



Observations

A Monthly Publication Of The
CHESTER COUNTY ASTRONOMICAL SOCIETY

Vol. 33, No. 10 **Three-Time** Winner of the Astronomical League's Mabel Sterns Award ☼ 2006, 2009 & 2016 October 2025

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Astrophotography from Cherry Springs State Park



The Swan Nebula or Omega Nebula (M17). Image by CCAS President Dave Hockenberry. For more images from the Cherry Springs Camping/Observing Trip, see pg. 9.

Membership Renewals Due

10/2025	Abbot Conrad Fisher Kraynik Lane Lester Levin Payton Richardson Riley Rosenblatt Worth
11/2025	Baker Buczynski DiGiovanni Harner Holenstein Hufnagel Kurz Marks Pilgaonkar Prasad Packirisamy Scovill Skupien
12/2025	Damerau DeAngelo DellaPenna Etherington Kearns Kovic Nasserzad O'Leary

October 2025 Dates

- 5th • The Moon passes 4° north of Saturn, 11 p.m. EDT.
- 6th • Full Moon, the **Hunter's Moon**, 11:47 p.m. EDT.
- 12th • The Moon passes 5° north of Uranus, 10 p.m. EDT.
- 13th • Last Quarter Moon, 2:12 p.m. EDT.
- 29th • Mercury is at greatest eastern elongation (24°), 6 p.m. EDT.
- 21st • Mercury passes 2° south of Mars, 2 a.m. EDT.
- 21st • New Moon, 8:25 a.m. EDT.
- 21st-22nd • Orionid meteor shower peaks.
- 29th • First Quarter Moon, 12:20 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 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.

- ☼ Saturday, October 4, 2025 - CCAS Solar Observing Event, 10:30 a.m. to 1:00 p.m. EDT, with the Coatesville Library and Chester County Parks at SRT Fricks Lock Trailhead, 500 Fricks Lock Rd, Pottstown, PA 19465 (Rain date October 5th)
- ☼ Friday, October 10, 2025 - CCAS Special Observing Event, 6:30 p.m. to 10 p.m. EDT, at Hibernia Park.
- ☼ Saturday, October 11, 2025 - CCAS Solar Observing Session, 9:30 a.m. to 12:30 p.m. EDT, Downingtown Library.
- ☼ Saturday, October 25 - CCAS Solar Observing Event, 10:30 a.m. to 1:30 p.m. EDT, John Heinz Nature Center.

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

Autumn Society Events

October 2025

4th • CCAS Solar Observing Event, 10:30 a.m. to 1:00 p.m. EDT, with the Coatesville Library and Chester County Parks at SRT Fricks Lock Trailhead, 500 Fricks Lock Rd, Pottstown, PA 19465 (Rain date October 5th). For more information, contact our Observing Chair, [Don Miller](#).

4th • International Observe the Moon Night 2025, 7:30 p.m. to 9:30 p.m. EDT, with the WCU Astronomy Club. For more information, contact our Observing Chair, [Don Miller](#).

9th • CCAS Special Observing Event, 6:00 p.m. to 9:00 p.m. EDT, with the Middletown Free Library at 464 S. Old Middletown Rd, Media, PA 19063. For more information, contact our Observing Chair, [Don Miller](#).

10th • CCAS Special Observing Event, 6:30 p.m. to 10 p.m. EDT, at Hibernia Park. For more information, contact our Observing Chair, Don Miller.

11th • CCAS Solar Observing Session, 9:30 a.m. to 12:30 p.m. EDT, Downingtown Library. For more information, contact our Observing Chair, [Don Miller](#).

14th • CCAS Monthly Meeting, in person (as well as via Zoom) at WCU's Merion Science Center, Room 112. Guest speaker: Dr. Eric Huff, JPL / NASA, "The Euclid Space Telescope Mission – Shedding New Insights into Cosmology."

16th • CCAS Solar Observing Event, 10:30 a.m. to 1:30 p.m. EDT, West Chester Courthouse, 3 Market Street, West Chester, PA 19382.

20th • Open call for articles and photographs for the November 2025 edition of [Observations](#).

24th • CCAS Monthly Observing Session, Myrick Conservancy Center, BRC. The observing session starts at sunset. See pg. 13 for map and directions.

25th • CCAS Solar Observing Event, 10:30 a.m. to 1:30 p.m. EDT, John Heinz Nature Center. For more information, contact our Observing Chair, [Don Miller](#).

26th • Deadline for newsletter submissions for the November 2025 edition of [Observations](#).

November 2025

8th • CCAS Solar Observing Session, 1:30 p.m. to 3:30 p.m. EDT, American Helicopter Museum, "Amber Stuver Memorial" Family Astronomy Night. 1220 American Blvd, West Chester, PA 19380. For more information, contact our Observing Chair, [Don Miller](#).

11th • CCAS Monthly Meeting, in person (as well as via Zoom) at WCU's Merion Science Center, Room 112. Guest speaker: Dr. Rebecca Phillipson, Dept of Physics, Villanova University. Her presentation is titled "Chaos in the Cosmos."

20th • Open call for articles and photographs for the December 2025 edition of [Observations](#).

21st • CCAS Monthly Observing Session, Myrick Conservancy Center, BRC. The observing session starts at sunset. See pg. 17 for map and directions.

26th • Deadline for newsletter submissions for the December 2025 edition of [Observations](#).

September 2025 Meeting Minutes

by *Bea Mazziotta, CCAS Secretary*

- The September 2025 meeting was held on September 9, 2025, in person and via Zoom and YouTube. Dave Hockenberry Club President welcomed members and guests. He noted the many recent and upcoming solar observing events, under the guidance of Roger and Linda Kennedy, in which the club has been involved. These community outreach events have been well attended and information about upcoming ones are on the club website - [ccas.us](#).
- The club's successful scholarship program will continue. Please contact Program Chair Bruce Ruggeri for details on how to donate for next year's recipients.
- Don Miller, Observing Chair, reviewed September observing highlights and encouraged members to utilize NASA's Eyes to explore 3D real time solar system imagery as well NASA missions.
- October 4th is International Observe the Moon Day. CCAS and WCU Astronomy Club will gather on the University quad from 7:30 PM to 9:30 PM to participate in this NASA world wide event.
- Don Knabb, Education co-Chair, reviewed highlights from the club's July observing trip to Cherry Springs State Park.
- Bruce Ruggeri's introduced the evening's speaker, Dr. Bhuvnesh Jain. Dr. Jain is the Walter H. and Lenore C. Annenberg Professor in the Natural Sciences in the department of Physics and Astronomy at the University of Pennsylvania. Dr. Jain's major research areas include cosmology, gravitational lensing and machine learning in Astronomy. He is also Co-Director of both the Penn Center for Particle Cosmology and the Penn Data Driven Discovery Initiative.
- His program for the meeting was titled "What Happened to Dark Energy - its evolution and new emerging concepts." Once thought to be a constant, two recent large cosmological surveys have shown that dark energy appears to be evolving over time with a major shift having occurred several billion years ago. These new measurements will likely require scientists to redefine dark energy.

October 2025 CCAS Meeting Agenda

by *Bruce Ruggeri, CCAS Program Chair*

Our next meeting will be held on October 14, 2025, in person at West Chester University's Merion Science Center, Room 112. The Science Center is located at 720 S. Church St., West Chester, PA. Our guest speaker is Dr. Eric Huff, JPL / NASA. His presentation is titled "Unveiling the Dark Side of the Universe with the Euclid Space Telescope."

Please note that inclement weather or changes in speakers' schedules may affect the pro-

gram. 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 2025-2026 season. If you are interested in presenting, or know someone who would like to participate, please contact me at programs@ccas.us.

October 2025 Monthly Meeting Guest Speaker

by Bruce Ruggeri, Program Chair

Our in-person and Zoom monthly CCAS meeting scheduled for Tuesday, October 14, 2025, will commence at 7:30 p.m. EDT. 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. Eric Huff, JPL /NASA. His presentation is titled "Unveiling the Dark Side of the Universe with the Euclid Space Telescope."

Synopsis: This is an especially exciting time for cosmology. While it's been known since the late 1990s that the expansion of the Universe is accelerating, the cause remains unknown and is widely regarded as one of the biggest mysteries in all of physics.

The Euclid space mission is a



Eric Huff, Ph.D.

joint European Space Agency/NASA space telescope. It's the first purpose-built mission for the study of dark energy, and one of the most powerful survey telescopes ever built. In this talk, Dr. Huff will explain how we can use the images and spectroscopy gathered by Euclid to map the distribution of the dark and luminous matter in the Universe.

Dr. Huff will discuss how the maps made by Euclid are related to dark energy and the accelerating cosmos, and what kind of signal we might expect to see when the first results are released in the next year. In addition to the forthcoming dark energy science, the Euclid data have already produced some remarkable discoveries in galaxy evolution and extraordinarily beautiful, wide-field images, which will be described as well.

Bio sketch: Dr. Eric Huff was raised in Bullhead City, Arizona, and followed an early passion for physics to college (B.S. in Astronomy, Physics, and Mathematics, University of Arizona) in Tucson and a PhD (Astrophysics, University of California) at Berkeley.

He's done original work on a variety of topics, ranging from

(Continued on page 14)

CCAS Member Alaric Han Earns Sky Puppies Observing Program Award

by Lyssa & Alaric Han



The Sky Puppy Observing Program is designed just for the younger observer by the Astronomical League to encourage young observers to hone their skills early since most hobbies and vocational interests begin at an early age.

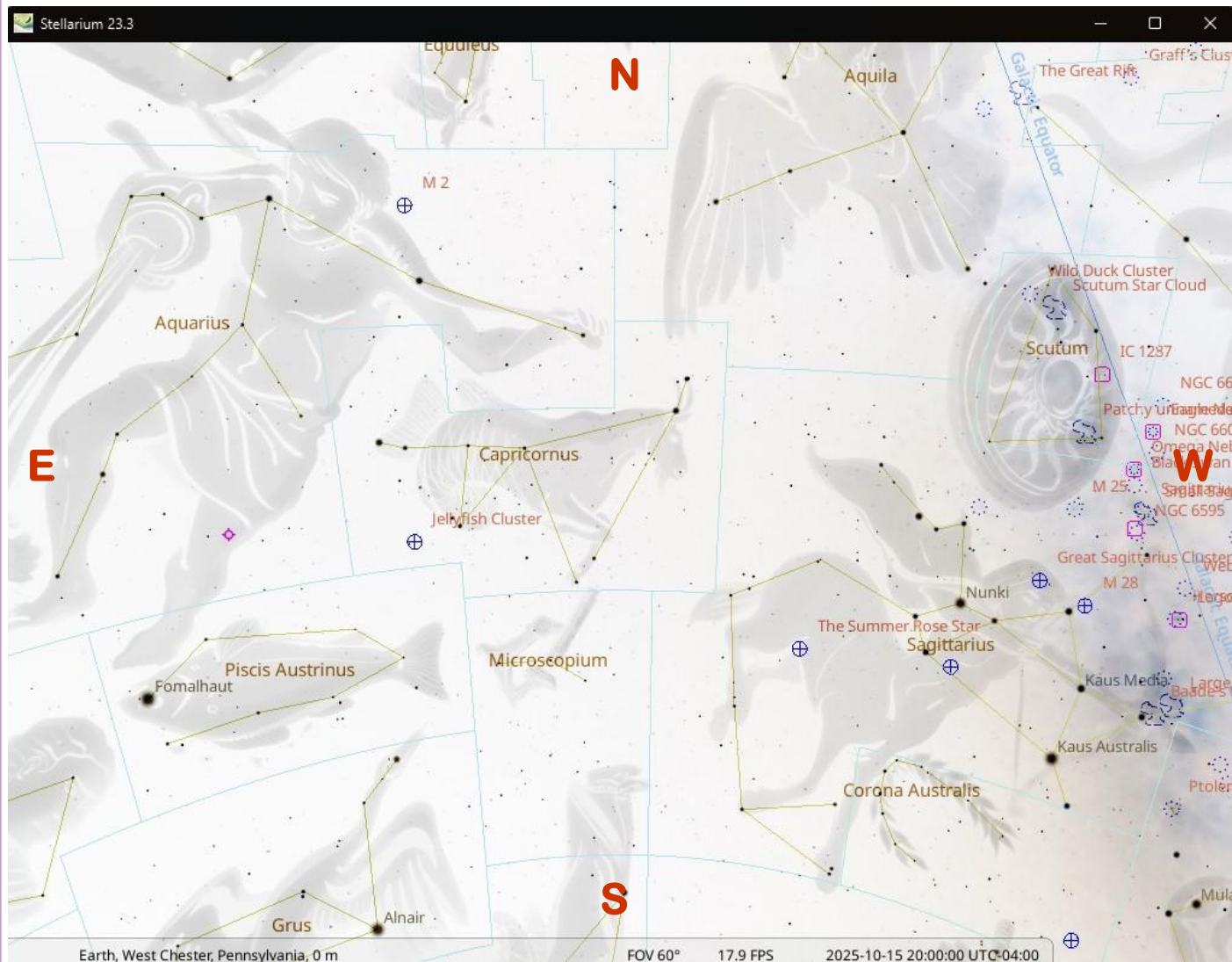
Alaric started participating in the Sky Puppy Observing Program in November 2024, completed all the project check list items, and received the Sky Puppy Certificate and pin in December 2024.

(Continued on page 6)

The Sky Over Chester County

October 15, 2025 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
10/01/2025	6:32 a.m. EDT	6:58 a.m. EDT	6:44 p.m. EDT	7:11 p.m. EDT	11h 45m 11s
10/15/2025	6:45 a.m. EDT	6:49 a.m. EDT	6:22 p.m. EDT	7:37 p.m. EDT	11h 09m 12s
10/31/2025	7:02 a.m. EDT	7:30 a.m. EDT	6:00 p.m. EDT	6:28 p.m. EDT	10h 30m 10s

Moon Phases

Last Quarter	10/13/2025	2:12 p.m. EDT	Full Moon	10/06/2025	11:47 p.m. EDT
First Quarter	10/29/2025	12:20 p.m. EDT	New Moon	10/21/2025	8:25 a.m. EDT

October 2025 Observing Highlights

by John Carl Hepler, CCAS Webmaster & Newsletter Editor

October Highlights

October's longer nights bring two transits of **Titan** across Saturn, while Mercury and Mars make a brief evening appearance, and Venus dominates the morning sky. Plus, the Orionid meteor shower occurs during the dark of the Moon.

The Moon and Planets

Mercury and **Mars** meet in the evening sky, although their low altitude will make them difficult to spot for observers in the Northern. The two planets reach conjunction less than 2° apart on Oct. 19th and both set less than an hour after sunset.

On the 19th, look for magnitude -0.2 Mercury 4° high in the southwest sky 20 minutes after sunset. You'll probably need binoculars to locate fleet-footed **Mercury**. Within 10 minutes it drops below 3° in altitude. From Mercury, scan 2° to the upper right to try spotting dimmer **Mars** at magnitude 1.5.

Mercury stands between Mars and a **crescent Moon** on Oct. 23rd. Mercury is 4.5° northwest of the Moon; they are very low in the southwest and set by 7 p.m.

Saturn stands high in the eastern sky after dark and remains visible all night. Saturn is 4° south of the nearly **Full Moon** on Oct. 5th.

Saturn maintains its opposition magnitude of 0.6 for the first week of October and dips to 0.8 by the end of the month, when it stands 816.2 million miles away. The rings are almost edge-on. This month the rings' tilt declines from 1.5° to 0.6° .

Two transits of **Titan** — one with its shadow — occur in October. On the 5th, Titan's transit begins around 9:25 p.m. EDT. its shadow appears at 12:26 a.m. EDT, crossing the north pole of the planet. Titan reaches Saturn's limb at 2:23 a.m. EDT and exits by 2:44 a.m. EDT on the morning of the 6th.

The second transit occurs Oct. 21st-22nd. **Titan** begins ingress at 6:42 p.m. EDT. It takes three hours to reach the midpoint of Saturn's disk. Titan reaches the northwestern limb at 12:22 a.m. EDT on the 22nd and is clear of the disk by 12:41 a.m. EDT.

Neptune lies 3° northeast of Saturn on the 1st. Saturn's motion westward increases this gap to 4° by the end of October. Neptune is just past opposition and visible all night, reaching its highest point in the south around midnight. It is magnitude 7.7, within range of binoculars.

Uranus is one month from opposition and rises two hours after sunset. It's best viewed after midnight, when it is over 40° high in the east in the constellation **Taurus**. It's easy to find just over 4° south-southeast of M45, the **Pleiades**. You'll need binoculars or telescope to spot the magnitude 5.6 planet.

A waning **gibbous Moon** stands 4.7° north of Uranus Oct. 9/10 and crosses the Pleiades, producing a series of occultations. Observing between 11 p.m. and 1 a.m. EDT will offer the best views.

Jupiter rises around 12:30 a.m. EDT on Oct. 1st and shines at magnitude -2.1 . In the hour before dawn, the giant planet stands more than 50° high. By the end of October, it rises well before midnight. It lies southeast of the stars **Castor** and **Pollux** in Gemini. A waning **Last Quarter Moon** hangs above Jupiter the morning of Oct. 13th.

Venus rises at 5 a.m. local daylight time on Oct. 1st, shining at magnitude -3.9 among the stars of Leo. It crosses into Virgo by the 9th and it's joined by the **waning crescent Moon** on the 19th; the pair rises around 5:30 a.m. EDT.

Meteors

The **Orionid** meteor shower peaks Oct. 21st, although it is active between Oct. 2nd and Nov. 7th. This annual event is renowned for its swift, bright meteors that radiate from the constellation Orion, near the star **Betelgeuse**.

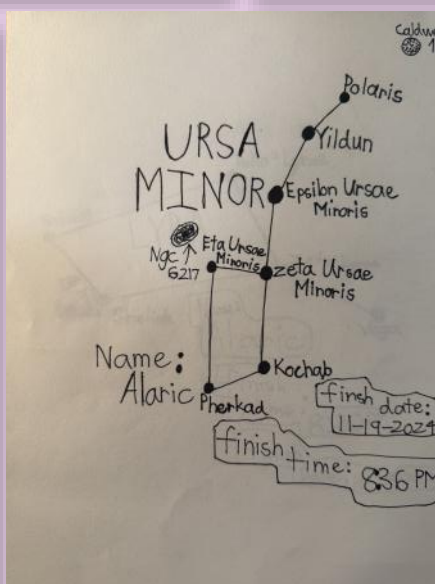
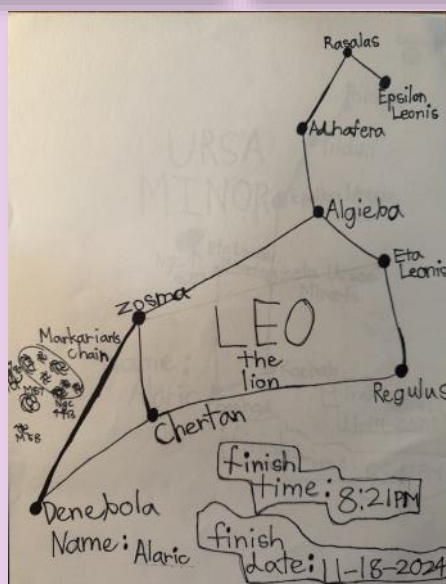
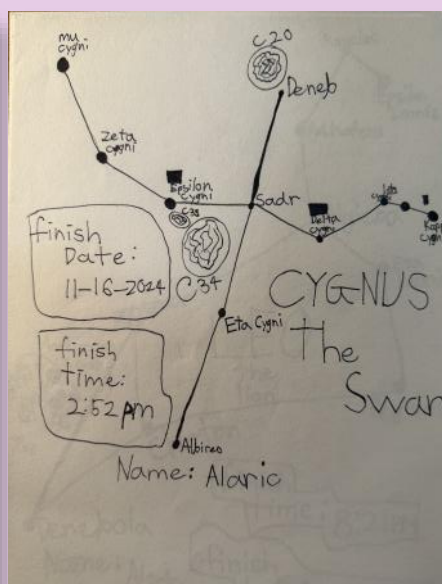
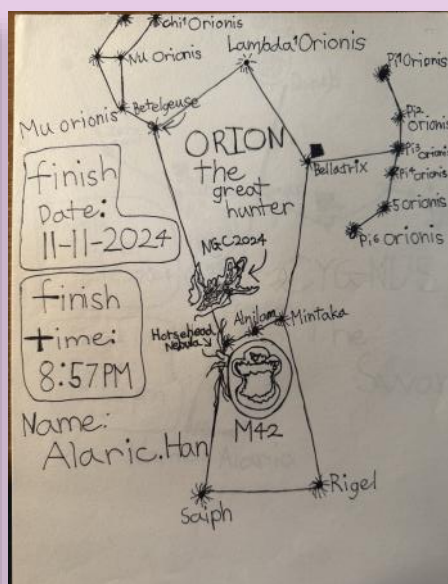
Viewers can expect up to 20 meteors per hour in the predawn hours when the radiant is high in the sky. The radiant rises in the east before midnight and reaches its highest point around 5:30 a.m. EDT, making the early-morning hours ideal for observation. This year the **New Moon** on Oct. 21st ensures dark skies, enhancing visibility.

Comets

Falling steeply into the Sun's gravity well, **Comet C/2025 A6 (Lemmon)** drops in from the Oort

(Continued on page 13)

Sky Puppy Award (Cont'd)



Several of Alaric Han's Sky Puppies Award Submissions

(Continued from page 3)

The Project check list includes,

- Draw 15 Constellations.
- Identify 15 Constellations in the night sky.
- Identify major stars and objects in each constellation
- Tell 2 mythical constellation stories

- Locate & Identify 5 Deep Space Objects
- Identify and describe the Milky Way in the Night sky
- Locate and identify the North Star (Polaris) or Crux
- Kept a log including notes of each observation
- Draw a sketch of a solar system

- Research and give representation on robotic space mission

Alaric really enjoyed participating in this program and learned a lot about Constellations and Galaxies. He hopes you will enjoy several pictures he drew as well as a picture of his membership pin and certificate.

Through the Eyepiece: The Triangulum Galaxy, Messier 33

by CCAS Treasurer & ALCOR Don Knabb



M 33, The Triangulum Galaxy. Image created in Stellarium.org

During October the skies are clear, but it is not too cold yet, so this is a great time of year to seek out some of the faint fuzzies that would leave you with chattering teeth and frozen toes if you try to find them when winter settles in. One such object on my list for this time of year is Messier 33, the Triangulum Galaxy.

The constellation Triangulum is easy find using some of the fall constellations as guides. If you first find the Great Square of Pegasus and then find the Pleiades, just look between them for a small constellation in the shape of a triangle (I suppose you could have guessed its shape). Then use the sky map to star hop to the area of M 33.

Don't expect M 33 to stand

out in the sky. Although it is considered to be a naked eye object under dark skies, those will need to be very dark skies indeed! M 33 is a very large object in the night sky, and it has low surface brightness. The galaxy covers approximately a full degree of sky which is about 1/3 of the field of view of average binoculars or twice the size of the full Moon and is typically too large for an average telescope eyepiece. So grab your binoculars and lie back, let your eyes adjust for about a half an hour and stare into the abyss to seek out this faint fuzzy!

If you use a telescope to find M 33, be sure to select your lowest power (highest number) eyepiece, such as a 32mm or 40mm eyepiece. Any light pollution or

moonlight will make finding the Triangulum Galaxy very difficult.

Some sources refer to M33 as the Pinwheel Galaxy, but that name is more generally given to Messier 101. The Triangulum Galaxy is the third-largest member of the Local Group of galaxies, which includes the Milky Way Galaxy, the Andromeda Galaxy and about 30 other smaller galaxies. It is one of the most distant permanent objects that can be viewed with the naked eye under ideal conditions. The picture of M 33 on page 9 was taken in the Pocono mountains with my Seestar S50.

While the Triangulum Galaxy was probably first observed by Hodierna before 1654 (back

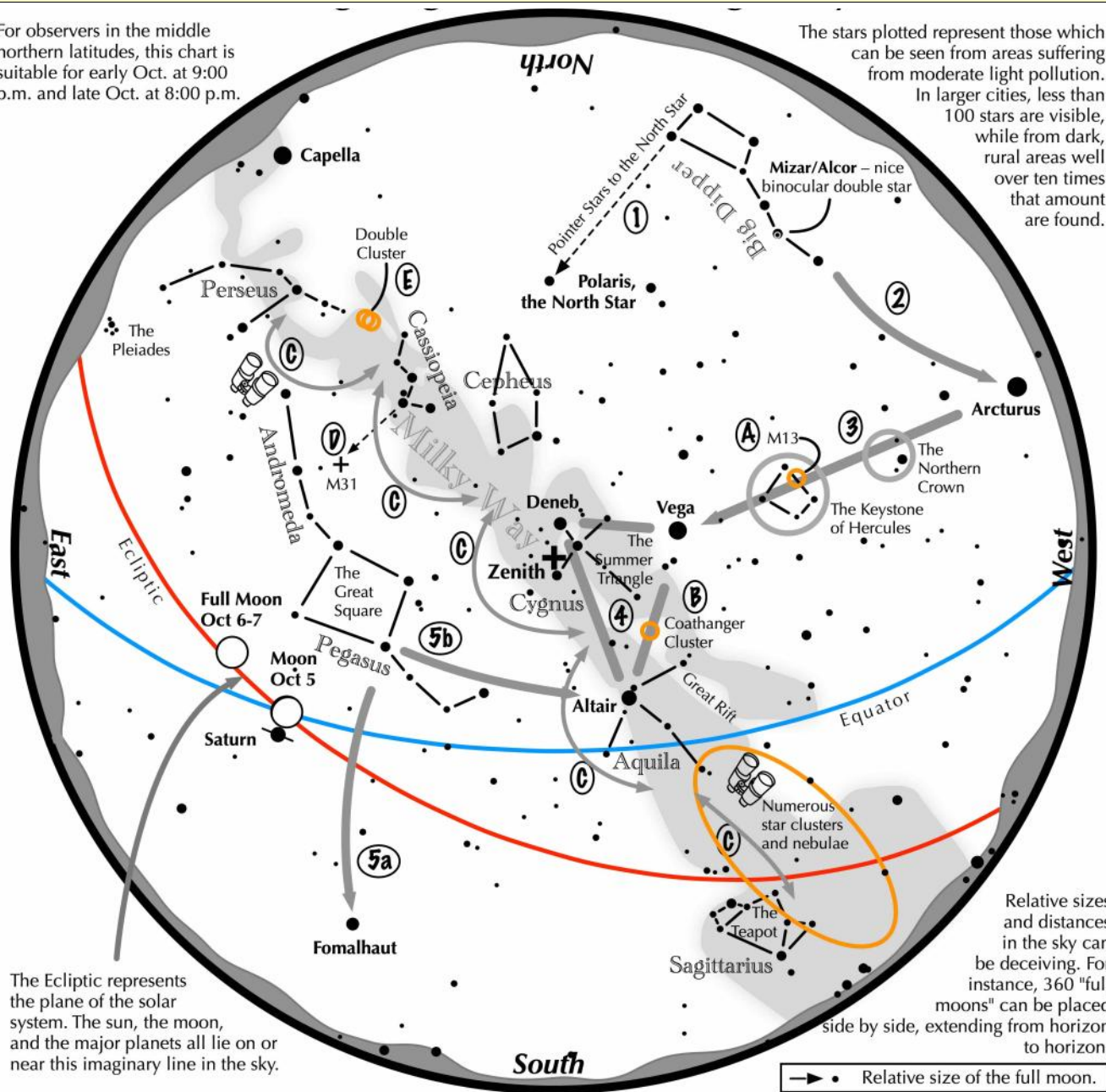
(Continued on page 9)

Navigating the mid-October Night Sky

courtesy of the Astronomical League

For observers in the middle northern latitudes, this chart is suitable for early Oct. at 9:00 p.m. and late Oct. at 8:00 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.



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.

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 October 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 early October 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 Nearly overhead lie the summer triangle stars of Vega, Altair, and Deneb.
- 5 High in the east are the four moderately bright stars of the Great Square. Its two southern stars point west to Altair. Its two western stars point south to Fomalhaut.

Binocular Highlights

A: On the western side of the Keystone glows the Great Hercules Cluster, a ball of 500,000 stars. **B:** 40% of the way between Altair and Vega, twinkles the "Coathanger," a group of stars outlining a coathanger. **C:** Sweep along the Milky Way for an astounding number of fuzzy star clusters and nebulae amid many faint glows and dark bays, including the Great Rift. **D:** The three westernmost stars of Cassiopeia's "W" point south to M31, the Andromeda Galaxy, a "fuzzy" oval. **E:** Between the "W" of Cassiopeia and Perseus lies the Double Cluster.



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Eyepiece (Cont'd)



M 33, Triangulum Galaxy. Image credit: Don Knabb

(Continued from page 7)

when skies were dark), it was independently rediscovered by Charles Messier and cataloged by him on August 25, 1764. Messier writes: "I have discovered a nebula between the head of the northern Fish and the large Triangle."

Sir William Herschel was an astronomically curious soul and studied M 33 intently on his own, writing: "There is a suspicion that the nebula consists of exceedingly small stars. With this low power it has a nebulous appearance." He would continue to observe this grand galaxy again and again over the years, cataloging its various regions with their own separate numbers and keeping track of his find-

ings: "The stars of the cluster are the smallest points imaginable."

Herschel also cataloged the Triangulum Galaxy's brightest and largest nebula separately from the galaxy itself, which eventually obtained NGC number 604. As seen from Earth, NGC 604 is located northeast of the galaxy's central core.

So, before temperatures drop below freezing and the winds of winter howl, try to find this faint fuzzy and add it to your Messier list!

Information credits:

- http://en.wikipedia.org/wiki/Triangulum_Galaxy
- <http://www.skyandtelescope.com/community/skyblog/stargazing/69562222.html?pageSize=0>
- <http://www.universetoday.com/34008/messier-33/>

Seestar Images from Summer 2025 CCAS Camping Trip to Cherry Springs State Park by CCAS Treasurer & ALCOR Don Knabb



October's Night Sky Notes: Let's Go, LIGO!

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

September 2025 marks ten years since the first direct detection of gravitational waves as predicted by Albert Einstein's 1916 theory of General Relativity. These invisible ripples in space were first directly detected by the Laser Interferometer Gravitational-Wave Observatory (LIGO).

Traveling at the speed of light (~186,000 miles per second), these waves stretch and squeeze the fabric of space itself, changing the distance between objects as they pass.



Waves In Space

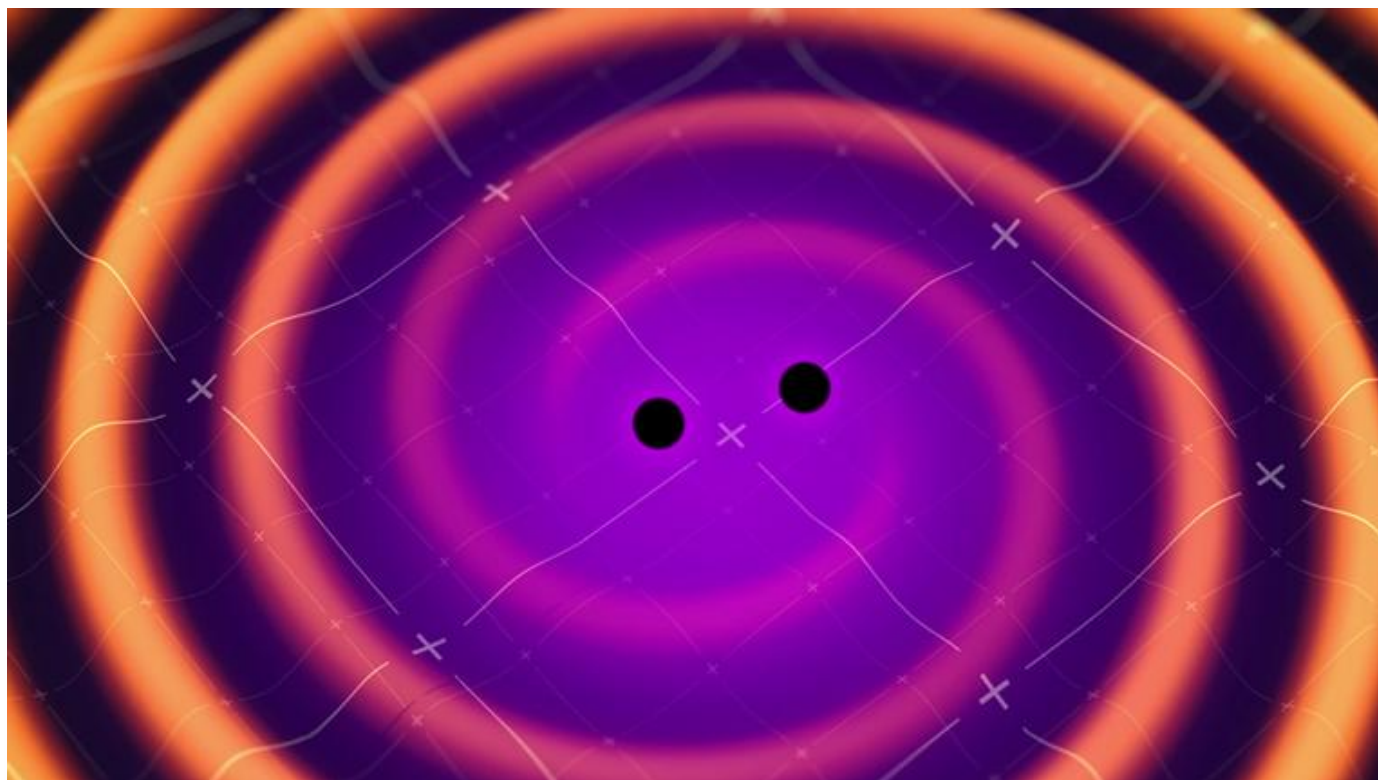
Gravitational waves are created when massive objects accelerate in space, especially in violent events. LIGO detected the first gravitational waves when two black holes, orbiting one another, finally merged, creating ripples in space-time. But these waves are not exclusive to black

holes. If a star were to go supernova, it could produce the same effect. Neutron stars can also create these waves for various reasons. While these waves are invisible to the human eye, this animation from NASA's Science Visualization Studio shows the merger of two black holes and the waves they create in the process.

How It Works

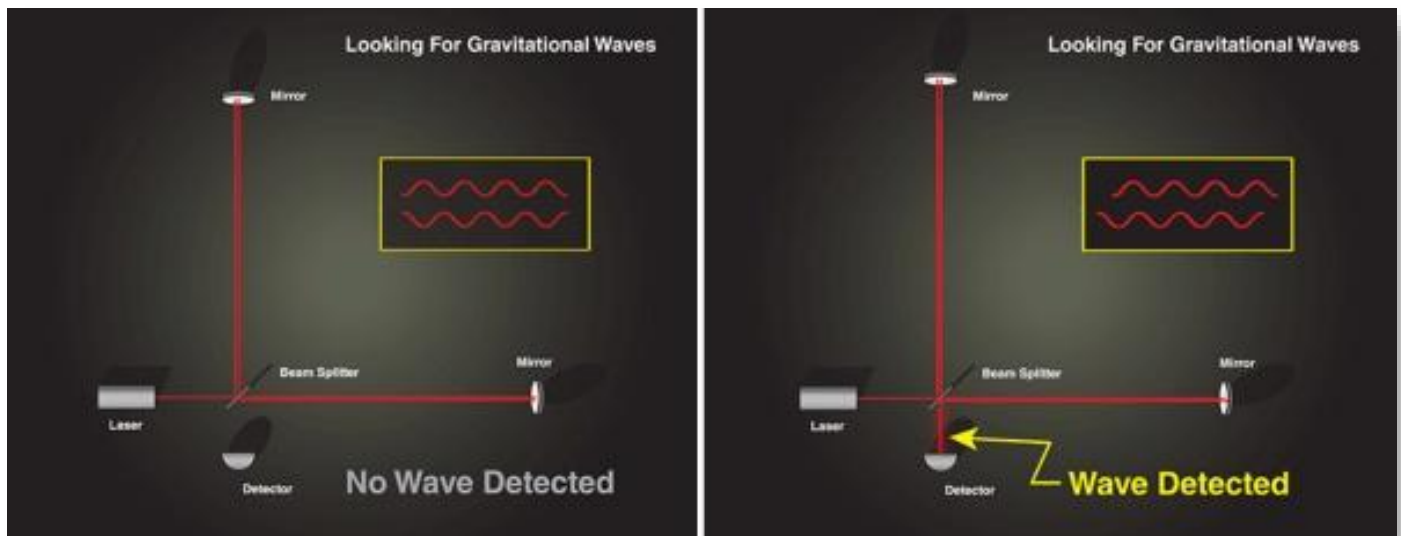
A gravitational wave observatory, like LIGO, is built with two tunnels, each approximately 2.5 miles long, arranged in an "L" shape. At the end of each tunnel, a highly polished 40 kg mirror (about 16 inches across) is mounted; this will reflect the laser beam that is sent from the observatory. A laser beam is sent

(Continued on page 11)



*Two black holes orbit around each other and generate space-time ripples called gravitational waves in this image.
Image Credit: NASA's Goddard Space Flight Center Conceptual Image Lab*

Night Sky Notes (Cont'd)



Still images of how LIGO (Laser Interferometer Gravitational-Wave Observatory) detects gravitational waves using a laser, mirrors, and a detector. You can find the animated version [here](#). Image Credit: NASA

(Continued from page 10)

from the observatory room and split into two, with equal parts traveling down each tunnel, bouncing off the mirrors at the end. When the beams return, they are recombined.

If the arm lengths are perfectly equal, the light waves cancel out in just the right way, producing darkness at the detector. But if a gravitational wave passes, it slightly stretches one arm while squeezing the other, so the returning beams no longer cancel perfectly, creating a flicker of light that reveals the wave's presence.

The actual detection happens at the point of recombination, when even a minuscule stretching of one arm and squeezing of the other changes how long it takes the laser beams to return. This difference produces a measurable shift in the interference pattern.

To be certain that the signal is real and not local noise, both LIGO observatories — one in

Washington State (LIGO Hanford) and the other in Louisiana (LIGO Livingston) — must record the same pattern within milliseconds. When they do, it's confirmation of a gravitational wave rippling through Earth. We don't feel these waves as they pass through our planet, but we now have a method of detecting them!

Get Involved

With the help of two additional gravitational-wave observatories, [VIRGO](#) and [KAGRA](#), there have been [300 black hole mergers detected in the past decade](#); some of which are confirmed, while others await further study.

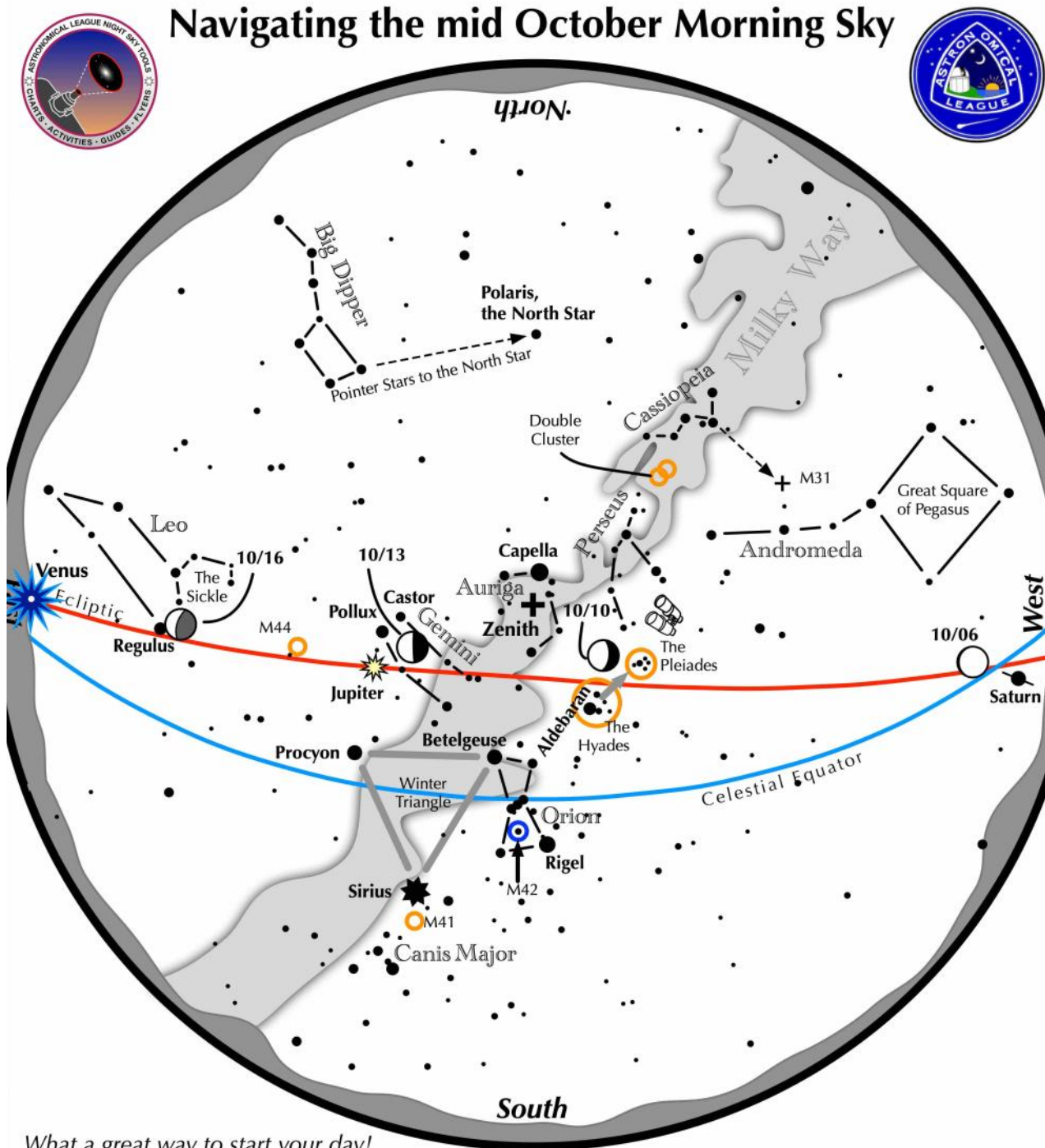
While the average person may not have a laser interferometer lying around in the backyard, you can help with two projects geared toward detecting gravitational waves and the black holes that contribute to them:

- **[Black Hole Hunters:](#)** Using data from the [TESS satellite](#),

you would study graphs of how the brightness of stars changes over time, looking for an effect called gravitational microlensing. This lensing effect can indicate that a massive object has passed in front of a star, such as a black hole.

- **[Gravity Spy:](#)** You can help LIGO scientists with their gravitational wave research by looking for glitches that may mimic gravitational waves. By sorting out the mimics, we can train algorithms on how to detect the real thing.

You can also use gelatin, magnetic marbles, and a small mirror for a more hands-on demonstration on how gravitational waves move through space-time with JPL's [Dropping In With Gravitational Waves](#) activity!



What a great way to start your day!

For observers in the middle northern latitudes, this chart is suitable for mid October at 5:00 a.m.

Late sunrises in October provide opportunities for early morning skywatching.

- Bright Jupiter shines nearly overhead.
- Venus climbs above the eastern horizon 60 minutes before sunrise.
- The third quarter moon glows next to bright Jupiter on October 13.
- The waning crescent moon glows next to Regulus on October 16.
- During the first half of October, gaze high in the south and overhead to see these many celestial features: the Pleiades, the Hyades with Aldebaran, Jupiter, Orion, Capella and Auriga, the Winter Triangle with Sirius and Procyon, and Gemini.

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7500

Observing (Cont'd)

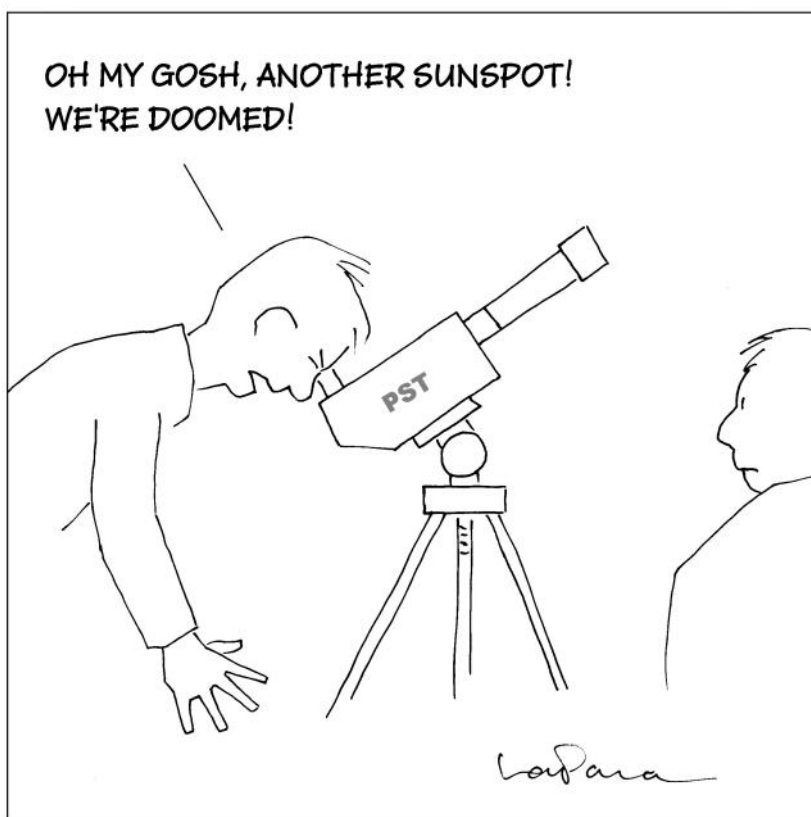
(Continued from page 5)

Cloud for a brief two-month visit. By month's end it peaks around 8th magnitude, comparable to Messier galaxies, in the northwest and is accessible to 3-inch telescopes from a rural location.

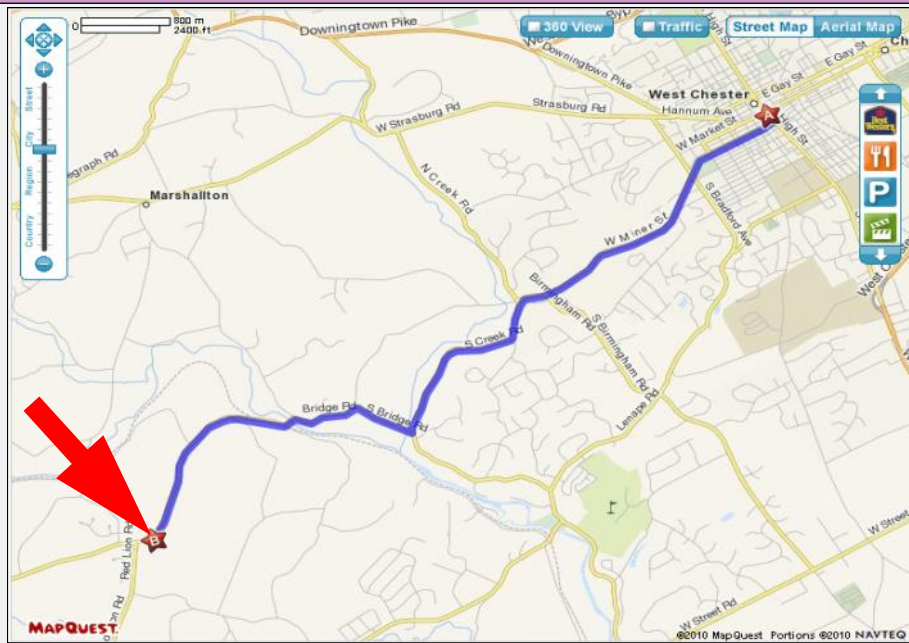
Two weeks into October, Comet Lemmon is not much more than 20° high and sinks quickly into dusk's haze. On October 13th, look for the comet in **Canes Venatici**. Over the next ten days, the comet will travel past globular cluster M3 into **Boötes** and then **Serpens Caput**.

[Editor's Note: This month's observing highlights are taken from the October 2025 edition of *Astronomy magazine*.]

Classic La Para by Nicholas La Para



CCAS Directions



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).

Brandywine Red Clay Alliance

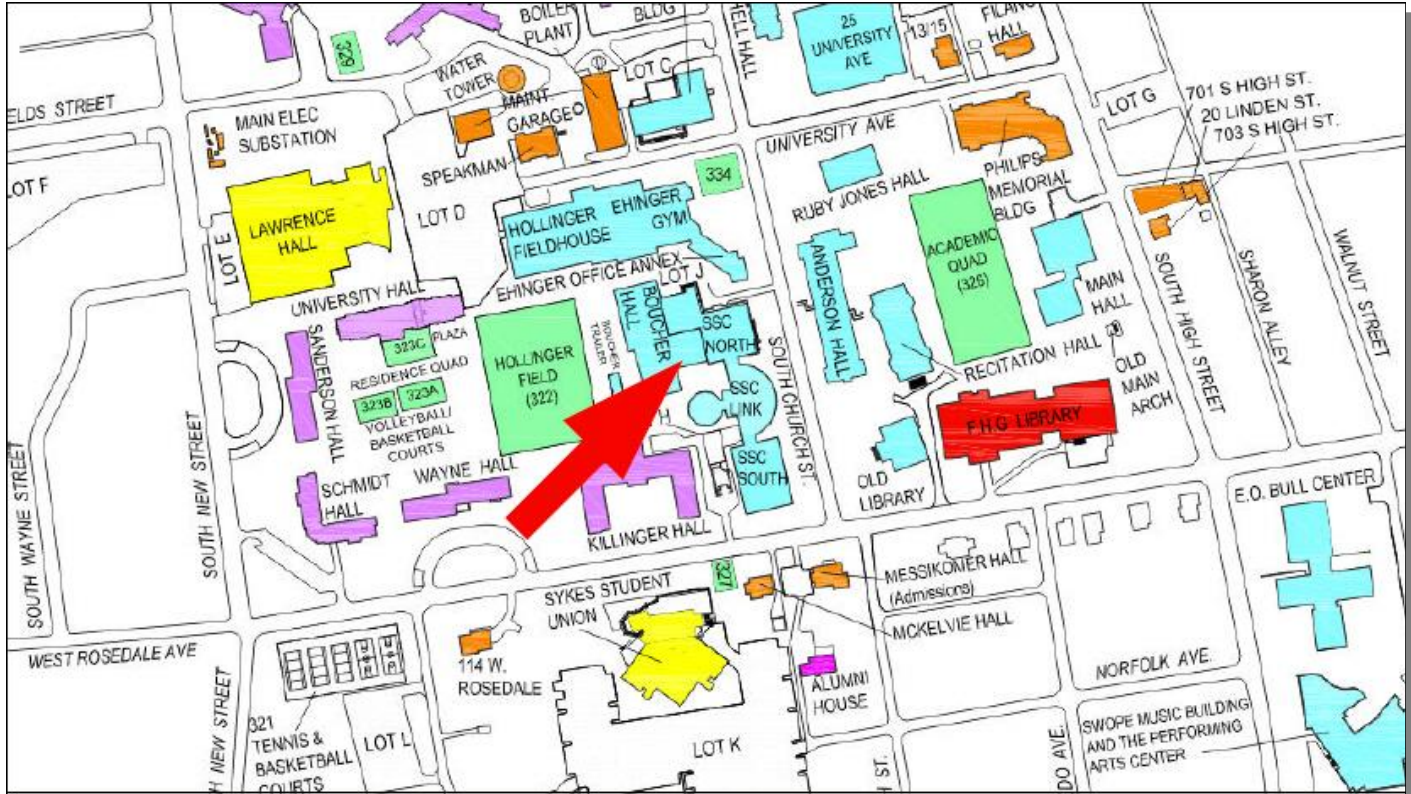
1760 Unionville Wawaset Rd
West Chester, PA 19382
(610) 793-1090
<http://brandywinewatershed.org/>

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.

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 3)

observational cosmology to tidal modeling of surface features on the Jovian moons. His primary research interests lie in studying dark energy and cosmic acceleration and gravitational lensing.

Dr. Huff is also an expert on precision measurements of large-scale structure of the universe, devising methods now used on the ground and in space for mapping dark matter. Among the major NASA projects he and his group are engaged in are the Euclid space telescope, the Dark Energy Survey (DES), and the Nancy Grace Roman Space Telescope.

CCAS Membership Information and Society Financials

Treasurer's Report by Don Knabb

Sept. 2025 Financial Summary

Beginning Balance	\$1744
Deposits	\$130
Disbursements	-\$44
Ending Balance	\$1874

New Member Welcome!

Welcome to new CCAS members Dilip Patel from Downingtown, PA, Hui-En (Allen & Deanna) Na from West Chester, PA, Sheryl "Pinky" Pincus from Wayne, PA, and Deepa & Shloka Vish 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](#). 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: 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: 610-436-5702
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 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.

