to see the northern lights, and many national parks for their dark skies, plus great hiking.

One of his current activities is participating in the Astronomical Society of the Pacific's *Project Astro*, which brings hands-on space science to grade school children. Don is also a NASA Solar System Ambassador giving talks to all age groups about astronomy, NASA programs and space in general.

When Don is not doing astronomy related things, he loves hiking, exercise, cycling, trekking and traveling around the world, plus reading and cooking.

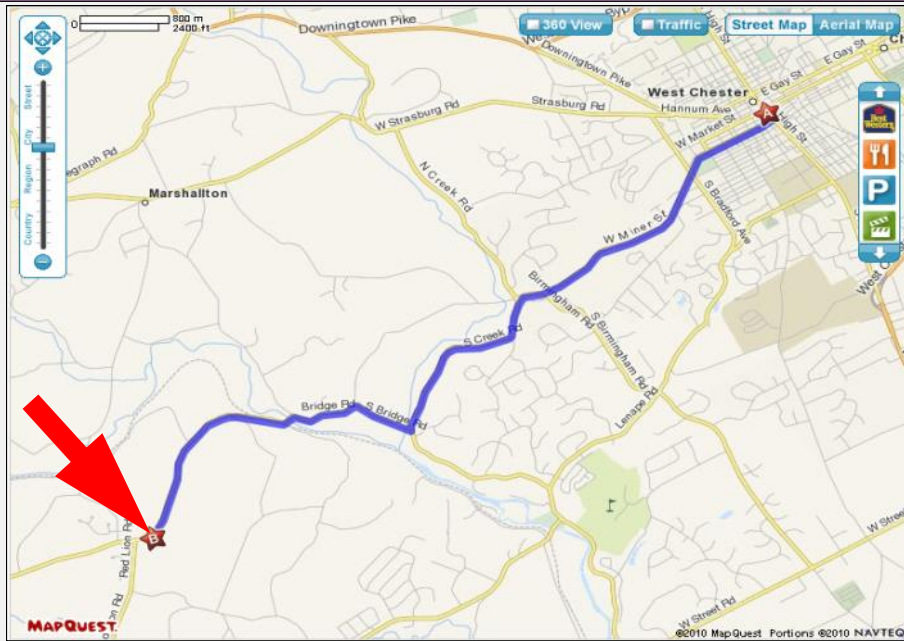
## Classic La Para

by Nicholas La Para



"ISN'T THIS COSMETOLOGY 101?"

## CCAS Directions



### Brandywine Red Clay Alliance

1760 Unionville Wawaset Rd  
West Chester, PA 19382  
(610) 793-1090

<http://brandywinewatershed.org/>

BRC was founded in 1945 and is committed to promoting and protecting the natural resources of the Brandywine Valley through educational programs and demonstrations for all ages.

### Brandywine Red Clay Alliance

The monthly observing sessions (held February through November) are held at the Myrick Conservation Center of the Brandywine Red Clay Alliance.

To get to the Myrick Conservation Center 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 BRC property, turn left 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 left through the gate and drive up the farm lane about 800 feet to the top of the hill. The observing area is on the right.

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).

## Night Sky Network: Constant Companions—Circumpolar Constellations, Part II

by Kat Troche

This article is distributed by the NASA Night Sky Network, a coalition of hundreds of astronomy clubs across the US dedicated to astronomy outreach.

Visit [nightsky.jpl.nasa.gov](https://nightsky.jpl.nasa.gov) to find local clubs, events, stargazing info and more.

As the seasons shift from Winter to Spring, heralding in the promise of warmer weather here in the northern hemisphere, our circumpolar constellations remain the same. Depending on your latitude, you will be able to see up to nine circumpolar constellations. This month, we'll focus on: **Lynx, Camelopardalis, and Perseus**. The objects within these constellations can all be spotted with a pair of binoculars or a small to medium-sized telescope, depending on your **Bortle scale** – the darkness



of your night skies.

- **Double Stars:** The area that comprises the constellation Lynx is famous for its multiple star systems, all of which can be separated with a telescope under dark skies. Some of the notable stars in Lynx

are the following:

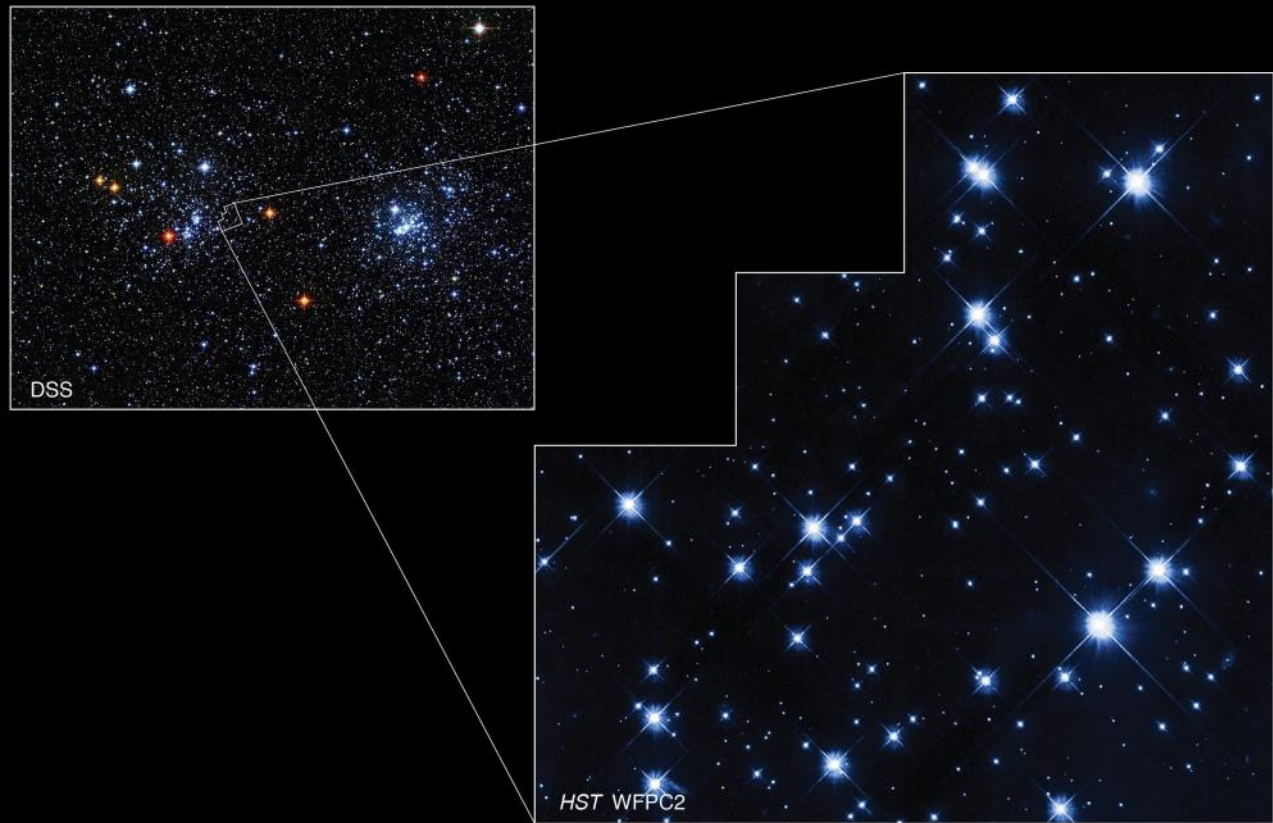
- **12 Lyncis** – a triple star that can be resolved with a medium-sized telescope.
- **10 Ursae Majoris** – a double star that was once a part of Ursa Major.
- **38 Lyncis** – a double star that is described as blue-white and lilac.
- **Kemble's Cascade:** This **asterism** located in Camelopardalis, has over 20 stars, ranging in visible magnitude (brightness) and temperature. The stars give the appearance of flowing in a straight line leading to the

*(Continued on page 11)*



*In the appearance of left to right: constellations Perseus, Camelopardalis, and Lynx in the night sky. Also featured: Cassiopeia as a guide constellation, and various guide stars. Credit: Stellarium Web*

## DOUBLE CLUSTER IN PERSEUS



*A ground-based image from the Digitized Sky Survey (DSS) in the upper left shows Caldwell 14, the Double Cluster in Perseus, with an outline of the region imaged by Hubble's Wide Field and Planetary Camera 2 (WFPC2). Ground-based image: Digitized Sky Survey (DSS); Hubble image: NASA, ESA, and S. Casertano (Space Telescope Science Institute); Processing: Gladys Kober (NASA/Catholic University of America)*

*(Continued from page 10)*

Jolly Roger Cluster (NGC 1502). On the opposite side of this constellation, you find the asterism **Kemble's Kite**. All three objects can be spotted with a pair of binoculars or a telescope and require moderate dark skies.

- **Double Cluster:** The constellation Perseus contains the beautiful Double Cluster, two open star clusters (NGC 869 and 884) approximately 7,500 light-years from Earth.

This object can be spotted with a small telescope or binoculars and is photographed by amateur and professional photographers alike. It can even be seen with the naked eye in very dark skies. Also in Perseus lies **Algol, the Demon Star**. Algol is a triple-star system that contains an eclipsing binary, meaning two of its three stars constantly orbit each other. Because of this orbit, you can watch the brightness dim

every two days, 20 hours, 49 minutes – for 10-hour periods at a time. For a visual representation of this, revisit [NASA's What's Up: November 2019](#).

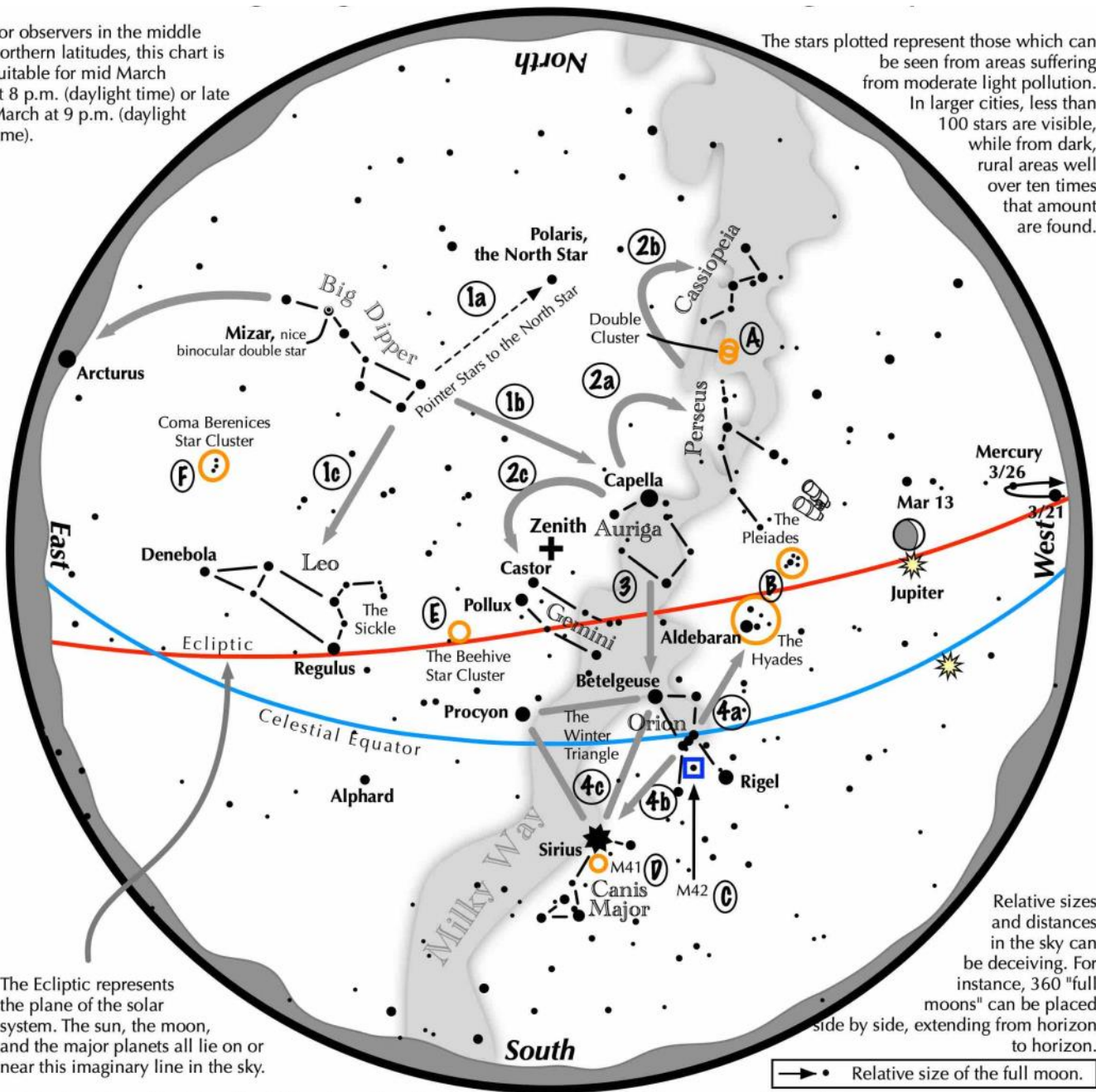
From constellations you can see all year to a once in a lifetime event! Up next, find out how you can partner with NASA volunteers for the April 8, 2024, total solar eclipse with our upcoming mid-month article on the [Night Sky Network](#) page through NASA's website!

# Navigating the Mid March 2024 Night Sky

by *Astronomical League*

For observers in the middle northern latitudes, this chart is suitable for mid March at 8 p.m. (daylight time) or late March at 9 p.m. (daylight time).

The stars plotted represent those which can be seen from areas suffering from moderate light pollution. In larger cities, less than 100 stars are visible, while from dark, rural areas well over ten times that amount are found.



Relative sizes and distances in the sky can be deceiving. For instance, 360 "full moons" can be placed side by side, extending from horizon to horizon.

→ • Relative size of the full moon.

The Ecliptic represents the plane of the solar system. The sun, the moon, and the major planets all lie on or near this imaginary line in the sky.

## Navigating the March night sky: Simply start with what you know or with what you can easily find.

- 1 Above the northeast horizon rises the Big Dipper. Draw a line from its two end bowl stars upwards to the North Star. Its top bowl stars point west to Capella in Auriga, nearly overhead. Leo reclines below the Dipper's bowl.
- 2 From Capella jump northwestward along the Milky Way to Perseus, then to the "W" of Cassiopeia. Next jump southeastward from Capella to the twin stars of Castor and Pollux in Gemini.
- 3 Directly south of Capella stands the constellation of Orion with its three Belt Stars, its bright red star Betelgeuse, and its bright blue-white star Rigel.
- 4 Use Orion's three Belt stars to point northwest to the red star Aldebaran and the Hyades star cluster, then to the Pleiades star cluster. Travel southeast from the Belt stars to the brightest star in the night sky, Sirius. It is a member of the Winter Triangle.

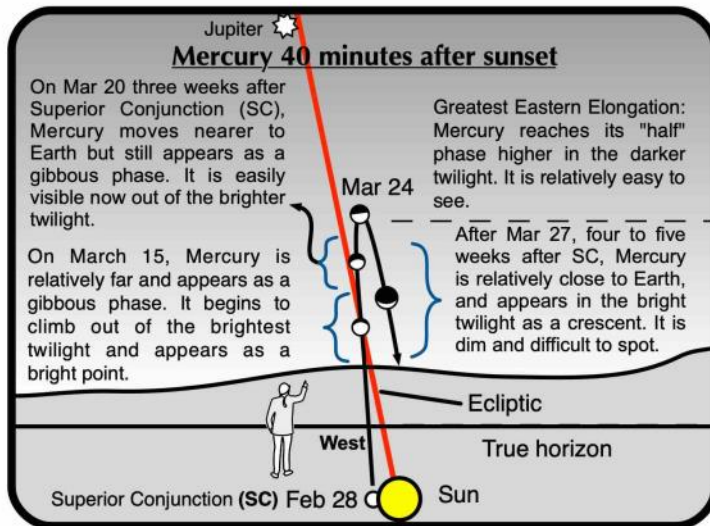
### Binocular Highlights

**A:** Between the "W" of Cassiopeia and Perseus lies the Double Cluster. **B:** Examine the stars of the Pleiades and Hyades, two naked eye star clusters. **C:** M42 in Orion is a star forming nebula. **D:** Look south of Sirius for the star cluster M41. **E:** M44, a star cluster barely visible to the naked eye, lies to the southeast of Pollux. **F:** Look high in the east for the loose star cluster of Coma Berenices.



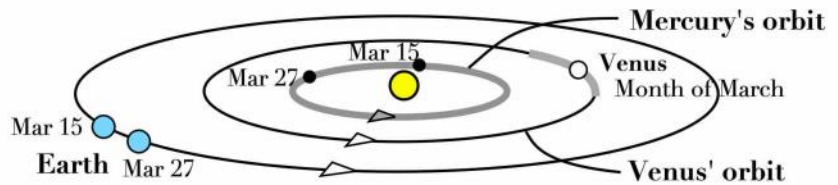
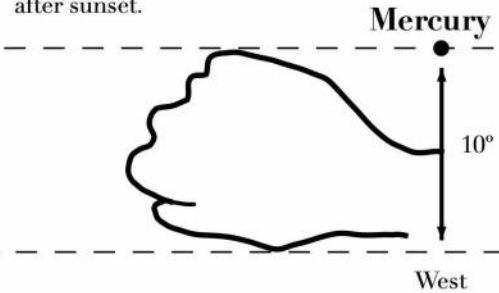
## Guide to Viewing Mercury in the March 2024 Sky

by *Astronomical League*



## Mercury in the Evening!

Mercury appears about "1 fist width on a fully extended arm" above the true horizon forty minutes after sunset.



### Mercury's best evening apparition of 2024!

From 40 to 60 minutes after sunset after March 15th, look to the west for a point of light shining low above the horizon.

- Outstretch your arm and make a fist. Place one side at the true horizon. At its other side should be Mercury.
- Over the next week, the little planet rises slightly higher each evening into the darker twilight while brightening, making it easier to spot.
- On the 24th, Mercury appears as far from the set sun as it will be. This point in its orbit is called Greatest Eastern Elongation. Just three nights later as it descends in the twilight, it will become much more difficult to spot.

## Face-on Spiral Galaxy NGC 3351 Image Comparison

by *Webb Space Telescope*



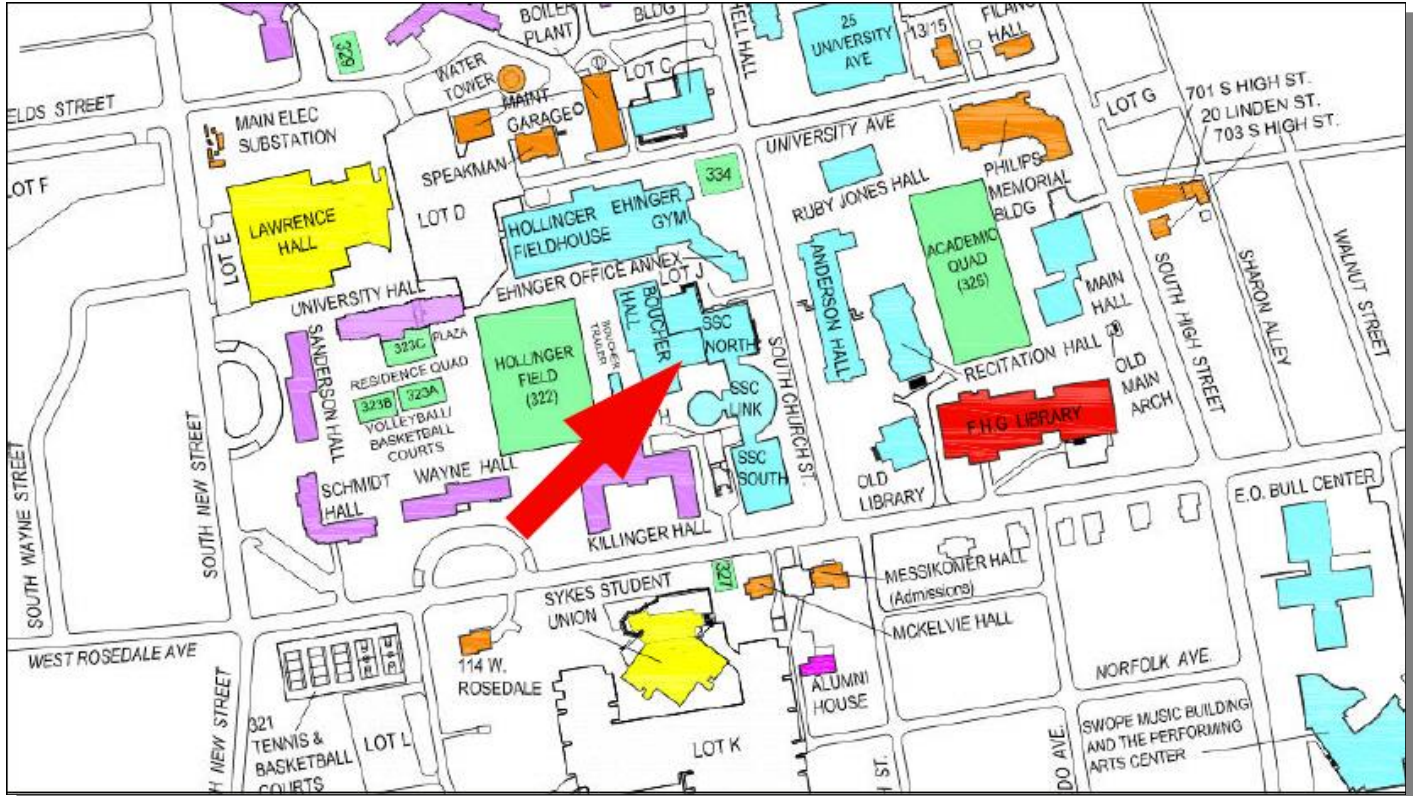
Image Credit: NASA, ESA, CSA, STScI, Janice Lee (STScI), Thomas Williams (Oxford), PHANGS Team

Galaxy NGC 3351 is split diagonally in this composite image with the James Webb Space Telescope's observations appearing on the bottom right, and the Hubble Space Telescope's image at top left. Webb and Hubble's images show a striking contrast in how they present visual data. This is caused by the telescopes' designs with Webb's observations combining near- and mid-infrared light and Hubble showcasing visible and ultraviolet light. Dust absorbs ultraviolet and visible light, and then re-emits it in the infrared. In Webb's images, we see dust glowing in infrared light. In Hubble's images, dark regions are where starlight is absorbed by dust. Learn more about the image at [webbspacetelescope.org](http://webbspacetelescope.org)

## CCAS Directions

### West Chester University Campus

The monthly meetings (September through May) are held in Room 112 in Merion Science Center (formerly the Boucher Building), attached to the Schmucker Science Center. The Schmucker Science Center is located at the corner of S. Church St & W. Rosedale Ave. Parking is generally available across Rosedale in the Sykes Student Union parking lot (Lot K).



### Observing (Cont'd)

*(Continued from page 5)*

Kushida shows near the feet of Gemini. 125P/Spacewatch, 227P/Catalina - LINEAR, 150P/LONEOS and 89P/Russell may appear at a dark sky location and under the right sky conditions.

**Asteroids:** 4 Vesta (8th magnitude) can be best viewed on the 16<sup>th</sup> when it appears about 4° south of the First Quarter Moon.

**Meteor showers:** None visible in March.

### CCAS Membership Information and Society Financials

#### Treasurer's Report by Don Knabb

##### Feb. 2024 Financial Summary

Beginning Balance	\$1877
Deposits	\$325
Disbursements	-\$544
Ending Balance	\$1658

#### New Member Welcome!

Welcome to our new CCAS member Steve Harner of West Chester, PA.

We're glad you decided to join us under the stars! Clear skies to you!

#### Membership Renewals

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

**Don Knabb**  
988 Meadowview Lane  
West Chester PA 19382

The current dues amounts are listed in the *CCAS Information Directory*. Consult the table of contents for the directory's page number in this month's edition of the newsletter.

**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**  
 5049 E Broadway Blvd, #105  
 Tucson, AZ 85711  
 Phone: 520-293-3198  
 Fax: 520-293-3192  
 E-mail: [ida@darksky.org](mailto:ida@darksky.org)

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

<http://www.darksky.org>

**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://www.POLCouncil.org>

**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:

<http://www.lymebasics.org>

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

**Good Outdoor Lighting Websites**

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? Check out these sites and pass this information on to others. Help reclaim the stars! And save energy at the same time!



Light pollution from poor quality outdoor lighting wastes billions of dollars and vast quantities of valuable natural resources annually. It also robs us of our heritage of star-filled skies. Starry Night Lights is committed to fighting light pollution. The company offers the widest selection of ordinance compliant, night sky friendly and neighbor friendly outdoor lighting for your home or business. Starry Night Lights is located in Phoenix, Arizona.

Phone: 520-280-3846

<http://www.starrynightlights.com>



**LIGHTHOUSE**  
 OUTDOOR LIGHTING

Lighthouse Outdoor Lighting is a dedicated lifetime corporate member of the [International Dark-Sky Association](http://www.darksky.org). Lighthouse's products are designed to reduce or eliminate the negative effects outdoor lighting can have while still providing the light you need at night.

**211 North Walnut St.**  
**1st Floor**  
**West Chester, PA 19380**

Phone: 484-291-1084 or 800-737-4068

<https://www.lighthouse-lights.com/landscape-lighting-design/pa-west-chester/>

**Local Astronomy-Related Stores**

Listing retail sites in this newsletter does not imply endorsement of any kind by our organization. This information is provided only as a service to our members and the general public.



Skies Unlimited is a retailer of telescopes, binoculars, eyepieces and telescope accessories from Meade, Celestron, Televue, Orion, Stellarvue, Takahashi, Vixen, Losmandy and more.

**Skies Unlimited**  
**Suburbia Shopping Center**  
**52 Glocker Way**  
**Pottstown, PA 19465**

Phone: 610-327-3500 or 888-947-2673  
 Fax: 610-327-3553  
 Email: [info@skiesunlimited.com](mailto:info@skiesunlimited.com)

<http://www.skiesunlimited.net>



Located in Manayunk, Spectrum Scientifics educates and entertains customers with an array of telescopes, microscopes, binoculars, science toys, magnets, labware, scales, science instruments, chemistry sets, and much more.

**4403 Main Street**  
**Philadelphia, PA 19127**

Phone: 267-297-0423  
 Fax: 215-965-1524

**Hours:**  
 Monday thru Friday: 9AM to 5PM

<http://www.spectrum-scientifics.com>

# CCAS Information Directory

## CCAS Lending Telescopes

Contact Don Knabb 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. Don's phone number is 610-436-5702.

## CCAS Lending Library

Contact our Librarian, Barb Knabb, to make arrangements to borrow one of the books in the CCAS lending library. Copies of the catalog are available at CCAS meetings. Barb's phone number is 610-436-5702.

## 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: [newsletter@ccas.us](mailto:newsletter@ccas.us)

Or mail the contribution, typed or handwritten, to:

**Dr. John C. Hepler**  
21 Medinah Drive  
Reading, PA 19607

## 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 Dr. John Hepler, the newsletter editor, at: [newsletter@ccas.us](mailto:newsletter@ccas.us).

## CCAS Website

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

<http://www.ccas.us>

Dr. Hepler 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 copyrighted material! Give your contributions to Dr. Hepler at (484) 883-5033 or e-mail to [webmaster@ccas.us](mailto: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 "nights out" for school, scout, and other civic groups.

## CCAS Executive Committee

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

**President:** Dave Hockenberry  
610-558-4248

**Vice President:** Pete Kellerman  
610-873-0162

**ALCor & Treasurer:** Don Knabb  
610-436-5702

**Observing:** Michael Manigly  
484-631-6197

**Secretary:** Beatrice Mazziotta  
610-933-2128

**Librarian:** Barb Knabb  
610-436-5702

**Program:** Bruce Ruggeri  
610-256-4929

**Education:** Don Knabb  
610-436-5702

Dennis O'Leary  
610-701-8042

**Webmaster & Newsletter:** John Hepler  
484-883-0533

**Public Relations:** Ann Miller  
610-558-4248



## CCAS Membership Information

The 2023 membership rates are as follows:

**REGULAR MEMBER.....\$30/year**  
**SENIOR MEMBER.....\$15/year**  
**STUDENT MEMBER.....\$ 5/year**  
**JUNIOR MEMBER.....\$ 5/year**  
**FAMILY MEMBER.....\$40/year**

## Membership Renewals

Check the Membership Renewals on the front of 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:

**Don Knabb**  
988 Meadowview Lane  
West Chester PA 19382-2178

Phone: 610-436-5702

e-mail: [treasurer@ccas.us](mailto:treasurer@ccas.us)

## Sky & Telescope Magazine

The club membership subscription cost for *Sky and Telescope* magazine has increased to **\$43.95**. This is still a good saving from the regular rate of **\$56.05**.

There is no need to go through the CCAS treasurer for subscriptions or renewals. Just go to the Sky and Telescope website and select "Magazine", then under the FAQs you can subscribe at the club rate.

<https://skyandtelescope.org/subscribe/>

If you have **any** questions call Don Knabb at 610-436-5702.

## 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).

There is no need to go through the CCAS treasurer for subscriptions or renewals. Just call customer service at 877-246-4835 and request the club rate for your new subscription or renewal.