



Observations

A Monthly Publication Of The
CHESTER COUNTY ASTRONOMICAL SOCIETY

Vol. 32, No. 9 **Three-Time Winner of the Astronomical League's Mabel Sterns Award** ☼ 2006, 2009 & 2016 September 2024

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Powell Observatory Presentation at ALCON 2024



The 2024 Astronomical League Convention was held in Kansas City, Missouri. The Kansas City Astronomical Society hosted the convention, including presentations at the club's observatory. Image Credit: Don Knabb. See pg. 2 for more photos from this year's ALCON.

Membership Renewals Due

09/2024	Atmore Das Holloway Hopper Matas Okpaku Reilly Squire
10/2024	Abbott Conrad Lane Lester Levin Payton Richardson Wirth
11/2024	Buczynski DiGiovanni Harner Holenstein Hufnagel Marks Romer Smith Wilson

September 2024 Dates

- 2nd • New Moon, 9:56pm EDT.
- 4th • Mercury at its greatest western elongation (18°)
11:00 p.m. EDT.
- 11th • First Quarter Moon, 2:06 a.m. EDT and Lunar
Straight Wall this evening.
- 17th • A Partial Lunar Eclipse with favorable views
from eastern North America occurs around 8:41
p.m. EDT.
- 17th • Full Harvest Moon, 10:34 p.m. EDT. .
- 22nd • Moon and M45 Pleiades conjunction.
- 23rd • Moon passes 5° north of Jupiter 7:00 p.m. EDT.
- 24th • Last Quarter Moon 2:50 p.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 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, September 13, 2024 - CCAS Special Observing Session, Star Party at Tyler Arboretum, Media, PA. The event is scheduled 8:00 to 10:00 p.m. EDT.
- ☼ Saturday, September 14, 2024 - CCAS Special Observing Session: International Observe the Moon Night 2024 & Walk When the Moon is Full w/ Malvern Arts Paoli Battlefield Historical Park, Malvern PA.
- ☼ Saturday, September 21, 2024 - CCAS Special Observing Event with Malvern Area Public Library at Bacton Hill Park, Malvern, PA. The event is scheduled from 7:30 to 10:00 p.m. EDT.

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

Summer/Autumn Society Events

September 2024

13th • CCAS Special Observing Session: Star Party at Tyler Arboretum, Media, PA, 8:00 p.m. to 10:00 p.m. EDT.

14th • CCAS Special Observing Session, International Observe the Moon Night 2024 and Walk When the Moon is Full w/Malvern Arts at Paoli Battlefield Historical Park, Malvern PA. The observing session is scheduled to run 7:30 to 9:30 p.m. EDT.

17th • CCAS Monthly Meeting, in person (as well as via Zoom) at West Chester University's Merion Science Center, Room 112. Speaker: John Conrad NASA Solar System Ambassador and CCAS Member, "Spaceships for the 21st Century (aka SpaceX and the 7 Little Dwarfs)".

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

21st • CCAS Special Observing Session with Malvern Area Public Library at Bacton Hill Park, Malvern, PA. The observing session is from 7:30 p.m. to 10:00 p.m. EDT.

22nd • Autumnal Equinox, 9:03 p.m. EDT.

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

October 2024

4th • 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.

8th • CCAS Monthly Meeting, in person (as well as via Zoom) at West Chester University's Merion Science Center, Room 112. Guest Speaker: Dr. Scott Engles, Dept of Astronomy and Physics, Villanova University, "Evolution of M-class Dwarf Stars – Impact on Planetary Formation and Planetary Habitability."

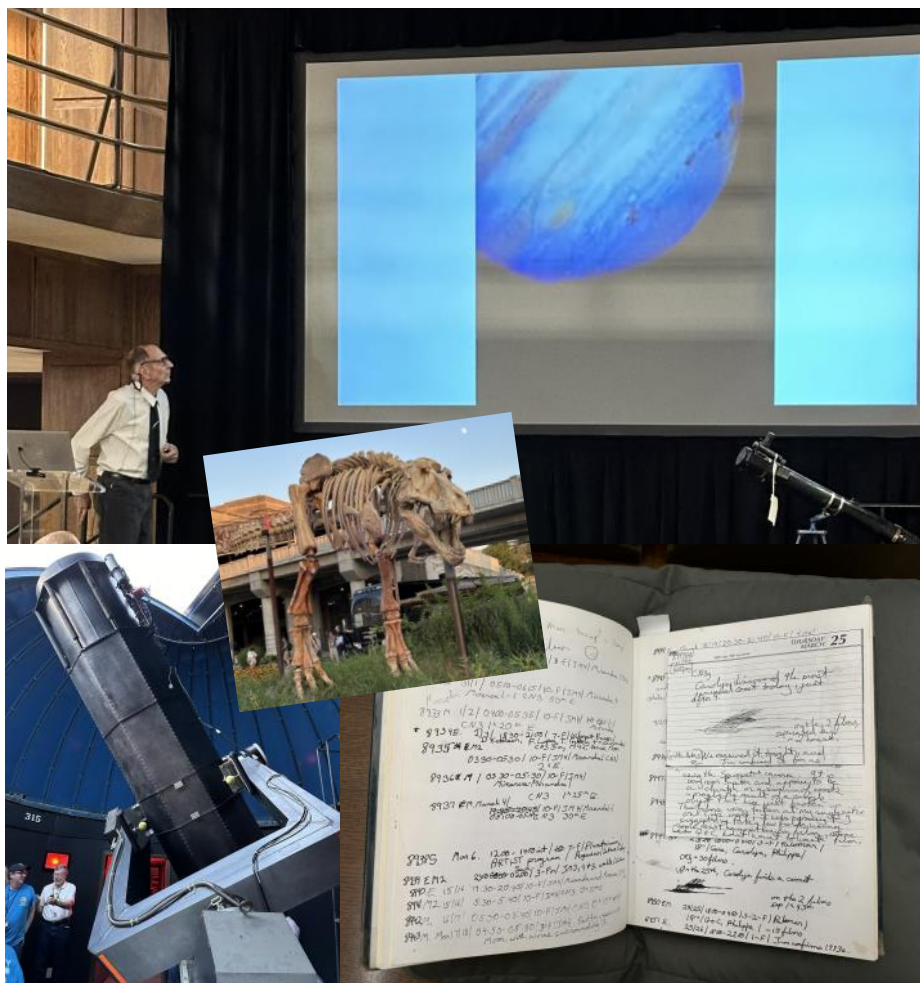
20th • Open call for articles and photographs for the November 2024 edition of [Observations](#).

23rd • CCAS Special Observing Session with Atglen Public Library in Wolf's Hollow Park, Atglen, PA. The observing session is from 7:00 p.m. to 10:00 p.m. EDT.

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

Images from ALCON 2024

by Don Knabb, CCAS Treasurer & ALCOR



David Levy's presentation and a close-up of his notebook open to pages noting the discovery of comet Shoemaker-Levy 9. The Kansas City Astronomical Society's reflector inside the Powell Observatory. Surprise! How often does a Tyrannosaurus Rex turn up in an astronomical society newsletter?

September 2024 CCAS Meeting Agenda

by Bruce Ruggeri, CCAS Program Chair

Our next meeting will be held on September 17, 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. Member Speaker: John Conrad, NASA Solar System Ambassador and CCAS Member, "Spaceships for the 21st Century (aka SpaceX and the 7 Little Dwarfs)".

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 beyond our 2024-2025 season. If you are interested in presenting, or know someone who would like to participate, please contact me at programs@ccas.us.

September 2024 Meeting Details & Speaker Profile

by Bruce Ruggeri, CCAS Program Chair

I hope all is well with all of you and your families and that you had a wonderful summer. As we begin our Fall 2024 program of monthly meetings, I am pleased to announce our in person and Zoom CCAS re-scheduled monthly meeting for Tuesday, September 17 commencing at 7:00 pm ET. Our guest speaker is John Conrad, NASA Solar System Ambassador and CCAS member, who has been a long-time contributor to the CCAS and other local astronomical societies.

This time last year John presented a presentation on “NASA's Osiris-Rex Sample Return Mission from Asteroid Bennu”. This month we have a timely presentation from John focused on the history, progress, and key players in the US commercial space industry. The CCAS meeting presentation will

commence at approximately 7:50 PM ET. 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.

The presentation title, synopsis and bio sketch for John Conrad are provided below:

Title: *Rocket ships of the 21st Century: SpaceX and the Seven Little Dwarves*

This presentation will begin with the historical context of how the 20th century prepared us for today's more dynamic – and fortunately more affordable – capabilities for launching payloads into low earth orbit (LEO) and beyond. What has happened in the last couple decades is truly astonishing, a story of what commercial business types like to refer to as Disruptive Technolo-

gy changes. The starting gun (guns actually), which may have been long overdue, include NASA's commercial space initiatives. The speaker's view of the U.S. rocket industry 'lay-of-the-land' covers the 8 principal U.S. players. The impact and implications of these developments in the U.S. commercial launch industry will be discussed.

About the speaker: John Conrad followed his childhood interest in space and spaceflight – just before the dawn of the Space Age – earning his Astronautical Engineering degrees from the U.S. Air Force Academy and Purdue University and assuming leadership roles in space programs for the Air Force, NASA, and the aerospace industry.

Upon retirement, he was selected by NASA/JPL as a NASA

(Continued on page 11)

In Memoriam: Gary Zibinski

by Dave Hockenberry, CCAS President



Gary Zibinski with his scope at one of his favorite observing spots at his brother's place near the Delaware Gap.

With a heavy heart, I must deliver some sad news. One of our own, Gary Zibinski, passed away August 27th, 2024, after a long struggle with Lou Gehrig's disease. He was a long-time member of the Chester County Astronomical Society. Gary was an avid visual astronomer, and his Meade LX90 was a frequent sight at many CCAS activities.

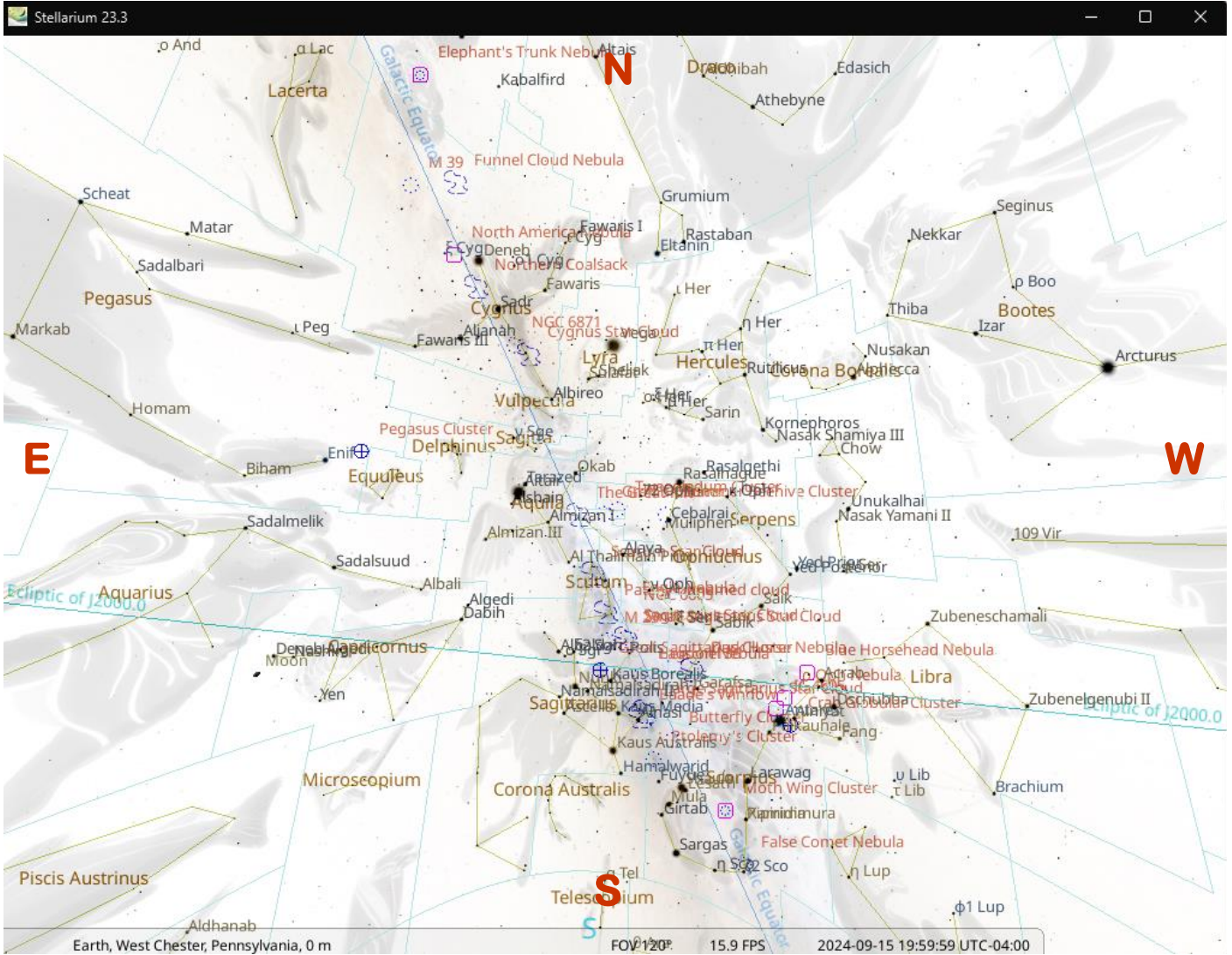
For many years Gary was one of those reliable folks who would show up for scheduled events and public star parties. He always maintained a quiet, unassuming demeanor when

(Continued on page 12)

The Sky Over Chester County

September 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.



Date	Civil Twilight Begins	Sunrise	Sunset	Civil Twilight Ends	Length of Day
09/01/2024	6:03 a.m. EDT	6:30 a.m. EDT	7:32 p.m. EDT	8:00 p.m. EDT	13h 02m 08s
09/15/2024	6:16 a.m. EDT	6:43 a.m. EDT	7:10 p.m. EDT	7:37 p.m. EDT	12h 26m 13s
09/30/2024	6:31 a.m. EDT	6:58 a.m. EDT	6:45 p.m. EDT	7:12 p.m. EDT	11h 47m 10s

Moon Phases					
			New Moon	09/02/2024	9:55 p.m. EDT
First Quarter	09/11/2024	2:05 a.m. EDT	Full Moon	09/17/2024	10:34 p.m. EDT
Last Quarter	09/24/2024	2:49 p.m. EDT			

September 2024 Observing Highlights

by Michael Manigly, CCAS Observing Chair

2	New Moon 9:56pm EDT.
4	Mercury at its greatest western elongation (18°) 11:00 p.m. EDT.
5	Venus 1.2° to the right of the Moon this evening. Also, Saturn reaches opposition and is positioned at its closest point to Earth this year.
8	Mars 0.9° below M35 Shoe-Buckle Cluster after midnight EDT. Also, Saturn at opposition 1:00 a.m. EDT.
11	First Quarter Moon, 2:06 a.m. EDT and Lunar Straight Wall this evening.
17	Full Harvest Moon, 10:34 p.m. EDT. Another name for the September Full Moon is the Mate Calling Moon. A Partial Lunar Eclipse with favorable views from eastern North America occurs around 8:41 p.m. EDT.
20	Neptune at opposition with the planet rising around sunset and is viewable all night. The planet is the brightest it will appear this year and can be located between Pisces and Aquarius.
22	Autumnal equinox (fall arrives in the Northern Hemisphere) 8:42 p.m. EDT. Also, Moon and M45 Pleiades conjunction.
23	Moon passes 5° north of Jupiter 7:00 p.m. EDT.
24	Last Quarter Moon 2:50 p.m. EDT.

September observing highlights show a gradual

shift of several planets, in particular, Mars, Jupiter and Saturn, from predawn hours to eventual evening targets. Summer constellations and asterisms viewable include of Cassiopeia, Ursa Major, Cygnus, Delphinus, Equuleus and Vulpecula. Multiple Messier/deep sky objects continue to be available during the late summer/early fall months. Another spectacular event that may be visible to the naked eye in September is the T Coronae Borealis (TCrB) nova which occurs every 80 years or so.

Planets:

Mercury rises in the ENE around 4:00 a.m. and is best viewed low in the E sky at morning twilight.

Venus appears for about an hour but very low in the WNW sky around sunset. The planet has a conjunction with the waxing crescent Moon on the 5th.

Mars rises after 11:00 p.m. EDT in the ENE sky and is high in the south around dawn. It passes within 1° of M35 Shoe-Buckle Cluster on the 8th.

Jupiter rises after 10:00 p.m. EDT in the ENE sky and appears high in the south around dawn.

Saturn rises in the ENE sky at dusk, transits after midnight and sets in the WSW around 5:00 a.m. EDT. The planet achieves opposition on the 8th.

Uranus appears 5° SW of M45 Pleiades all month. The planet rise around 11 p.m. EDT on the 1st and earlier each night through the end of the month.

Neptune is viewable all night in SW Pisces.

Constellations and Asterisms: Cassiopeia, Ursa Major, Capricornus, Delphinus, Equuleus and Vulpecula. The Summer Triangle should be visible for naked eye observers.

Messier/Deep Sky Objects: M27 Dumbbell Nebula in Vulpecula, M30 globular cluster in Capricornus, CR399 The Coat Hanger cluster located south of Vulpecula NGC7635 Bubble Nebula in Cassiopeia and NGC281 Pacman Nebula in Cassiopeia.

Meteor Showers: None available in September skies.

Comets: 13P/Olbers may be viewable by setting up your telescope around sunset and viewing the NW horizon. However, it is best viewable at a dark sky location.

Asteroids: 7 IRIS

Through the Eyepiece: Messier 17, the Swan Nebula

by Don Knabb, CCAS Treasurer & ALCOR

While gazing into the wonders of the southern summer sky I ventured up from the star that is the top of the “teapot” of Sagittarius and came upon a distinct nebula. My star charts revealed this fuzzy spot to be Messier 17, which is known by many names, my favorite being the Swan Nebula. It is often called the Omega Nebula or the Horseshoe Nebula and even the Lobster Nebula. In the New General Catalogue, it is designated as NGC 6618.

Below is a picture of the Swan Nebula that was taken by CCAS member Brent Crabb of Fountain Valley, California.

Using 600mm focal length binoculars fitted with 15mm eyepieces I observed the nebula at 40X. What I saw was not like Brent’s excellent photograph, but I had a clear view of the bright central section of the nebula. The nebula stands out well from the rich star field in which it resides.

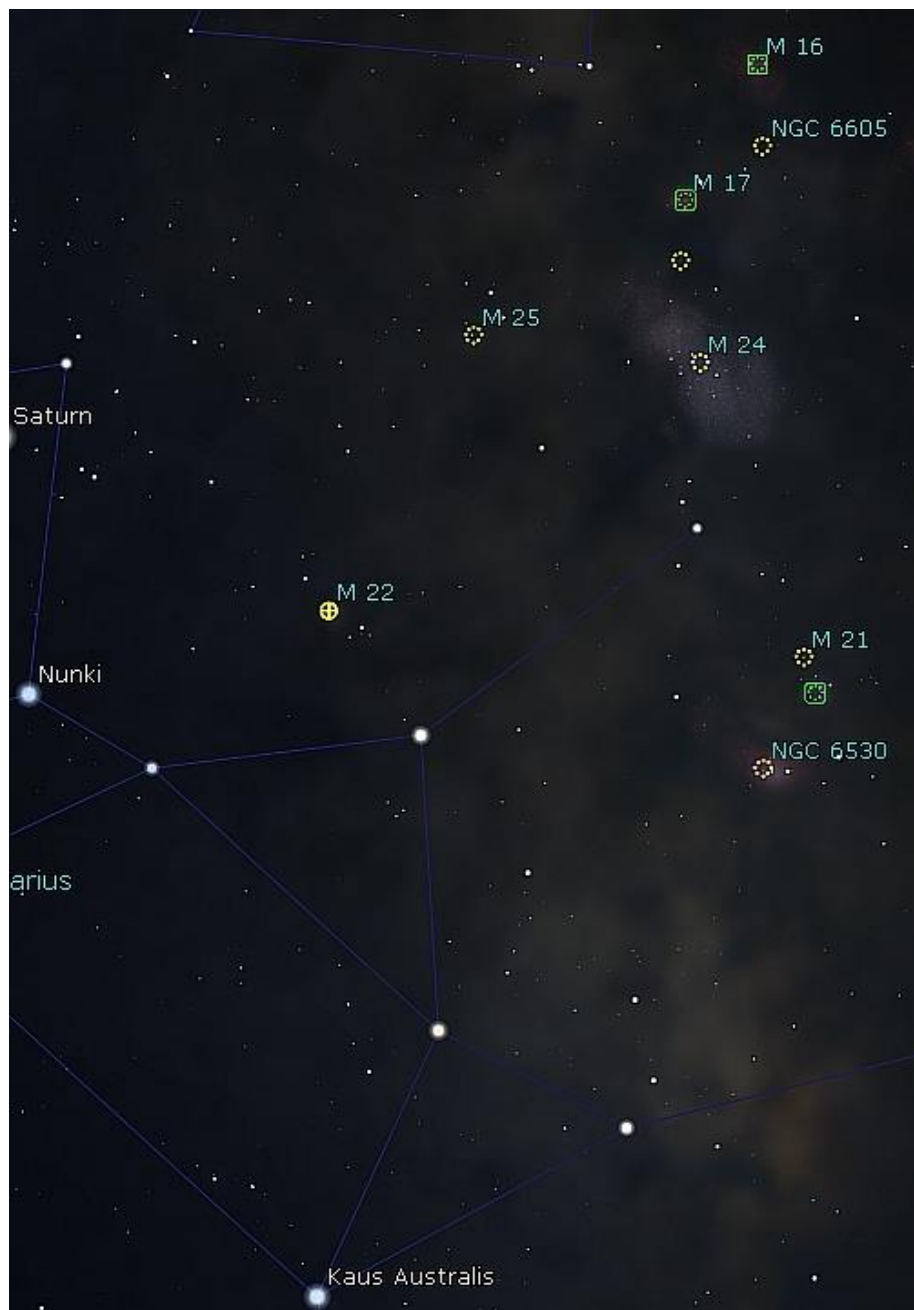
The Swan Nebula is between 5,000 and 6,000 light-years from Earth and it spans some 15 light-years in diameter. The cloud of interstellar matter of which this nebula is a part is roughly 40 light-years in diameter. The total mass of the Swan Nebula is an estimated 800 solar masses! This makes the Swan Nebula larger than the more famous Orion Nebula, M42, that is a favorite object of our winter skies.

(Continued on page 7)



Photo by Brent Crabb, astrophotographer, taken with a Celestron Origin Intelligent Home Observatory automated telescope and edited with Stirl imaging software

Eyepiece (Cont'd)



Star map created with Stellarium, the free planetarium program

(Continued from page 6)

This object was discovered by Philippe Loys de Chéseaux in 1745. De Chéseaux's discovery was not widely known, thus Charles Messier independently rediscovered it and cataloged it on June 3, 1764.

If you are in a dark sky location, you can identify M17 in binoculars or a telescope by starting at the M24 "Star Cloud" north of Lambda Sagittari (the teapot lid star) and simply scan north. This nebula is bright enough to even cut through

moderately light polluted skies, but don't expect to see it when the Moon is nearby. You'll enjoy the rich star fields combined with an interesting nebula in binoculars, while telescopes will easily begin resolution of interior stars.

To the left is a star map of the northern section of Sagittarius. M17 is near the top of the map.

Under very favorable conditions, M17 is just visible to the unaided eye at its apparent visual brightness of 6.0 magnitudes. I was barely able to pick out M17 with my unaided eyes, but the nearby Small Sagittarius Star Cloud, M24, was more easily visible, as was the Lagoon and Trifid Nebulas.

We still have September to enjoy the many Messier objects in this section of the sky, so don't miss the opportunity to see M17 before it ducks (or swans) back under our horizon as summer turns to fall.

Information credits:

- French, Sue. *Celestial Sampler 2006*. Cambridge, MA. Sky Publishing.
- http://en.wikipedia.org/wiki/Messier_17
- <http://www.seds.org/messier/m/m017.html>
- <http://www.universetoday.com/31710/messier-17/>

Night Sky Notes: Marvelous Moons

by Kat Roche

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 to find local clubs, events, stargazing info and more.

September brings the gas giants Jupiter and Saturn back into view, along with their satellites. And while we organize celebrations to observe our own Moon this month, be sure to grab a telescope or binoculars to see other moons within our Solar System! We recommend observing these moons (and planets!) when they are at their highest in the night sky, to get the best possible unobstructed views.

The More the Merrier

As of September 2024, the ringed planet Saturn has 146 identified moons in its orbit.



These celestial bodies range in size; the smallest being a few hundred feet across, to Titan, the second largest moon in our solar system.

Even at nearly 900 million miles away, [Titan](#) can be easily spotted next to Saturn with a 4-inch telescope, under urban and suburban skies, due to its sheer

size. With an atmosphere of mostly nitrogen with traces of hydrogen and methane, Titan was briefly explored in 2005 with the [Huygens probe](#) as part of the [Cassini-Huygens mission](#), providing more information about the surface of Titan. NASA's mission [Dragonfly](#) is set to explore the surface of Titan in the 2030s.

Saturn's moon [Enceladus](#) was also explored by the Cassini mission, revealing plumes of ice that erupt from below the surface, adding to the brilliance of Saturn's rings. Much like our own Moon, Enceladus remains tidally locked with Saturn, presenting the same side towards its host planet at all times.

(Continued on page 9)



The Saturnian system along with various moons around the planet Saturn: Iapetus, Titan, Enceladus, Rhea, Tethys, and Dione.

Credit: Stellarium Web

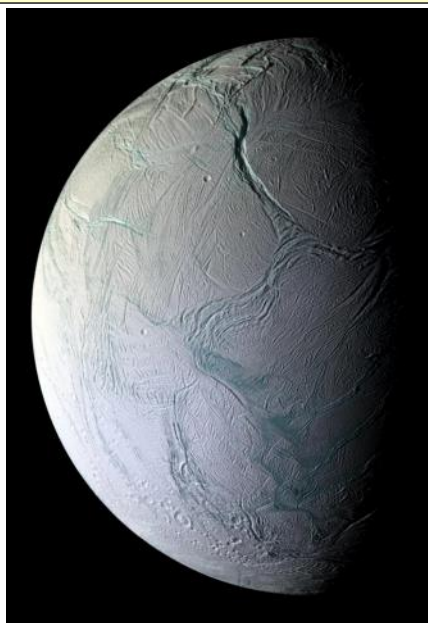
Night Sky Notes (Cont'd)

(Continued from page 8)

The Galilean Gang

The King of the Planets might not have the most moons, but four of Jupiter's 95 moons are definitely the easiest to see with a small pair of binoculars or a small telescope because they form a clear line. The Galilean Moons – Ganymede, Callisto, Io, and Europa – were first discovered in 1610 and they continue to amaze stargazers across the globe.

- **Ganymede**: largest moon in our solar system, and larger than the planet Mercury, Ganymede has its own magnetic field and a possible saltwater ocean beneath the surface.
- **Callisto**: this heavily cratered moon is the third largest in



This mosaic of Saturn's moon Enceladus was created with images captured by NASA's Cassini spacecraft on Oct. 9, 2008, after the spacecraft came within about 16 miles (25 kilometers) of the surface of Enceladus. Credit: NASA/JPL/Space Science Institute

our solar system. Although Callisto is the furthest away of the Galilean moons, it on-

ly takes 17 days to complete an orbit around Jupiter.

- **Io**: the closest moon and third largest in this system, Io is an extremely active world, due to the push and pull of Jupiter's gravity. The volcanic activity of this rocky world is so intense that it can be seen from some of the largest telescopes here on Earth.
- **Europa**: Jupiter's smallest moon also happens to be the strongest candidate for a liquid ocean beneath the surface. NASA's [Europa Clipper](#) is set to launch October 2024 and will determine if this moon has conditions suitable to support life. Want to learn more? Rewatch the July 2023 Night Sky Net-

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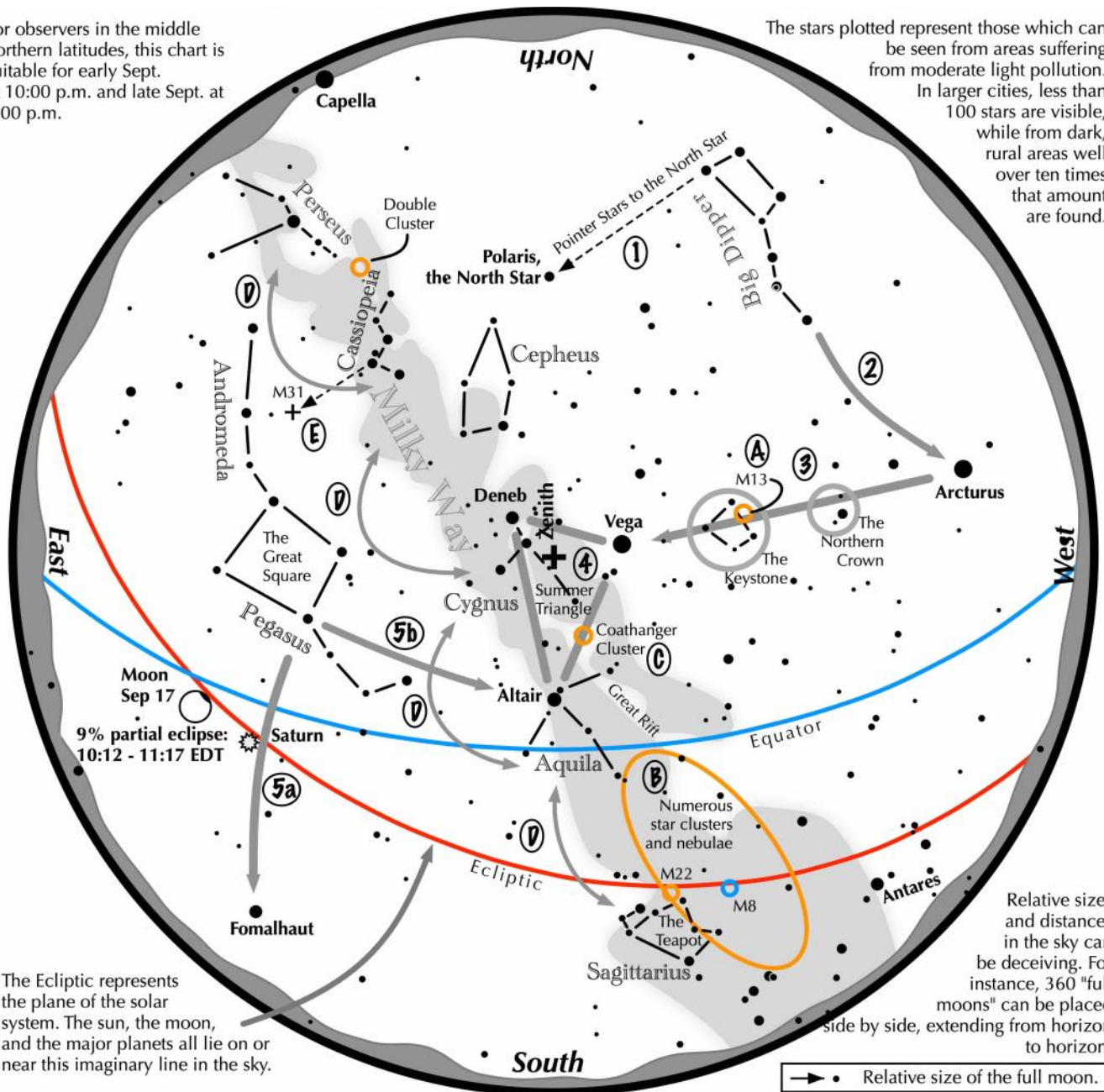
The Jovian system: Europa, Io, Ganymede, and Callisto. Credit: Stellarium Web

Navigating the Mid-September 2024 Night Sky

courtesy of the Astronomical League

For observers in the middle northern latitudes, this chart is suitable for early Sept. at 10:00 p.m. and late Sept. at 9:00 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.



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.

Navigating the mid September 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 September evening sky.
- 3 Nearly overhead shines a star of similar brightness as Arcturus, 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 The stars of the summer triangle, Vega, Altair, and Deneb, shine overhead.
- 5 The westernmost two stars of the Great Square, which lies high in the east, point south to Fomalhaut. The southernmost two stars point west to Altair.

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.



Speaker Bio (Cont'd)

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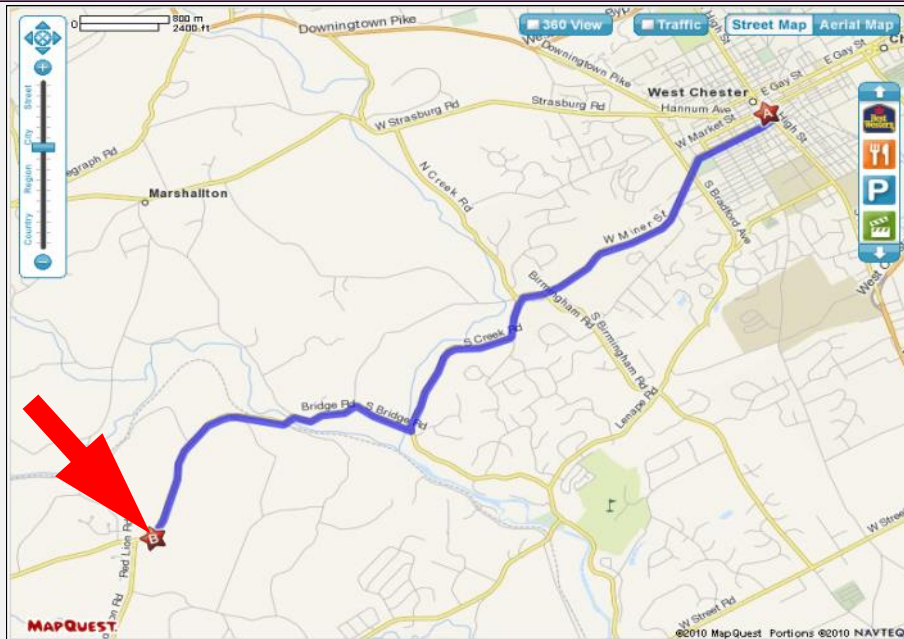
Solar System Ambassador. In this role, he reaches a broad range of audiences with the latest and greatest in NASA's programs and achievements. John has been an active member of CCAS and The Planetary Society and speaker for events in both organizations, addressing a number of topics drawing considerable interest from diverse audiences. Among the most notable of John's presentations are: Global Climate Change: The View from Space; A Hitchhiker's Guide to the Solar System – Celebrating the 60th Anniversary of NASA; The Cassini/Huygens Mission to Saturn and its Moons; DART- The World's First Asteroid Deflection Test; and most recently, NASA's Osiris-Rex Sample Return Mission from Asteroid Benu.

Classic La Para

by Nicholas La Para



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.

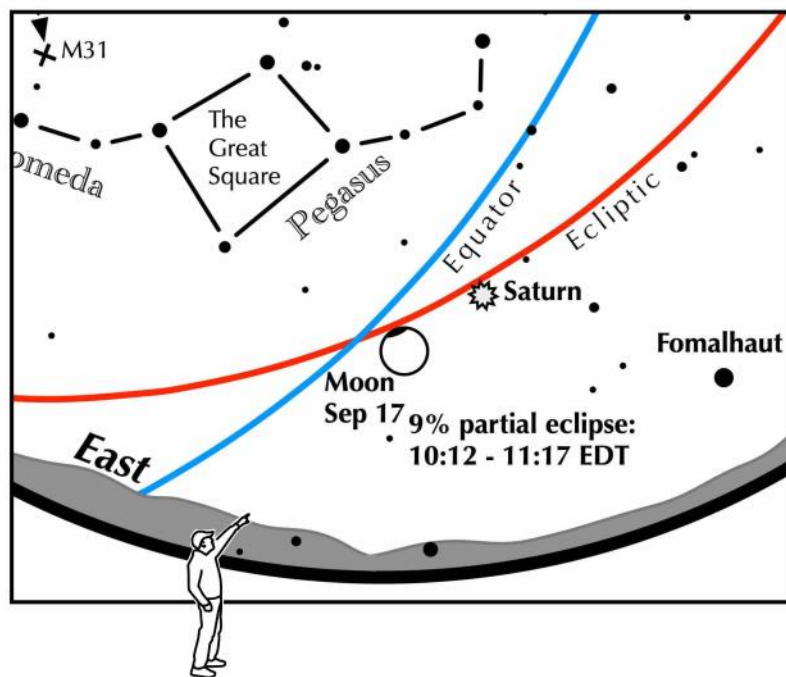
To get to the Myrick Conservation Center from West Chester, go south on High Street in West Chester past the Courthouse. At the next traffic light, turn right on Miner Street, which is also PA Rt. 842. Follow Rt. 842 for about 6 miles. To get to the observing site at the BRC property, turn left off Route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

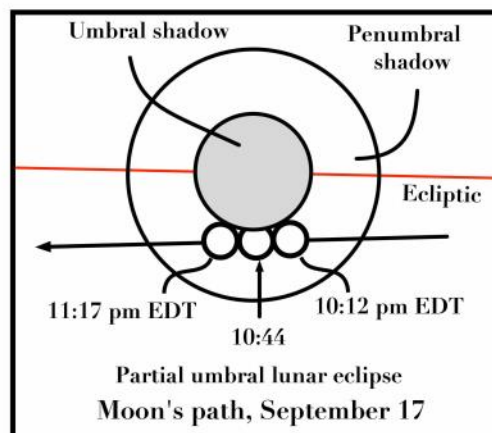
Partial Lunar Eclipse

courtesy of the Astronomical League

A partial lunar eclipse that is a nibble, not a bite!



View to the southeast on September 17
from 10:12 through 11:17 pm EDT.
Mid eclipse lands at 10:44 pm



The Moon slides through a partial umbral eclipse

A very partial umbral lunar eclipse occurs on the night of September 17. Bring out the binoculars for a better look at Earth's shadow taking a nibble out of the moon. Only about 9% of the surface will be in umbral shadow. The event will be slight enough that the casual observer might not notice it.

Mid eclipse and the best view occurs at 10:44 pm EDT. West Coast observers will find it low above the southeastern horizon.



In Memoriam (Cont'd)

(Continued from page 3)

setting up his trusty blue tube on the observing field. This quickly changed when it was time to show the public the sky, however, and he became a dynamic and enthusiastic astronomer, eager to share his knowledge and skills with our stargazing guests. His easy smile and friendly patience with the public was always appreciated.

Out of the many evenings we shared at public star parties, one event stands out in my mind. We had been asked to do an event at

East Goshen Park for a Girl Scout troop. It was short notice, but Gary as always was eager to help and for this event he recruited his daughter, Alexis (a Scout herself right through High School) to help out.

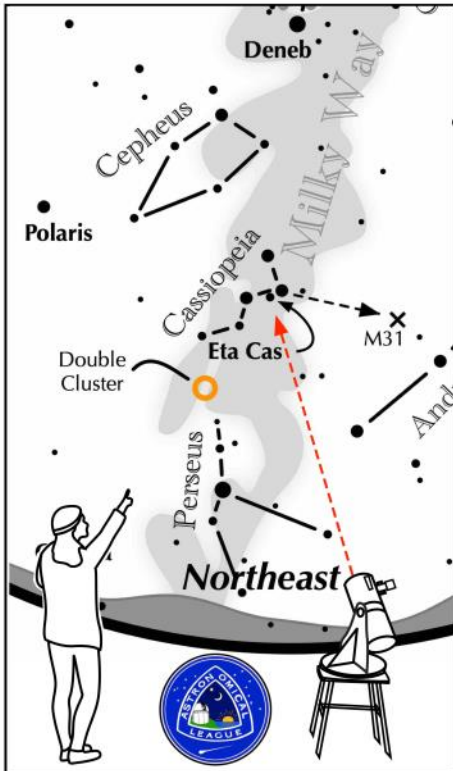
After our usual orientations we started showing the Scouts the sky. Gary had his Meade on the moon that night. At one point, one of the girls was absolutely fixed at Gary's eyepiece and wouldn't move. Usually with a large group of Scouts we had to keep things moving, but for

some reason Gary was letting this one girl stay at the eyepiece, and even sent some of the other scouts in line to other telescopes on the field so that this one youth could stay fixed on the moon.

Later, he came over and shared why. This Scout's mother had informed him that the poor girl's father had died recently, and that she was looking for her father's spirit on the moon. I think we all wanted to weep. It was so typical of the patience, understanding,

(Continued on page 13)

Double Star Challenge for September 2024
courtesy of the Astronomical League



Other Suns: Eta Cassiopeiae

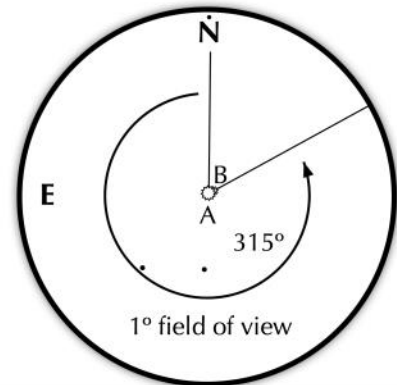
How to find Eta Cassiopeiae on a September evening

High in the northeast are the five moderately bright stars forming the "W" of Cassiopeia. The second star moving east along the W is Alpha Cassiopeiae. Eta is the dimmer star immediately to Alpha's northeast.

Suggested magnification: >30x
Suggested aperture: >2 inches

Beta Cassiopeiae

A-B separation: 13 sec
A magnitude: 3.5
B magnitude: 7.4
Position Angle: 319°
A & B colors:
yellow, purple?



Memoriam (Cont'd)



Image credit: map created using Stellarium planetarium software

at the eyepiece so special. I for one will never forget it. Gary will be deeply missed.

On behalf of CCAS I'd like to extend our sympathies and condolences to Gary's family and close friends at this difficult time. As of this writing funeral/memorial service plans are still being made, but as soon as those details are available, we will be sure to pass them along to our membership.

I'd also like to particularly thank Gary's daughter Alexis for keeping us informed and providing the picture of her dad with his scope at his brother's home. To the left is a memory from Hoopes Park in West Chester.

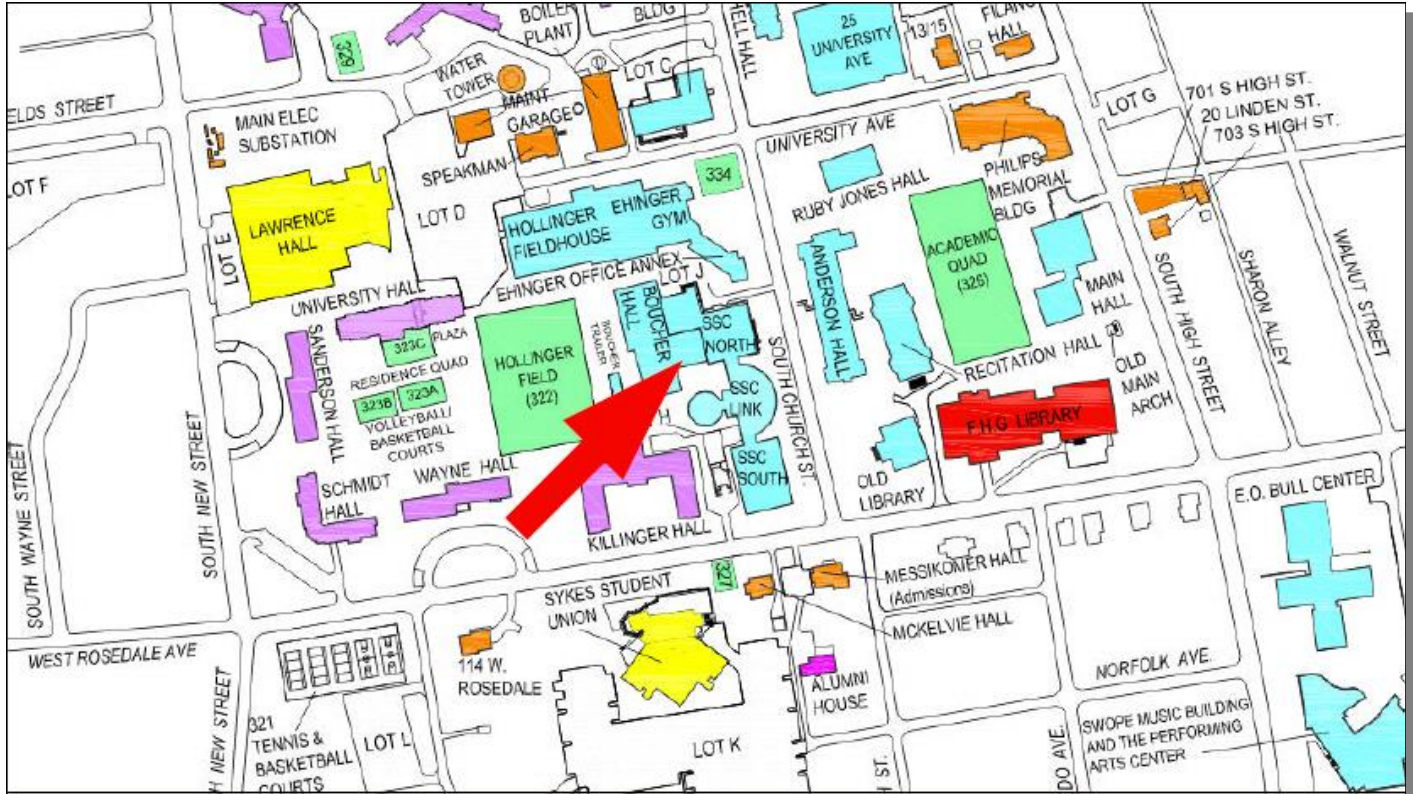
(Continued from page 12)
generosity, and humanity that

Gary brought to our CCAS events that made time with him

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).



Night Sky Notes (Cont'd)

(Continued from page 9)

work webinar about Europa Clipper [here](#).

Be sure to celebrate [International Observe the Moon Night](#) here on Earth September 14, 2024, leading up to the super full moon on September 17th! You can learn more about supermoons in our mid-month article on the [Night Sky Network](#) page!

CCAS Membership Information and Society Financials

Treasurer's Report by Don Knabb

August 2024 Financial Summary

Beginning Balance	\$1133
Deposits	\$170
Disbursements	-\$0
Ending Balance	\$1303

New Member Welcome!

Welcome to new CCAS member Tanmoy Sarkar from Devon, 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

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 610-436-5702.

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
610-436-5702

Observing: Michael Manigly
484-631-6197

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

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

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.