



Observations

A Monthly Publication Of The
CHESTER COUNTY ASTRONOMICAL SOCIETY

Vol. 34, No. 8 **Three-Time** Winner of the Astronomical League's Mabel Sterns Award ☼ 2006, 2009 & 2016 August 2026

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M16, The Eagle Nebula



CCAS Member Tom Kovic shot this image of M16, the Eagle Nebula, at Cherry Springs State Park on 14 July 2026 with a Dwarf 3 telescope and telephoto lens in mode Deep Sky Manual with a Dual Band filter and 30-second exposure.

Membership Renewals Due

08/2026	Borowski Johnston & Stein Knabb Family Lurcott, L. Manigly Schultz Trunk Zullitti
09/2026	Das Matas Patel Peterson Reilly Sarkar
10/2026	Abbott Kraynik Lane Lester Levin Na Payton Richardson Vish, D. Vish, S. Wirth

August 2026 Dates

- 5th** • Last Quarter Moon (10:21 p.m. EDT).
- 9th** • The Moon passes 4° north of Mars, 2 a.m. EDT.
- 12th** • New Moon (1:36 p.m. EDT).
- 15th** • Venus is at greatest eastern elongation (46°), 2 a.m. EDT.
- 15th** • Mercury passes 0.6° north of Jupiter, 5 a.m. EDT.
- 19th** • First Quarter Moon (10:46 p.m. EDT).
- 27th** • Partial lunar eclipse, midnight EDT.
- 28th** • Full Moon, the Sturgeon Moon (12:18 a.m. EDT).
- 31st** • The Moon passes 7° north of Saturn, 4 a.m. EDT.



CCAS Upcoming Nights Out

In addition to our monthly observing sessions at the Myrick Conservancy Center, BRC (for directions, see pg. 13), CCAS schedules special "nights out" throughout the year. Members are encouraged to help out during these events any way they can. See below for more information.

- ☼ Tuesday, August 11 to Friday, August 14, 2026: CCAS Camping Trip at Cherry Springs State Park, Coudersport, PA.
- ☼ Friday, August 14, 2026: CCAS Monthly Observing Session: Myrick Conservancy Center, BRC. Rain date: Saturday, August 15th.
- ☼ Friday, August 21, 2026: CCAS Special Observing Session: Elwood L. Crossan Park, Franklin Township, Landenberg, PA. (Rain date: August 22, 2026).

For more information about future observing opportunities, contact our Observing Chair, Don Miller.

Summer Society Events

August 2026

4th • CCAS Solar Observing Session from 1:30 to 3:30 p.m. EDT at Middletown Free Library, Middletown, PA. For more information, contact our Observing Chair, [Don Miller](#).

8th • CCAS Solar Observing Session from 10:00 a.m. to 12:30 p.m. EDT at Downingtown Library, Middletown, PA. For more information, contact our Observing Chair, [Don Miller](#).

11th • CCAS Solar Observing Session from 1:30 to 3:30 p.m. EDT at Middletown Library, Middletown, PA. For more information, contact our Observing Chair, [Don Miller](#).

11th-14th • CCAS camping trip to Cherry Springs, 4639 Cherry Springs Rd, Coudersport, PA 16915. For more information, contact our Observing Chair, [Don Miller](#).

12th • CCAS Solar Observing Session from 10:00 a.m. to 12:30 p.m. EDT at Downingtown Library, Downingtown, PA. For more information, contact our Observing Chair, [Don Miller](#).

14th • CCAS Solar Observing Session from 10:30 a.m. to 1:30 p.m. EDT at CVT at Exton Park, 132 Church Farm Ln, Exton, PA 19341. For more information, contact our Observing Chair, [Don Miller](#).

14th • CCAS Monthly Observing Session, Myrick Conservancy Center, BRC. The observing session starts at sunset. Rain date: August 15th.

15th • CCAS Solar Observing Session from 10:00 a.m. to 12:00 p.m. EDT at Exton Library, Exton, PA. For more information, contact our Observing Chair, [Don Miller](#).

18th • CCAS Solar Observing Session from 1:30 to 3:30 p.m. EDT at Middletown Library, Middletown, PA. For more information, contact our Observing Chair, [Don Miller](#).

19th • CCAS Solar Observing Session from 10:00 a.m. to 12:30 p.m. EDT at Downingtown Library, Downingtown, PA. For more information, contact our Observing Chair, [Don Miller](#).

20th • Open call for articles and photographs for the September 2026 edition of [Observations](#).

21st • CCAS Special Observing Session: Elwood L. Crossan Park, Franklin Township, Landenberg, PA. (Rain date: August 22, 2026). For more information, contact our Observing Chair, [Don Miller](#).

22nd • [Rachel Kohl Community Library](#) Solar Observing Event, Glen Mills, PA. 10:00 a.m.-12:00 p.m. EDT. For more information, contact our Observing Chair, [Don Miller](#).

24th • Downingtown Library Loaner Scope Talk #4, 122 Wallace Ave, Downingtown, PA 19335. The event is scheduled from 7:00 to 8:00 p.m. EDT. For more information, contact our Observing Chair, [Don Miller](#).

25th • CCAS Solar Observing Session from 1:30 to 3:30 p.m. EDT at Middletown Library, Middletown, PA. For more information, contact our Observing Chair, [Don Miller](#).

26th • Deadline for newsletter submissions for the September 2026 edition of [Observations](#).

May 2026 Meeting Minutes by Bea Mazziotta, CCAS Secretary

- Dave Hockenberry welcomed attendees to the May 12, 2026 meeting. This final meeting of the year was held at WCU and via Zoom.
- Don Miller, Observing Chair, reviewed some May night sky observing highlights including:
 - M51 - the Whirlpool Galaxy in Canes Venatici
 - M53 - a distant globular cluster in Coma Berenices and planetary viewing opportunities
- He reminded members of the monthly Hubble Night Sky Challenge which has 8 objects to observe in May in the northern hemisphere.
 - Link for details at <https://science.nasa.gov/mission/hubble/science/explore-the-night-sky/hubbles-night-sky-challenge/>
 - He went over upcoming CCAS observing events both night sky and solar. Go to [CCAS.US](#) for details.
- Dr. Ken Koeplinger was the evening's speaker. His presentation "Stars & Stripes in the Sky; U.S. Astronomy at 250 Years" was a timely discussion of American discoveries and contributions to the science of Astronomy going back to the time of the country's founding and ending with modern day telescopes and space exploration.
 - Dr. Koeplinger, a retired research chemist, is a NASA Caltech/JPL Solar System Ambassador and adjunct Chemistry instructor.

September 2026 CCAS Meeting Agenda by Bruce Ruggeri, CCAS Program Chair

Our next meeting will be held on September 8, 2026, in person (and via Zoom & YouTube) at West Chester University's Merion Science Center, Room 112. The meeting starts at 7:30 p.m. EDT. The Science Center is located at 720 S. Church St., West Chester, PA. Our guest speaker is Dr. Theodore Kareta, Department of Physics, Villanova University. His presentation is titled "Quasi-Satellites, Mini-Moons, and Temporary Co-Orbitals."

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 the coming 2026-2027 season. If you are interested in presenting, or know someone who would like to participate, please contact me at programs@ccas.us.

September 2026 Guest Speaker Bio & Presentation

by Bruce Ruggeri, CCAS Program Chair

Our in-person and Zoom monthly CCAS meeting scheduled for Tuesday, September 8, 2026, will commence at 7:30 p.m. EDT. This is our first monthly meeting of the 2026-2027 season.

If you are able to join us in person, our meetings are held at West Chester University's (WCU) Merion Science Center, Room 112. The Science Center is located at 720 S. Church St. in West Chester.

Our guest speaker is Dr. Theodore Kareta, Department of Physics, Villanova University. His presentation is titled "Visitors or Neighbors?: The Origin and Properties of the Quasi-Satellites and 'Mini-Moons' of the Earth."



Theodore "Teddy" Kareta, Ph.D.

Synopsis: The Earth only has one moon, right? Right?! You might be confused if you've

been reading news articles over the past few years confidently declaring otherwise. In this talk, Dr. Theodore ("Teddy") Kareta will present and discuss the nature and origins of the Earth's many closest companions: asteroids on extremely near-Earth orbits that can misleadingly get called "mini-moons."

While most of the near-Earth asteroids are thought to come from the Main Belt of asteroids between Mars and Jupiter, recent research has shown that some small fraction of the space rocks on the most Earth-like trajectories might have an origin closer to home as ejected boulders blasted off our Moon in a recent impact — but how can we

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August 2026 Light Pollution News Roundup

by Bill McGeeney, Host of Light Pollution News Podcast

This month, I was very happy to be joined by the CEO of Dark Sky International, Ruskin Hartley; an amazing ecologist, Dr. Kaori Yokochi; and the co-host to one of my favorite podcasts, the Actual Astronomy podcast's Shane Ludtke for episodes: [Fundamental Rhythms!](#) and [Sustainable Regeneration? Or is it Regenerative Sustainability?](#) As always, you can find all of the links to this show and beyond over at [LightPollutionNews.com](#). Light Pollution News is a listeners supported show. If you like what we're doing, please consider sharing this update.

Maybe you're not an executive, but down in Australia's Sunshine Coast Hinterland Dark

Sky Reserve you could be a Chief Star Counter. The newly christened reserve ran a contest that included round-trip flights, a rainforest retreat, and guided stargazing. 9-year-old Sarah Meldrum from Victoria won the job! Not a bad gig if you can stay awake for it!

I bet you haven't heard of Ladakh, India. The area, that averages 270 clear nights a year, draws comparisons to the Atacama Desert. It's hosts to a dense array of astronomical observatories. A study in Sustainable Earth asked whether protecting the night sky served as sustainable development. Since receiving a Dark Sky Reserve designation in 2022, over 1/3 of 28,000 visitors participated in astrotourism.

Despite responsible lighting efforts though, night sky erosion has continued, complicated by military presence near the India-China border. Elsewhere, France's Mercantour Dark Sky Reserve expanded to entirely envelope Mercantour National Park, adding 1,400 square kilometers and 15,000 residents.

Los Angeles property owners voted down a streetlight assessment targeted to raise \$125M annually. Apparently, the purported crime fighting ability of streetlights fell short as over 200,000 streetlights remain damaged by copper thieves. Just under 80% of residents rejected the proposal on June 26th. When people realize they're footing the

(Continued on page 11)

STAR CHART FOR MID-LATITUDES OF THE NORTHERN HEMISPHERE

What's Out Tonight?

OPTIMIZED FOR 1½ HOURS
AFTER SUNSET
but can be used after that for several more hours.

August 2026 Sky Chart

Instructions

Face North, South, East or West, then rotate the chart so your direction is at the bottom. Match the biggest stars on the chart to the brightest stars in the sky. The center of the chart is the top of the sky.

FREE

Visit: WhatsOutTonight.com

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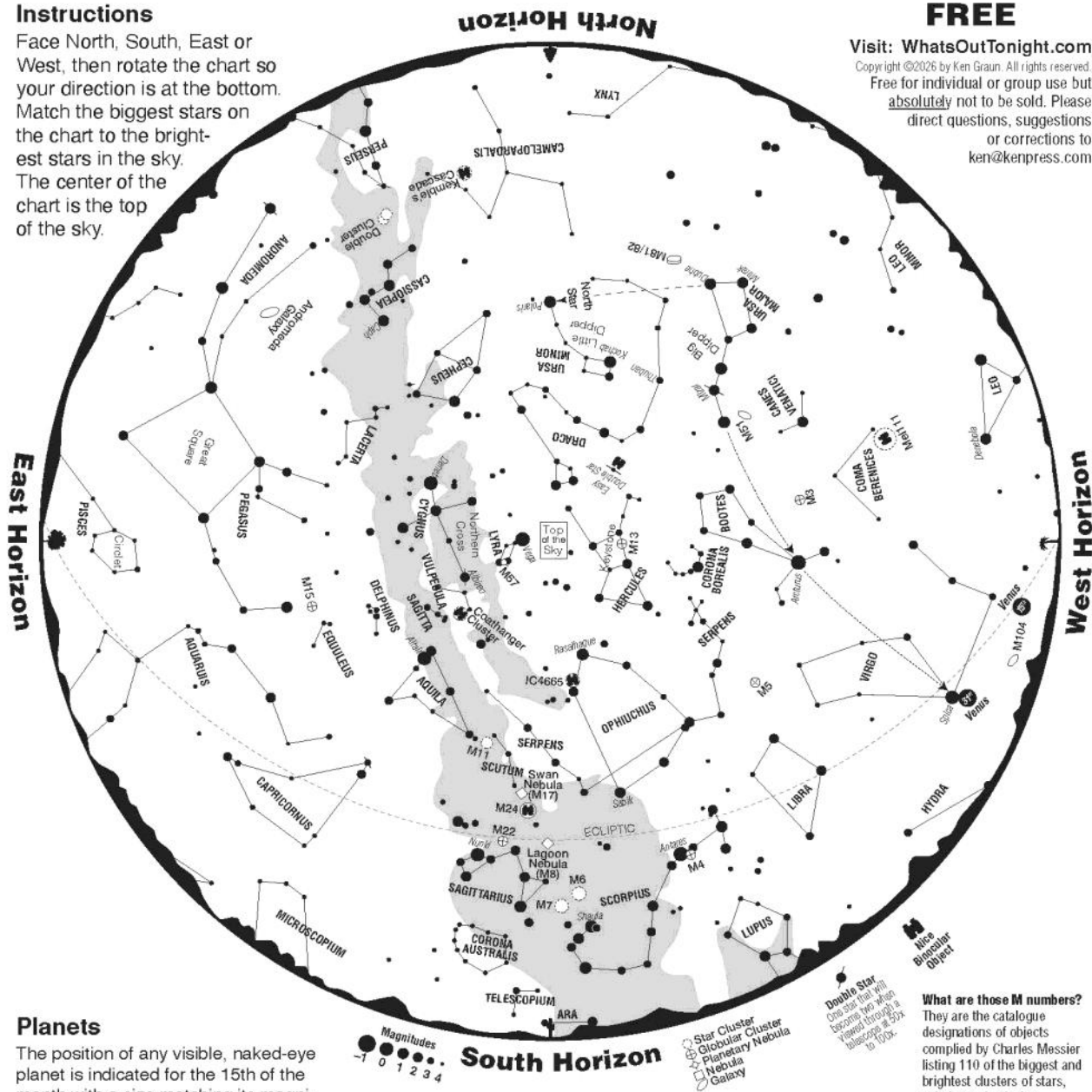
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or corrections to

ken@kenpress.com



Planets

The position of any visible, naked-eye planet is indicated for the 15th of the month with a size matching its magnitude. If the planet moves significantly during a month, other positions will be noted with dates. The ECLIPTIC is the path of the Sun through the sky but the planets and Moon move along it, too. It passes through the constellations of the zodiac.

August 2026 Planet Notes (15th of each month)

Venus, at magnitude -4.3, sets in the west about 1.5 hours after the Sun. **Mars**, at magnitude +1.3, in Gemini, rises in the east around 2:30 AM. **Jupiter**, at magnitude -1.8, in Cancer, rises in the east about 1 hour before the Sun. **Saturn**, at magnitude +0.6, in Pisces, rises in the east around 10:30 PM.

Distances planets are from the Earth on the 15th of this month:

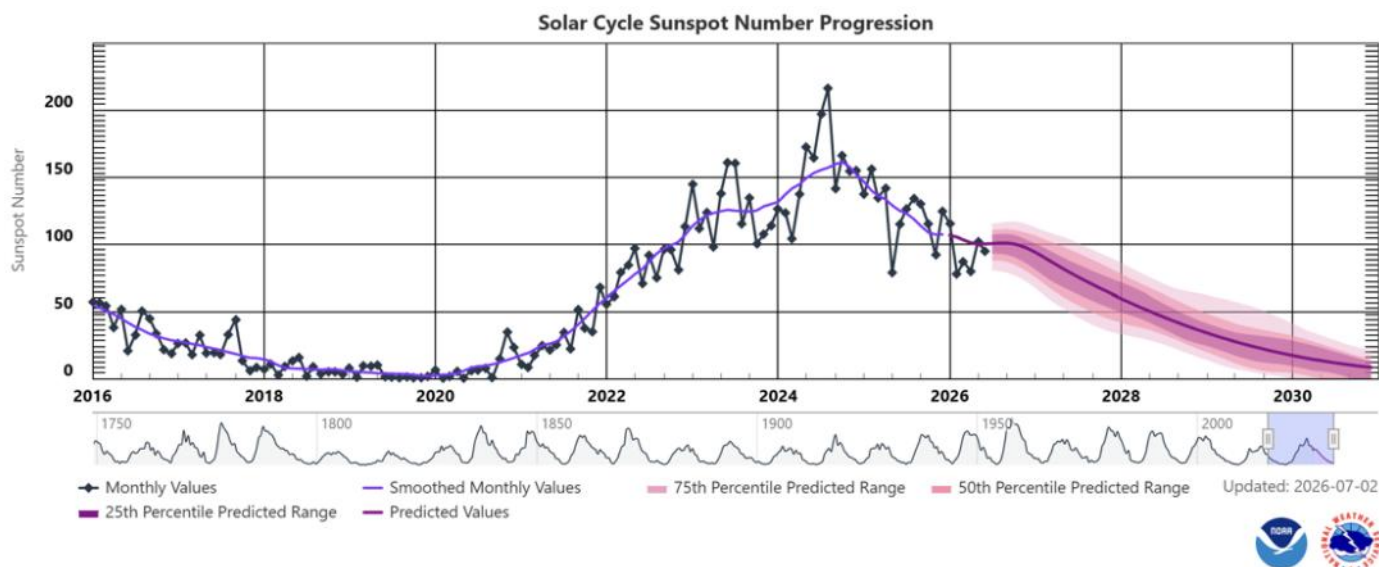
Venus: 63,000,000 miles, **Mars**: 179,000,000 miles, **Jupiter**: 583,000,000 miles, **Saturn**: 816,000,000 miles.

What are those M numbers?

They are the catalogue designations of objects compiled by Charles Messier listing 110 of the biggest and brightest clusters of stars, nebulae and galaxies.

August 2026 Observing Highlights

by Don Miller, CCAS Observation Chair



Key Events this month:

A total solar eclipse, where the moon totally blocks the sun, is an amazing sight to see. Unfortunately for the Philadelphia area, we will only have a minor partial eclipse (7% coverage at maximum) on the 12th of August. It will begin at 12:50 pm and end at 2:56 p.m. EDT. Never look directly at the sun unless you are wearing solar viewing glasses (sunglasses ARE NOT adequate).

On the 13th of August, the annual spectacle of the Perseid Meteor Shower will peak. This meteor shower is caused by the remnants of a comet and is known for its frequent fireballs and color trails. There will be no moonlight in the sky to hide the meteors, making this an excellent viewing opportunity. The best way to view this shower is to find a dark location, wear comfortable but warm clothing, look straight overhead, and while anytime in the dark will be good, it will be best after midnight. Approximately 30 to 50 meteors per hour can

potentially be seen in good conditions.

Solar and lunar eclipses come in pairs. The lunar eclipse in August will occur on the 27th and 28th. This will be a partial eclipse of about 93% coverage which starts at 10:33 p.m. EDT on the 27th and ends on 1:51 p.m. EDT on the 28th.

For planets, Saturn will be visible in the late evenings during August. This planet is a wonder to view in even a small telescope.

Discussion:

August nights can be pretty warm and humid which can make transparency a challenge, but the number of constellations in the sky which are old friends makes any attempt worth it. We also have the Perseids, a partial solar and an almost total lunar eclipse. Enjoy!

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Sunrise/Sunset & Moon Phases for August 2026

Date	Civil Twilight Begins	Sunrise	Sunset	Civil Twilight Ends	Length of Day
08/01/2026	5:30 a.m. EDT	6:01 a.m. EDT	8:15 p.m. EDT	8:46 p.m. EDT	14h 14m 52s
08/15/2026	5:45 a.m. EDT	6:14 a.m. EDT	7:58 p.m. EDT	8:27 p.m. EDT	13h 44m 37s
08/31/2026	6:01 a.m. EDT	6:29 a.m. EDT	7:35 p.m. EDT	8:03 p.m. EDT	13h 05m 51s

Moon Phases

Last Quarter	08/05/2026	10:21 p.m. EDT	New Moon	08/12/2026	1:36 p.m. EDT
First Quarter	08/19/2026	10:46 p.m. EDT	Full Moon	08/28/2026	12:18 a.m. EDT

Through the Eyepiece: M6, the Butterfly Cluster

by Don Knabb, CCAS Treasurer & ALCOR

During the summer months I find myself irresistibly drawn to the southern sky. This part of the sky is visible to us for only a few months, and it is full of incredible objects to gaze upon. One of these objects is the open cluster Messier 6, also known as the Butterfly Cluster.

From a dark sky site such as Cherry Spring State Park, the cluster is detectable with the naked eye, close to the "stinger" of Scorpius. It is next to what many observers consider its companion object, M7, Ptolemy's Cluster.

The bright star that represents the 'stinger' on the tail of the Scorpion is Shaula. With binoculars or a telescope with a low power eyepiece, scan to the northeast, up and to the left. Under dark skies it will show as a hazy patch in the sky, but do not confuse it with its brighter, southeastern neighbor, M7.

In binoculars, Messier 6 stars will all appear to be around the same brightness and the 'butterfly' asterism will be unmistakable. In a telescope, many more stars will be revealed – making the namesake a bit harder to recognize, but more interesting because more stars are seen and color is distinguished. However, watch this cluster on nights when there are faint clouds in the sky or moonlight. You'll see the shape in a telescope quite clearly then! Be sure to maintain a minimum magnification when using a telescope, because this is a large open star cluster. To the right is a picture I took with a Seestar S50 from our CCAS camping trip in July 2025.

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Image credit: Don Knabb

Observing (Cont'd)



Top to bottom: Helix Nebula (NGC 7293) Image: Sky & Telescope/Daniel Stern; Wizard Nebula (NGC 7380) Image: Wikimedia Commons/Chuck Ayoub; and Fireworks Galaxy (NGC 6946) Image: Photobin/Tim Gillespie.

(Continued from page 5)

Sun:

The sun's activity is continuing on downward side of the solar maximum for this cycle but it is still showing a lot of activity. As the writing of this highlight, the sunspot number is 59. In July, there were M- and X-class flares. Go to this URL for the latest solar activity report: <https://earthsky.org/sun/sun-news-activity-solar-flare-cme-aurora-updates/>

Moon:

- Last Quarter: 6th
- New Moon: 12th
- First Quarter: 20th
- Full Moon: 28th

The full moon this month is known as the sturgeon moon, which comes from native American tradition for the time when these fish, from the great lakes, were readily caught.

Planets: (description below is for the 15th of the month at 8 p.m. EDT)

- Mercury: Not visible
- Venus: Visible low in the west after sunset, setting at 9:42 p.m. EDT
- Mars: visible low in the east before sunrise, rising at 2:51 a.m. EDT
- Jupiter: Not visible
- Saturn: Rises around 10:07 p.m. EDT
- Uranus: Rises 12:24 a.m. EDT
- Neptune: Rises 9:37 p.m. EDT

Select Night Sky Objects and Events

Helix Nebula (NGC 7293, Eye of God, or my favorite Eye of Sauron): This gorgeous planetary nebula will be low in the southern sky, rising after sunset and best seen after midnight.

Wizard Nebula (NGC 7380): This is a very challenging visual target but for anyone with a smart scope should give it a try. An emission nebula, located about 7,000 Lyrs from Earth.

Fireworks Galaxy (NGC 6946): A gorgeous double-barreled galaxy in Cygnus. As with any galaxy, you will need a dark sky site to have a chance to visually see it. Smart scope should capture it well.

Speaker Bio (Cont'd)

(Continued from page 3)

tell the difference? Understanding the origins of and learning how to search for these fascinating objects won't just help us understand how much danger the Earth is in from potentially hazardous asteroids, it might also help us understand the most recent geologic history of our one (and only true permanent) Moon.

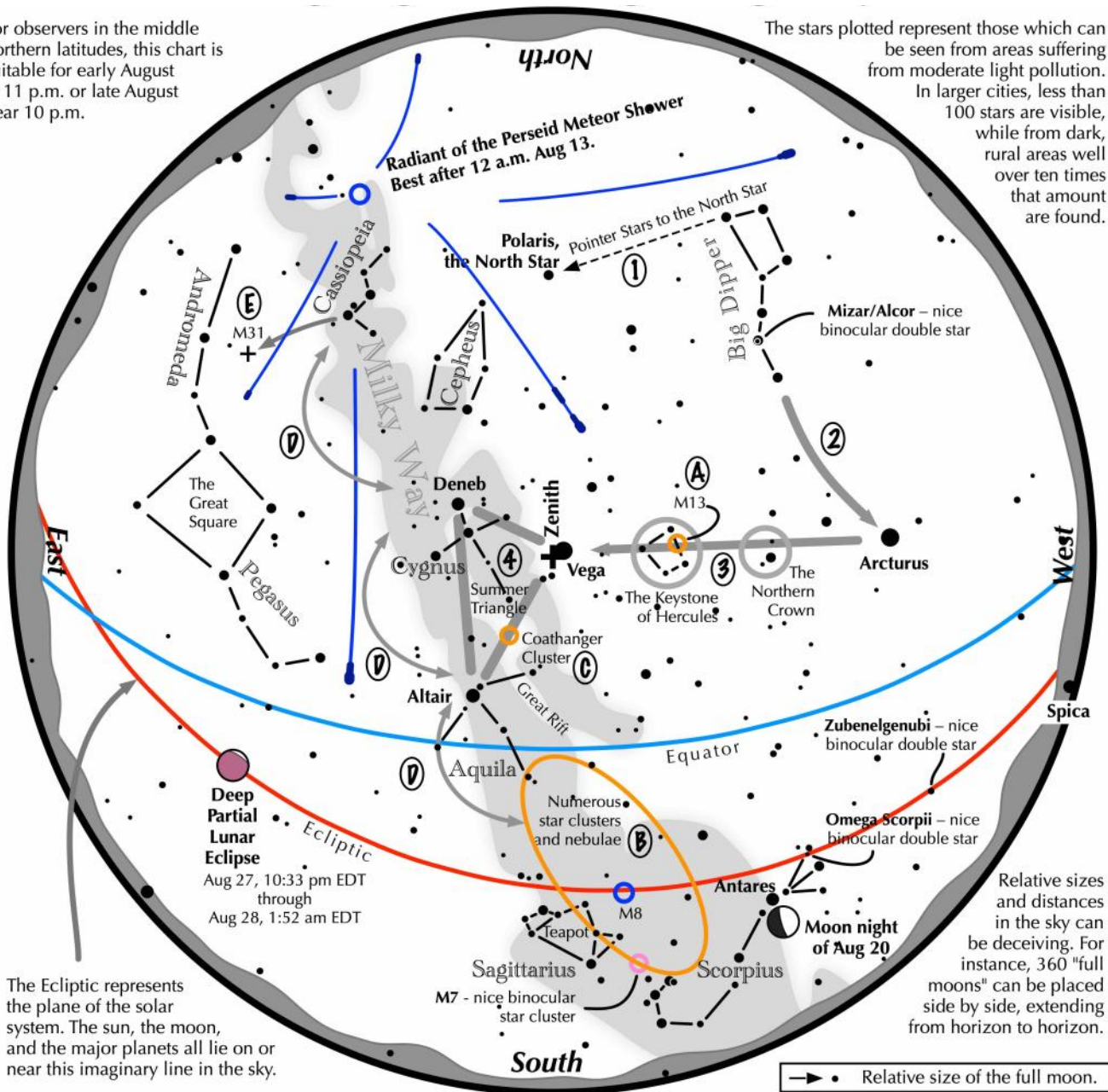
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Navigating the mid-August Night Sky

courtesy of the Astronomical League

For observers in the middle northern latitudes, this chart is suitable for early August at 11 p.m. or late August near 10 p.m.

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.



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 mid August night sky: Simply start with what you know or with what you can easily find.

- 1 Extend a line north from the two stars at the tip of the Big Dipper's bowl. It passes by Polaris, the North Star.
- 2 Follow the arc of the Dipper's handle. It intersects Arcturus, the brightest star in the June evening sky.
- 3 To the northeast of Arcturus shines another star of the same brightness, Vega. Draw a line from Arcturus to Vega. It first meets "The Northern Crown," then the "Keystone of Hercules." A dark sky is needed to see these two dim stellar configurations.
- 4 High in the East lie the summer triangle stars of Vega, Altair, and Deneb.

Binocular Highlights

- A: On the western side of the Keystone glows the Great Hercules Cluster.
- B: Between the bright stars Antares and Altair, hides an area containing many star clusters and nebulae.
- C: 40% of the way between Altair and Vega, twinkles the "Coathanger," a group of stars outlining a coathanger.
- D: Sweep along the Milky Way for an astounding number of faint glows and dark bays, including the Great Rift.
- E: The three westernmost stars of Cassiopeia's "W" point south to M31, the Andromeda Galaxy, a "fuzzy" oval.

Astronomical League www.astroleague.org; duplication is allowed and encouraged for all free distribution.





Enhance your view of the thin crescent of Venus

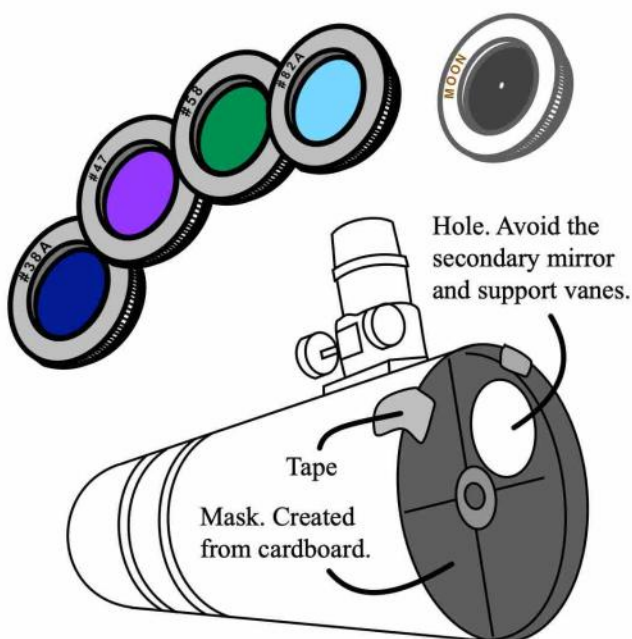
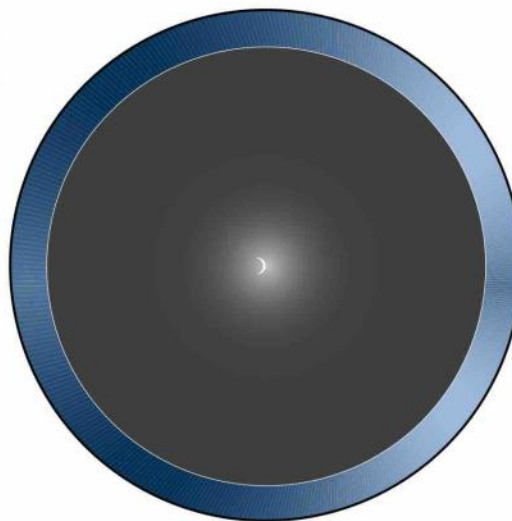


Venus is bright. So bright that its glare becomes interfering, especially when viewed in its beautiful crescent phase. Many people see it as a bright blur.

For a more satisfying view, take one or more of these steps:

1. Place a **moon filter** over the eyepiece.
2. Depending on telescope aperture, try **colored filters** such as #38A (dark blue), #47 (violet), and #58 (green). #82A (light blue) works well in general. They may bring out very subtle details in that planet's cloudtops.

Because they transmit little light, the darker filters are better suited for apertures greater than 8-inches.

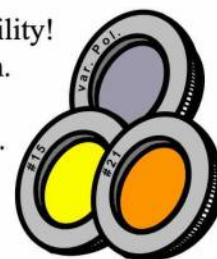


3a. Use an **aperture mask**. Since Venus is bright – really *too* bright – reducing the effective aperture won't hurt viewing. Doing so will also increase the scope's f ratio.

3b. If an SCT or reflector is used that has an aperture of 8-inches or larger, place an **off-axis mask** over the entrance of the optical tube. (Smaller apertures won't have the spacing for large enough holes.) Center the hole in the mask so that light enters the optical tube unobstructed, avoiding the secondary mirror and any vanes. The result – a dimmer, but sharper image.

4. **Daytime viewing.** Being higher above the horizon just might improve viewability!

- Place the sun behind a building. Make sure you can't inadvertently view the sun.
- Find the alt-az coordinates of Venus and its elongation from the sun.
- Scan that area of the sky with binoculars. Once you spot it, aim your scope at it.
- Consider using a variable polarizing filter, a Wratten #15 (deep yellow), or a #21 (orange) filter to improve sky contrast.



Eyepiece (Cont'd)

(Continued from page 6)

To the right is the picture with the butterfly shape shown as I see it.

An open cluster is a group of up to a few thousand stars that were formed from the same giant molecular cloud and have roughly the same age. More than 1,100 open clusters have been discovered within the Milky Way galaxy, and many more are thought to exist. They are loosely bound to each other by mutual gravitational attraction and become disrupted by close encounters with other clusters and clouds of gas as they orbit the galactic center. Open clusters generally survive for a few hundred million years. In contrast, the more massive globular clusters of stars exert a stronger gravitational attraction on their members, and can survive for many billions of years.

M6 is estimated to contain about 80 stars, all moving through space together in an area spanning about 12 to 25 light years across – and may have formed anywhere from 51 to 95 million years ago.

It is commonly believed that the first astronomer to record the Butterfly Cluster's position in the sky was Giovanni Battista Hodierna in 1654. However, Robert Burnham, Jr. has suggested in the "Celestial Handbook" that Ptolemy may have seen it while noting the Ptolemy Cluster M7

Charles Messier observed M6 on May 23, 1764. He commented on the cluster: "In the same night of May 23 to 24, 1764, I have determined the position of a cluster of small stars between

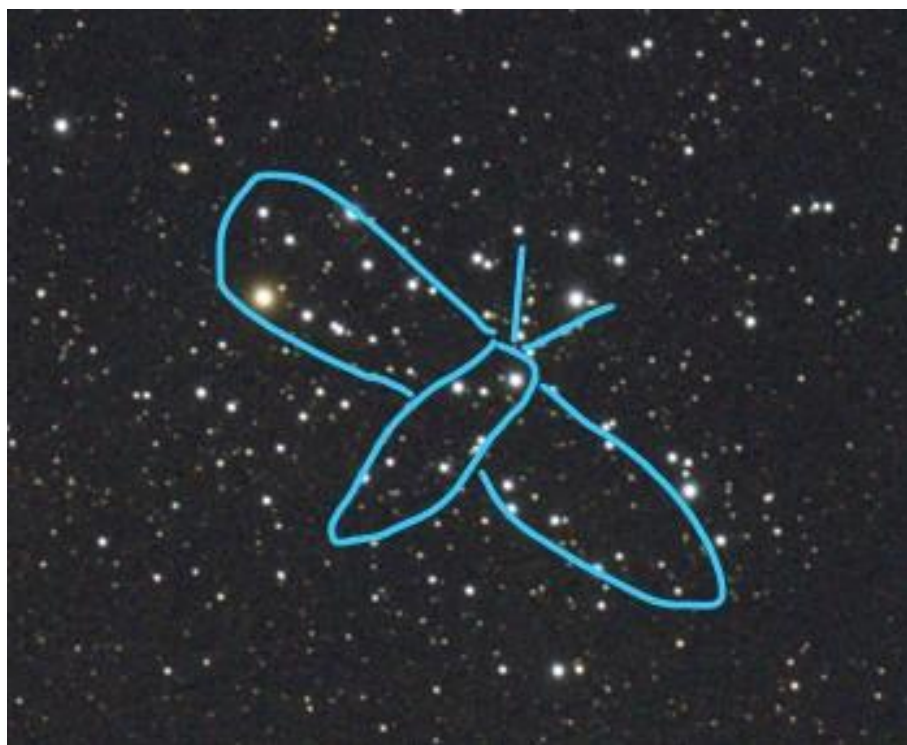


Image Credit: Don Knabb

the bow of Sagittarius and the tail of Scorpius: At simple view [with the naked eye], this cluster appears to form a nebula without stars, but the slightest instrument which one employs to examine it makes one see that it is nothing

but a cluster of small stars."

Robert Burnham, Jr. comments "The present author regards this as one of the most attractive clusters in the heavens

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Location of M6 between Sagittarius & Scorpius (Image credit: Stellarium planetarium software)

Light Pollution (Cont'd)

(Continued from page 3)

bill, streetlights suddenly become less of a priority.

And did you ever wonder about the cost savings from LED lights? Here's a comparison. Boston spent \$750K in 2024 operating 2,800 gas streetlights at \$261 each annually. LED equivalents cost an estimated \$30 per fixture, per year. The math isn't subtle.

Zebra finches exposed to any nighttime light, even as low as 2 lux, shifted eating into dark hours and showed metabolic disruption despite eating the same daily food intake. Timing drove the harm, not quantity.

Also in bird news, more evidence that glare is a chief culprit in bird collisions. Leach's Storm-Petrels proved 9x more likely to collide with lit surfaces than un-

lit ones. Black surfaces reduced collisions 66%. Textured surfaces showed promise.

Reef fish in the Gulf of Aqaba showed sleep disruption from artificial light correlated with elevated DNA damage markers in brain neurons, with effects persisting across five months.

Finally, sad news from Lebanon. Marine conservationist Mona Khalil, who protected loggerhead and green sea turtles along Lebanon's coast for decades, passed at 76 from injuries sustained in an Israeli airstrike this past June. Her work will continue through the people she trained.

And in space tourism and astronomy news, Clear Sky Chart's Attila Danko will live on at the Lennox and Addington

County Dark Sky Viewing Area in Southern Ontario. Attila's wife, Ingrid, donated his 25" Obsession telescope to the site. The telescope has officially been dubbed the 'Attila Danko Telescope' and will be housed in a storage facility called the 'Attila Danko Space Port.'

Lastly, Saudi Arabia, a kingdom known for grand ideas, has the grandest observatory idea of all time. As if a scene right out of Dune, the Kingdom plans to build an observatory for the layman, not the scientists (though the site will house scientific telescopes). The facility contains a series of protruding tubes that extend out from a center area in any number of lengths. Think, refractor spaghetti. Heatherwick Studio did the design for this unique space in AIUla.

Eye piece (Cont'd)

(Continued from page 10)

for small instruments, a completely charming group whose arrangement suggests the outline of a butterfly with open wings."

So while this beautiful cluster is visible low in the south during the summer months don't miss the opportunity to gaze upon it and look for the butterfly in the sky!

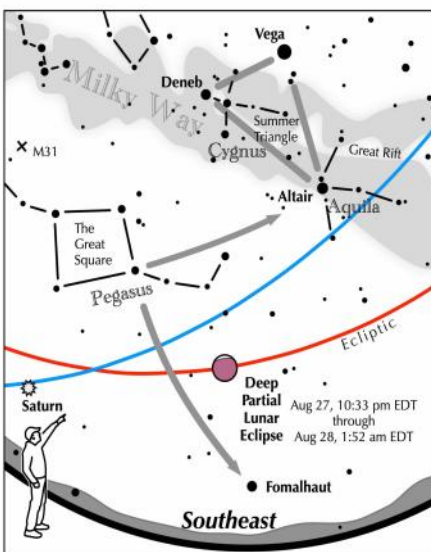
Information credits:

- Dickinson, Terence 2006. *Nightwatch: a practical guide to viewing the universe*. Buffalo, NY. Firefly Books
- http://en.wikipedia.org/wiki/Butterfly_Cluster
- <http://www.theskyscrapers.org/messier-6-and-messier-7>
- <http://www.universetoday.com/31219/messier-6/>

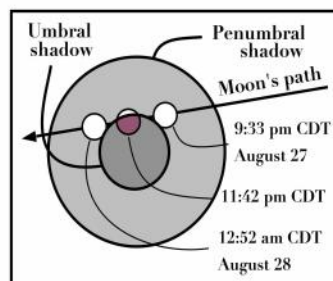
Observing the August 2026 Lunar Eclipse

courtesy of the Astronomical League

If you can observe only one celestial event in the evening this August, see this one.



View to the southeast
on August 27-28
Mid eclipse: Aug 27, 11:42 pm CDT



The Moon slides through a deep partial eclipse

In the late evening hours on August 27 into the early morning hours on August 28, the brilliant full moon slides into Earth's shadow.

- Even though the partial umbral eclipse begins at 9:33 pm CDT on Aug 27, any dark bite might not be noticed for another 5 minutes.
- At mid eclipse (11:42 pm CDT Aug 27) when 93% of the moon lies in the umbral shadow, what color is the moon? How red is it?
- Do you notice that the shadow's edge is not straight, but curved?



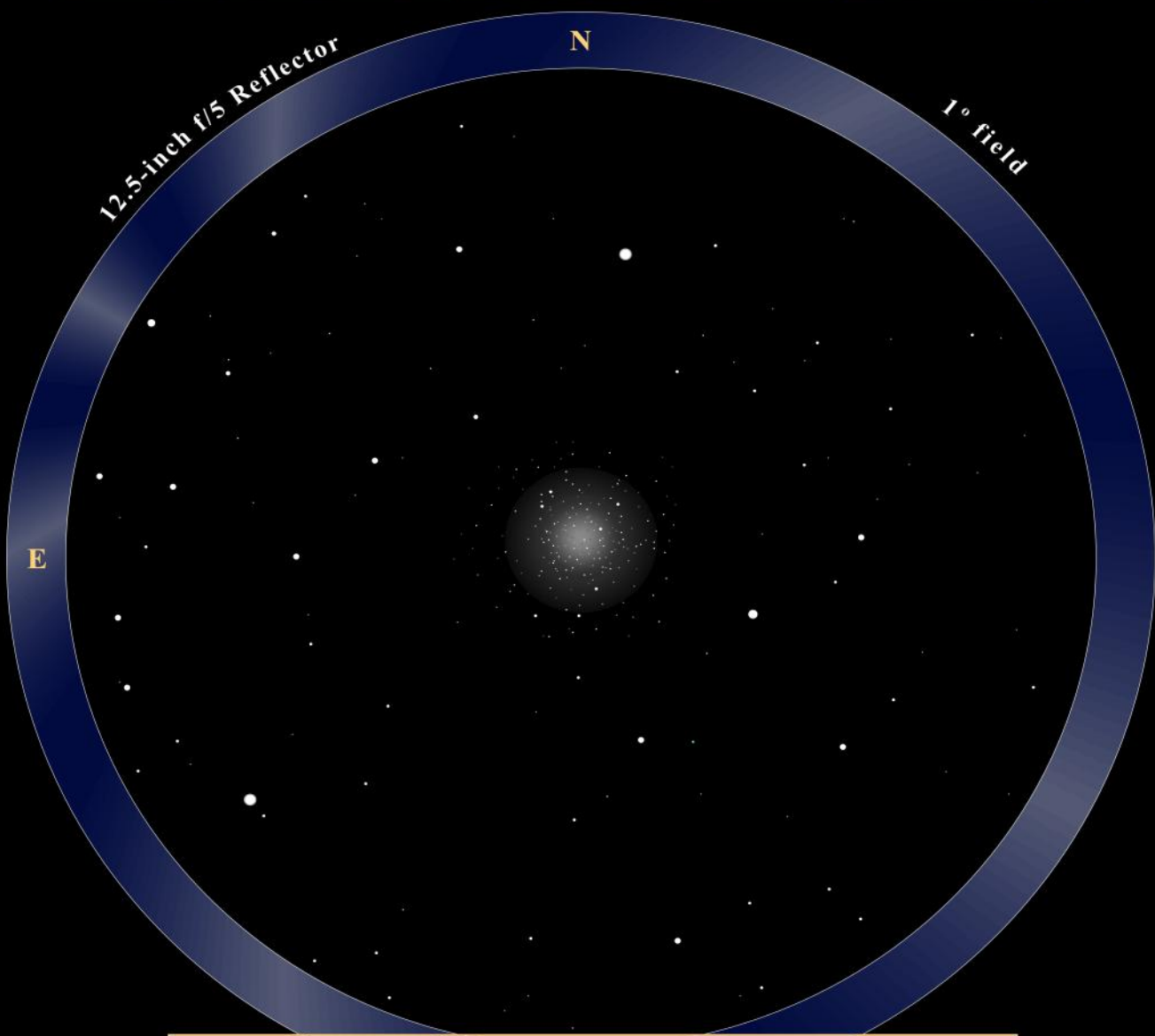
Authentic Observing Experience: M10



Wide field, low power eyepiece view

If you wonder why someone is excited to have a chance at the eyepiece, try visualizing what they will experience and what they will see. After all, an eyepiece view of a celestial wonder is much different than looking at an astro-image. **It is active. It is personal. It is real.**

Hold this screen as close to you as you can while still seeing a focused image.



**Witnessing scenes like this is one reason why we do what we do.
This is one aspect of the Authentic Observing Experience.**

Speaker Bio (Cont'd)

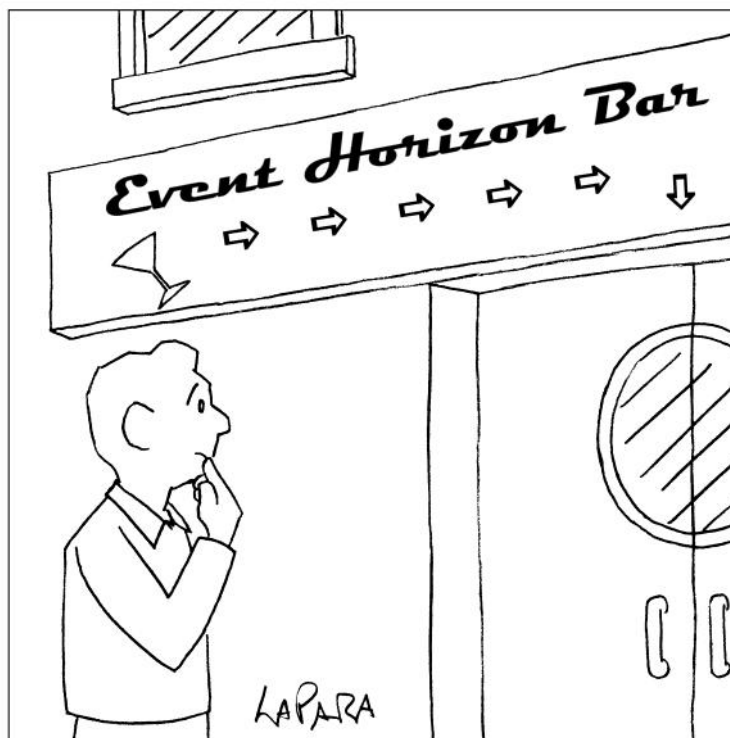
(Continued from page 7)

This talk will pay special attention to very recent developments in this area, specifically the February 2026 James Webb Space Telescope observations of one of these ultra-near-Earth objects, Kamo'oalewa, followed by that asteroid's visitation by the Tianwen-2 spacecraft in July 2026.

Biosketch: Dr. Teddy Kareta is a planetary astronomer who studies the origin of the Solar System through studying the comets, asteroids, and interstellar objects inside of it with telescopes, spacecraft, and computer models. Originally from Brookline, Massachusetts, he received his Bachelors' degrees in Astronomy and Physics from the University of Massachusetts Am-

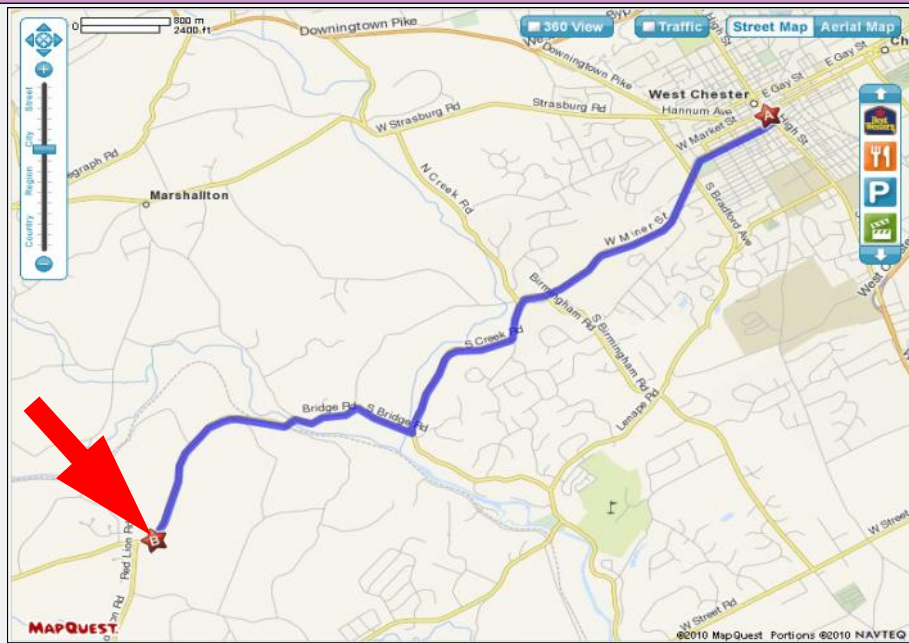
(Continued on page 14)

Classic La Para by Nicholas La Para



HERBERT HESITATES BEFORE STOPPING FOR A DRINK ON
HIS WAY HOME ...

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.

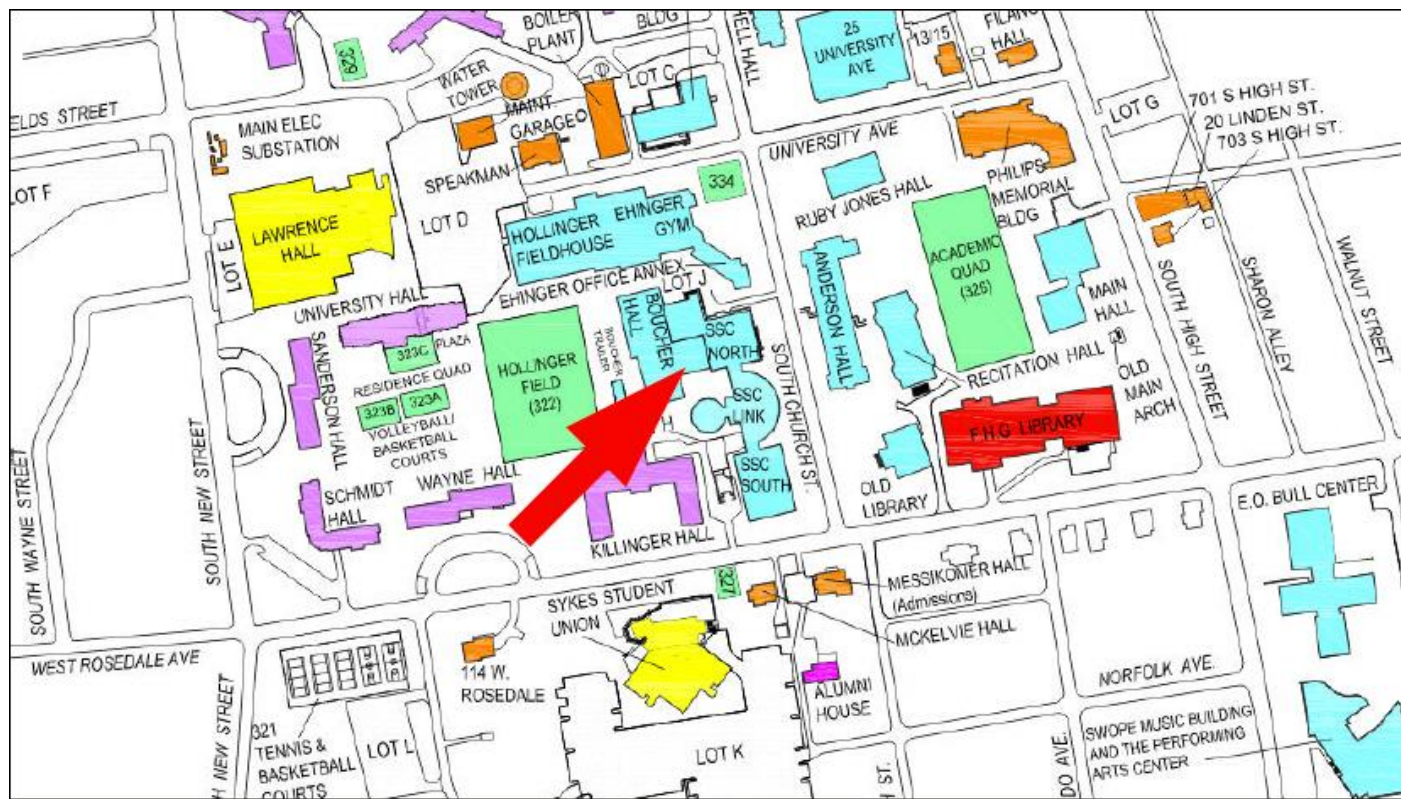
To get to the Myrick Conservation Center from West Chester, go south on High Street in West Chester past the Courthouse. At the next traffic light, turn right on Miner Street, which is also PA Rt. 842. Follow Rt. 842 for about 6 miles. To get to the observing site at the BRC property, turn left off Route 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).

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).



Speaker Bio (Cont'd)

(Continued from page 13)

herst in 2017 and subsequently received his doctorate in Planetary Science from the University of Arizona in 2021. He has played critical roles in NASA's Double Asteroid Redirection Test ("DART") and OSIRIS-REx missions to the near-Earth asteroids as well as the European Space Agency's Rosetta mission to Comet 67P/C-G and is one of the science advisors to the NASA Jet Propulsion Laboratory's spacecraft mission design school. Since 2025, he has been an Assistant Professor of Astrophysics and Planetary Science at Villanova University.

CCAS Membership Information and Society Financials

Treasurer's Report by Don Knabb

June 2026 Financial Summary

Beginning Balance	\$1294
Deposits	\$115
Disbursements	-\$0
Ending Balance	\$1409

New Member Welcome!

Welcome to new CCAS members the Justin Silang and Divina Perera family from Downingtown, 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 \$35.00 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

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.



High Point Scientific is a retailer of telescopes, binoculars, eyepieces and telescope accessories from Meade, Celestron, Televue, Orion, StellarMate, Takahashi, and many more. They also have an extensive blog of advice and education for amateur astronomers.

High Point Scientific

442 Route 206

Montague NJ, 07827

Phone: 800-266-9590

<https://www.highpointscientific.com/>



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 484-888-1831.

Contributing to Observations

Contributions of articles and images 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 to:

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

The deadline for submissions to the monthly newsletter is the 26th of each month. Articles and images should be original or the author/artist must be given credit. Articles should be in MS Word format with 12 point Times New Roman Font with single row spacing and one-inch margins on all four sides. Images should be in JPG or PNG file format. The submission window opens on the 20th of each month.

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.

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

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
484-888-1831

Observing: Don Miller
610-247-8712

Secretary: Beatrice Mazziotta
610-933-2128

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

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: 484-888-1831
e-mail: treasurer@ccas.us

Sky & Telescope Magazine

The club membership subscription cost for *Sky and Telescope* magazine has increased to **\$45.75**. This is still a good saving from the regular rate of **\$57.75**.

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 484-888-1831.

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.

