

# The Observer

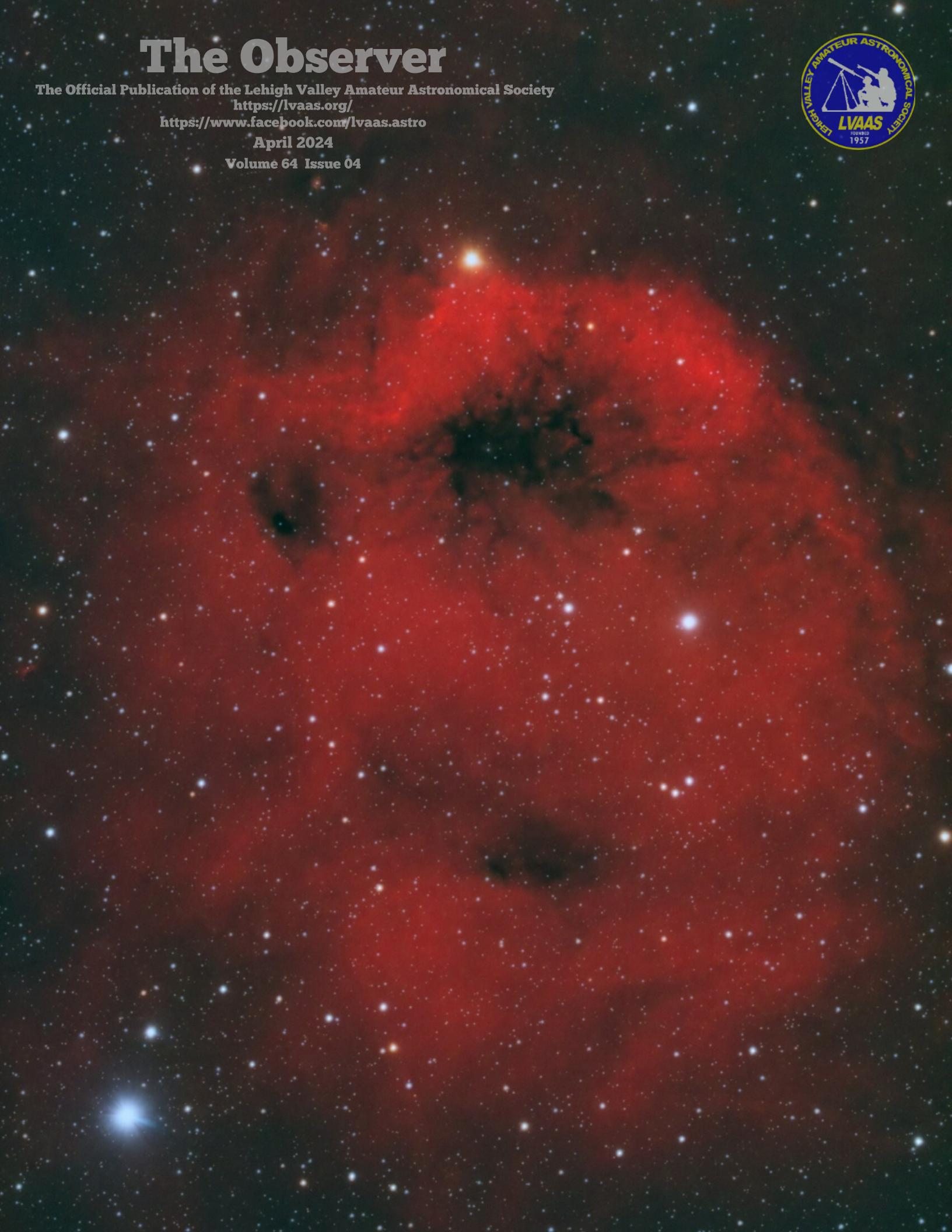
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<https://lvaas.org/>

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April 2024

Volume 64 Issue 04





# Ad Astra

## In Praise of the Amateur

As we gather under the vast expanse of the night sky, our telescopes poised to unveil the mysteries of the cosmos, I am reminded of the profound significance of our shared passion. In a world often driven by titles and achievements, we stand united as amateur astronomers, guided not by obligations or accolades, but by an unwavering love for the stars above.

Let us take a moment to reflect on the origin of the word "amateur," derived from the Latin "amator," meaning "lover" or "one who loves." How fitting it is that we are labeled as such, for our pursuit of astronomical knowledge is fueled by nothing less than pure love. Each time we set our sights on distant galaxies or observe the dance of planets, we do so out of an intrinsic desire to understand and appreciate the wonders of the universe.

In the eyes of some, being called an amateur may carry connotations of inexperience or inadequacy. But let us wear this label proudly, for it signifies something far more profound: it is a testament to the depth of our passion and the sincerity of our intentions. We are not bound by obligations or career aspirations; rather, we are driven solely by our love for astronomy and the sheer joy of exploration.

As amateur astronomers, we are part of a global community that transcends borders and boundaries. Whether we gather at local star parties, share our observations online, or simply gaze up at the night sky from our own backyard, we are connected by a common thread: our shared fascination with the cosmos. In each other, we find not competitors or rivals, but kindred spirits who share in our sense of wonder and awe.

So, my fellow stargazers, let us embrace our status as amateurs with pride and gratitude. Let us continue to explore, to question, and to marvel at the celestial wonders that surround us. For in doing so, we honor not only the stars above, but also the love and passion that unite us as amateur astronomers.



Saying goodbye to Orion for the year. I took this picture from inside my house, though the sliding glass door. In that moment, I just had to. I love it as much as any of my other images.

**Ad Astra!**



## **Minutes from the LVAAS General Meeting – March 10, 2024**

The March 2024 LVAAS general meeting was conducted electronically using an online service and in Room 130 of the Trumbower Science Building on the campus of Muhlenberg College. Approximately 60 people were in attendance. Director Benjamin Long opened the meeting at 3:00 p.m.

Tonight's presentation is *The Glass Universe* by Dava Sobel, a former *New York Times* science reporter and the author of *Longitude* (Walker 1995 and 2005, Penguin 1996), *Galileo's Daughter* (Walker 1999 and 2011, Penguin 2000), *The Planets* (Viking 2005, Penguin 2006), *A More Perfect Heaven* (Walker / Bloomsbury 2011 and 2012), *And the Sun Stood Still* (Bloomsbury, 2016) and *The Glass Universe* (Viking, 2016). She has also co-authored six books, including *Is Anyone Out There?* with astronomer Frank Drake. A 1964 graduate of the Bronx High School of Science, Ms. Sobel attended Antioch College and the City College of New York before receiving her bachelor of arts degree from the State University of New York at Binghamton in 1969. She holds honorary doctor of letters degrees from the University of Bath, England, and Middlebury College, Vermont, both awarded in 2002, and also honorary doctor of science degrees from the University of Bern, Switzerland (2015) and Simon Fraser University in British Columbia (2019). For a complete biography and synopses of Dava's books, please see Dava's website: <https://www.davasobel.com/about-dava-sobel>

The topic of this presentation, *The Glass Universe*, has a dual meaning that includes the 'glass ceiling' that women face in astronomy, as well as the work that early female astronomers did with studying images captured on glass plates. In the 1870's, before women had the right to vote or a firm standing in the workplace, a lucky few found employment at the Harvard College Observatory (HCO). At that time, the term 'computer' was a job description, not a machine. The first female assistants were born to the work -- as the wives, daughters, and sisters of the resident astronomers. When Edward C. Pickering became director of the HCO, he asked for volunteers, especially women, to observe variable stars. Over time other ladies joined the group, thanks to the director's farsighted hiring practices and the introduction of photography to astronomy. Instead of observing through the telescope by night, the women could analyze the stars in daylight on glass photographic plates. Harvard's female workforce

grew accordingly, and its individual members won national and international acclaim for their discoveries. Henry Draper was an astronomer who pioneered the spectral analysis of stars. After his death, his philanthropist wife, Anna Palmer Draper, funded the HCO and further spectral analysis of photographic plates.

Williamina Fleming was hired from outside of the HCO family and was responsible for classifying 10,000 stars. In 1893 she was instrumental in having a brick building constructed to house the astrophotography library which included the glass plates and accompanying notes. Antonia Maury further classified stars, but with more detail. Annie Jump Cannon was able to rectify the two rival systems and gave us the *O, B, A, F, G, K, M* system still in use today. She also became the first female telescope observer at the HCO, and was the first female to receive an honorary doctorate from Oxford.

Director Pickering decided that it was important to study the southern sky and built the Arequipa Station in Peru. The \$50,000 telescope with a 24" lens designed for astrophotography was paid for by Catherine Wolfe Bruce. Particular attention was paid to globular clusters and counting the number of stars they contained. The images were taken in Peru, and plate analysis took place in Cambridge. Henrietta Leavitt started as a computer, but then became an astronomer who studied variable stars. She developed a calibration tool to measure a star's brightness. She looked at the Magellanic Clouds and was most remembered for her discovery of the period-luminosity curve of Cepheid variables. In 1912 an astronomical fellowship was created for women to work at the Nantucket Observatory. Margaret Harwood was the first recipient of the fellowship, and 4 years later was named the first director of the observatory.

Harlow Shapley took over as director of the HCO after Pickering died, and turned the fellowships into graduate student stipends. Cecilia Payne-Gaposchkin was the first person to earn a PhD in astronomy from the Radcliffe College of Harvard University. In her thesis she showed that stars were composed mostly of hydrogen, making it the most common element in the universe. The Annie Jump Cannon Award is for outstanding research and promise for future research by a postdoctoral woman researcher. It is given to a North American female astronomer within five years of receiving her PhD in the year designated for the award.

The half-million glass plates captured through a century's worth of observing still occupy their own building at what is today the Harvard-Smithsonian Center for Astrophysics. There is currently a project to digitize the collections as the *Digital Access to a Sky Century @ Harvard*.

After Dava finished answering questions around 4:03 p.m., Director Benjamin Long called the business meeting of LVAAS to order.

## Director's Report: Benjamin Long

- To preserve the main building at South Mountain, it has become necessary to replace the flat roof of the building and the planetarium dome. Previously, \$20,000 had been allocated to this project, however, the current cost is approximately \$10,000 more than the amount allocated. Therefore, the LVAAS Board of Governors passed a resolution to allocate an additional \$10,000 to replace the roof at South Mountain, making the total allocation for roof repairs to be \$30,000. According to the LVAAS By-Laws, a change this large in the budget requires approval by the membership at a general meeting. The repairs need to be done as soon as the weather allows. Therefore, this resolution to raise the budgeted amount for roof repairs at South Mountain is now brought before the membership for approval.
- With the minimum for a quorum having been met, the vote to approve the change in the budget passed unanimously, 44-0, by vote of the members present.

The Business Meeting was closed at 4:06 p.m. and a break was taken.

The informational meeting resumed at 4:22 p.m.

## Membership: Rich Hogg

- Rich explained the process of becoming a full member of LVAAS. Someone interested must participate in a first reading at a general meeting where they introduce themselves to the membership and state what their interests are in astronomy. After their dues are paid, they are an associate member. If they participate in a second reading, which simply involves attending another meeting within a 6 month period, they are then a full member with all of the privileges associated with full membership in the Society.
- The following members completed their second readings and are now full members:  
Richard Guinan  
David Lorchak and Nichole Hydro (family membership)  
Louis Velez
- The following members completed their first readings:  
Brian A. Brown  
Brian C. Brown  
Mike Cutrera  
Daniel Jackson  
Mehar Powar  
David Stech and Jill Youngken (family membership)

- The following members have previously completed a first reading and are still eligible to complete a second reading to become full members:

Reed Kennell

Christine and Timothy Talley (family membership)

Stas Zharko

#### Director's Report: Benjamin Long

- There are a lot of projects being planned at Pulpit Rock. If you are interested in getting involved and helping, watch for an announcement for an organizational meeting to be held at Pulpit Rock.

#### AstroImaging: Tom Duff

- The AstroImaging group meets at South Mountain from April through December. The first meeting of 2024 will be held at 7 p.m. on Saturday April 6.

#### Stargazers: Kyle Kramm

- The first meeting of the Stargazers group met this past Friday night. This is a very informal get together for members with the idea to learn together. These meetings are held on the second Friday of each month at 7 p.m. at South Mountain. If you need help with your gear please bring it with you.

#### Star Party: Aidan Berger

- The first Star Party of 2024 is this Saturday March 16, starting at 6:00 p.m. with Planetarium shows. Please email Aidan if you would like to volunteer to help. Even if you are new and inexperienced, we can use your help, so feel free to get involved.

#### Pulpit Rock Observatories: Frank Lyter and Run Kunkel

- The club has equipment that you can be trained on such as a Spectroscope and a CCD camera.
- There is a long list of projects where help is needed, so watch the Pulpit Rock email chain.
- There are more dead trees that need to be taken down to avoid damage to the bridge on the road up to Pulpit Rock.
- There was also some graffiti on the Tinsley Building and on The Rock that had to be cleaned off.

### Education Committee: Blaine Easterwood

- Today's new moon is the last one before the eclipse, so the solar eclipse of 2024 is one moon cycle away.
- You are invited to join the Education Committee. We are taking ideas for what can be done for the membership of LVAAS.
- We are in partnership with the Da Vinci Science Center for an Eclipse Event on April 8 to be held at Dieruff High School in Allentown. Many who usually help with LVAAS events will be out of the area so if you would like to volunteer to help, please let Blaine know. There will be more information in *The Observer*.
- Space Fest will be held on May 18 & 19 this year. We plan to have solar scopes and set up a display this year. Contact Blaine if you would like to volunteer to help.
- The Book Club is planning to read Neil deGrasse Tyson's book *Astrophysics For People in a Hurry* for a tentative June meeting.

### Library: Joe Zitarelli

- Both Neil deGrasse Tyson's book *Astrophysics For People in a Hurry* and *Sun, Moon, Earth* about solar eclipses are available in the library.
- If you would like a tour of our library I am available at most star parties and Stargazers meetings, or I can be available on most Saturday mornings if you contact me ahead of time.
- I have solar glasses available today and I will have more available at the Star Party next Saturday if anyone needs solar glasses.

### Comments: Brett Fadem

- Muhlenberg College will be setting up a roll-off observatory at the Raker Wildlife Preserve in Germansville, PA.

### Next General Meeting:

- The next meeting will be at South Mountain on Sunday April 14, 2024 at 7:00 p.m.

The March 2024 general meeting was recorded.

The meeting was adjourned at approximately 4:52 p.m.

Submitted by Joe Zitarelli, Secretary

# LVAAS General Meeting

Sunday, April 14, 7 p.m.

South Mountain Headquarters *and via Zoom*

## "Playing in the Shadows"

If you want to add some stress to your astronomy hobby, try chasing eclipses, for starters. LVAAS'ers Gary A. Becker and Peter K. Detterline will detail some of the eclipses they have successfully tracked, focusing on the October 14, 2023 annular eclipse they witnessed in Utah, and hopefully, the April 8 total solar eclipse that they are anticipating observing somewhere between Vermont and Texas, in the nearest clear sky location that is closest to home. If they are clouded out, plenty of other success stories will be detailed, including at least one lunar eclipse they have chased. If you're an umbraphile, (and who isn't?), plan to join Pete and Gary for a fun-filled program as they explore what it's like to chase and play in the shadows.

*presented by*



**Gary Becker** has had a lifelong passion for astronomy along with photography, and sky watching. As director (for 38 years) of the award-winning Allentown, PA School District's Planetarium, and current Adjunct Professor of Astronomy at Moravian University in Bethlehem, PA, Gary has taught astronomy from preschool to graduate levels under an electronic as well as natural sky. An ardent traveler,

Gary has hosted tours to observe and photograph comets and eclipses, and has taken urban students to the Southwest to view the heavens from some of the darkest locales in the United States. He and his pupils volunteered as Night Sky Interpreters at Chaco Culture National Historical Park, NM and Bryce Canyon National Park, UT between 1999 and 2006. In 2012 he joined the Astronomy Team of the Mars Society where he helps to maintain and enhance the Elon Musk (Solar) Observatory and the MDRS Robotic Observatory at the Mars Desert Research Station near Hanksville, Utah, the latter supporting the astronomy program at Moravian University. Gary's half-century of amateur and professional interests in astronomy have provided him with a unique perspective for writing and teaching. He authored the book that his Moravian astronomy students use, edited the national newsletter of the Astronomical League, *The Reflector*, founded (1996) and continues to maintain as an educational outreach the very visual website [astronomy.org](http://astronomy.org). Gary has for over a quarter century written a homespun, informative weekly column called *StarWatch*, which is distributed to the Moravian University community and appears in 25 newspapers nationwide. Gary resides in Pennsylvania's beautiful Lehigh Valley with his wife, Susan, a retired English teacher who also enjoys writing, and their three spunky Dutch rabbits, "cerebral" Sagan, "T-Rex" Stella, and "princely little" Fynn.



**Peter Detterline** is an avid astronomer whose interests cover a wide range of the astronomical spectrum. For thirty-five years he was the Director of the Boyertown Planetarium, where he gave programs to over half a million people. He is a recipient of the Thomas Brennan award from the Astronomical Society of the Pacific for exceptional achievement related to teaching

high school astronomy. He teaches an astronomy course at Montgomery County Community College, and for teachers through the Montana Learning Center. In research he has coauthored numerous papers on eclipsing binaries and contributes data to the AAVSO, ALPO, IMO, and IOTA. He is the Observatory Director for the Mars Society where he heads up an Astronomy Team providing a solar and a robotic telescope for their members at the Mars Desert Research Station in Utah. He also provides training for a robotic telescope in New Mexico as the Lead Astronomer for the Montana Learning Center. Both robotic telescopes are used remotely by students around the world.

Peter was selected to be part of the "Astronomy in Chile Educator Ambassador Program", where he visited the largest American observatories in that country. As an amateur astronomer he has traveled the globe to view solar eclipses, built his own observatory, and has completed over 45 observing programs including the Astronomical League's "Master Observer." He is an honorary life member of the Lehigh Valley Amateur Astronomical Society (LVAAS). When he's not staring at the heavens, Peter is preaching about them as a Lay Minister for the United Church of Christ. Astronomy for him is a deeply enriching experience that connects the heavens to the Earth.

Peter may be contacted at [pdetterline@gmail.com](mailto:pdetterline@gmail.com)

**Prospective new members who wish to attend the meeting should email [membership@lvaas.org](mailto:membership@lvaas.org).**





### ***Via Sandy Mesics, Programs Chairperson***

#### **Upcoming LVAAS General Meeting Speakers**

**April:** Peter Detterline and Gary Becker will speak on "The Solar Eclipse"

**May:** Greg Shanos, will speak via Zoom on "Meteorites"

**June:** John Conrad will speak via Zoom on "Spaceships for the 21st Century"

**July:** Mike Huber will present "The Seestar 50"

**August:** *pending*

**September:** Steve Conrad will speak via Zoom on "Occultations"

**October:** Mario Motta will speak via Zoom on "Building a 32-inch Telescope"

**November:** *speaker needed*

**December:** Emma Page (LU) "Transits and Eclipsing Binaries"

Please contact [astrosandy@gmail.com](mailto:astrosandy@gmail.com) if you have ideas for speakers, or would like to volunteer yourself!

### ***KUDOS! via Mike Clark, Director, South Mountain Observatories***

A thank you goes out to **Aidan Berger**, **Frank Lyter**, and **Dave Moll** for printing ID badges and glow-in-the-dark badge holders for LVAAS event volunteers. This will make our members more visible before and after twilight. Thank you, LVAAS Volunteers!

### ***Via France Kopy, Editor***

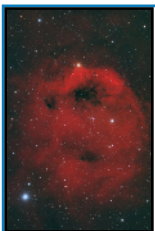
LVAAS former Director and longtime member **Peter Detterline** was featured on a **CBS Evening News** segment on Thursday April 4, 2024, speaking about the upcoming solar eclipse on April 8. You can hear some tips and see his amazing backyard observatory [here](#), and make sure to watch his **Night Sky Notebook** [here](#) or on page 11 to pick up more eclipse tips and learn about April sky sights. Congratulations Peter!

### ***Via Earl Pursell, UACNJ Liason***

Public Program Nights have resumed at United Astronomy Clubs of New Jersey; please visit [uacnj.org](http://uacnj.org) for info. **Last Minute Kalamazoo Astronomical Society Eclipse Guide:** <https://kasonline.org/eclipse.html>

### ***Via France Kopy, Observer Editor***

All LVAAS members are welcome and encouraged to contribute material for our newsletter, including photos (astroimages, skyscape or event), original articles of astronomical interest, or advertisements for equipment. *The Observer* has a world-wide audience; why not use it to share your love of astronomy? (Please see the black box, last page for specifics on ads.) Why not send in your eclipse photos? We'd love to share them!



#### **Cover: The Phantom of the Opera Nebula (Sharpless 2-173) Imager: John Kmetz**

This image was acquired with an ASI2600MM camera on a Celestron C925EdgeHD with 0.7X Focal Reducer

Using Astronomik 6nm Ha and OIII, 12nm SII and RGB filters

18 hours integration during October 2023

# Education and Outreach News and Opportunities

Our bylaws list the following as our #1 purpose:

*“To encourage and promote interest in the study of astronomy and its allied subjects from the amateur standpoint.”*



Blaine Easterwood

It is in that spirit that I share the following information:

## The LVAAS Book Club

We have a book!

*Astrophysics for People in a Hurry*, by Neil deGrasse Tyson (ISBN: 9780393609394)

Open Discussion at South Mountain (or Zoom) on June 2, 2024, at 11 a.m.

So, if you want to participate in the book club, just get the book and read it. It's that easy. And if the title REALLY describes you, get the audio book, and listen on the go! That's what I did ;)

We will discuss the book in the LVAAS library in early June. If you want to join via zoom, contact me and I'll provide the link.

## Volunteers Needed for April 8th Eclipse Event - With the Da Vinci Science Center at Dieruff High School

If you are not traveling to see the April 8th solar eclipse, and can volunteer for an event with the Da Vinci Center at Dieruff High School, please let me know. The primary activities will be assisting guests with viewing the sun, and sharing your enthusiasm about the wonders of the sky.

We appreciate any time that you can volunteer. So even if it's for only an hour or two, we would love to have your help!

## Volunteers Needed for the Lehigh Valley Space Fest - May 18 and 19

Last year was such a smashing success, that we are doing it again! You may recall that last May LVAAS helped kick off this new event, as a presenting sponsor. We showed up in force with our solar telescopes and binoculars, filters, activities, and enthusiasm. It was a great weekend! I saw one of the largest solar prominences that I've ever seen first hand - about 1/10th of the sun's diameter. That's over 85,000 miles! The scale of our solar system is mind blowing. Anyway, come out and help us share all the great things about astronomy with the public.

When: May 18 and 19, 10 a.m. - 5 p.m.

Where: Paxinosa Elementary School, Easton

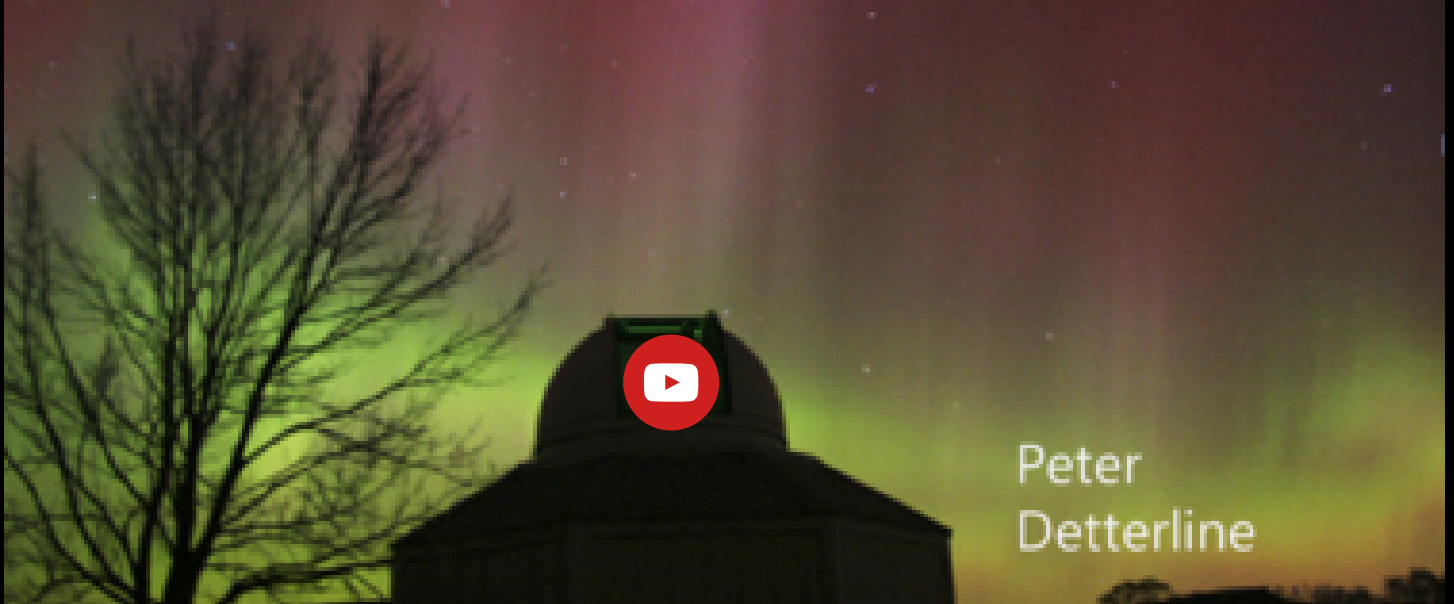
Web: [www.lvspacefest.org](http://www.lvspacefest.org)

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Contact me with any questions or to volunteer: [blaine@ieee.org](mailto:blaine@ieee.org) or [education@lvaas.org](mailto:education@lvaas.org)

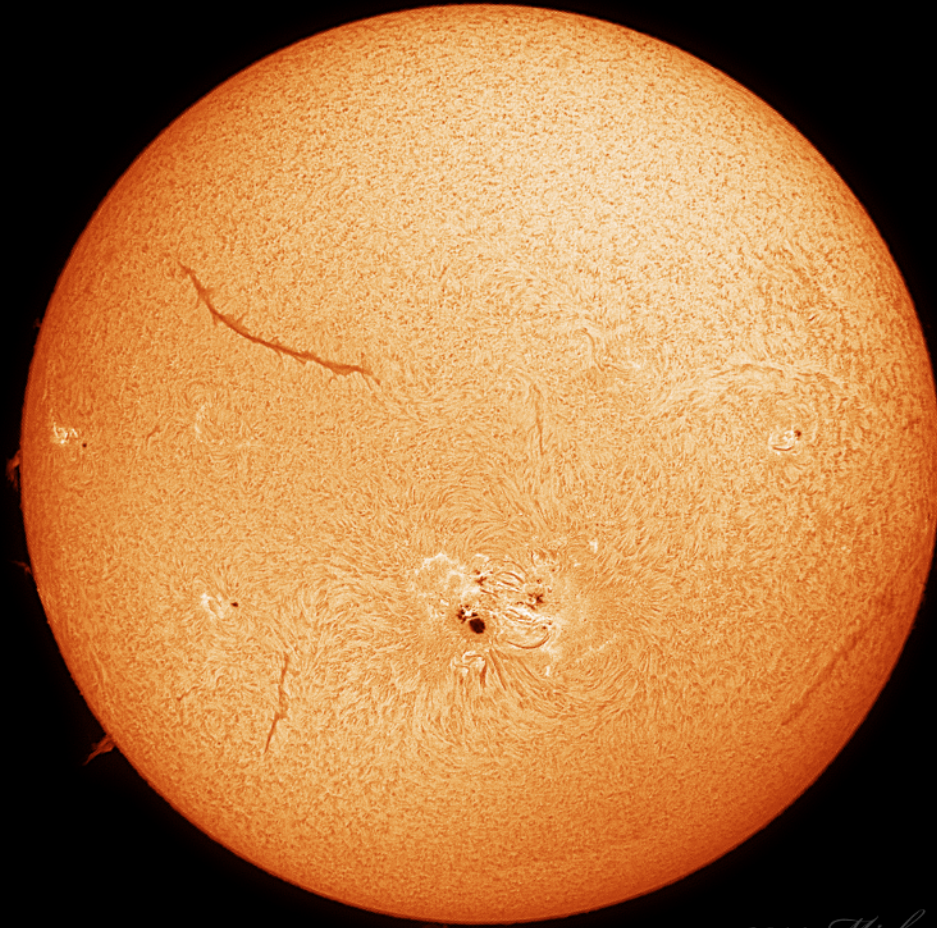


*Peter Detterline's*  
**Night Sky Notebook**  
**APRIL 2024**

**Night Sky Notebook**  
what you see when you look up



Peter  
Detterline



*2014 Michael L. Morgan*

"... the glorious Sun  
Stays in his course and plays the alchemist  
Turning with splendor of his precious eye  
the meagre cloddy earth to glittering gold..."

William Shakespeare

Image capture: Michael L. Morgan ~ RIP  
Submitted by Sandra Repash

## Photograph Number 100,000

By Sandy Mesics

Fifty years ago, on March 1, 1974, Michael D. Worth, senior observer at Swarthmore College's Sproul Observatory, took the 100,000<sup>th</sup> photographic plate through the 24-inch refracting telescope. The star he imaged was named BD +5°1668, commonly known as Luyton's Star. The numbering sequence began under the direction of Dr. Peter Van de Kamp in 1937.

Van de Kamp was a strong supporter of LVAAS and spoke at the dedication of the South Mountain headquarters in 1963. LVAAS occasionally sponsored field trips to Sproul Observatory where on clear nights, members got to observe through the massive 24-inch refractor. The close relationship between LVAAS and Swarthmore continued during Sara Lee Lippincott's tenure at Sproul after Van de Kamp's retirement.

The 24-inch refractor Worth used was built in 1911 by the John A. Brashear Company in Pittsburgh, Pennsylvania. When the telescope was installed at the observatory in 1913, it was the largest on the East Coast of the United States and one of the largest in the world. Because the Sproul refractor had such a narrow field of view, photographs were mainly used to measure the positions of nearby stars, with an attempt to measure any positional changes over time. Some of this work led to the hypothesis that unseen planets were causing movements in nearby stars. Sara Lee Lippincott (1920-2019), then the director of the Sproul observatory, wrote in the *Observer* that the Sproul telescope, despite the bad conditions of suburban Philadelphia, was in continual operation, and managed to see use about 200 nights a year.



Left: the 24-inch telescope. Right: Sara Lee Lippincott

There was a delightful serendipity to the 100,000<sup>th</sup> image. Michael Worth imaged this star at the beginning of his 12<sup>th</sup> year at Sproul Observatory. He also imaged the star in 1963, his first year at Sproul. Since Luyton's Star is 12 light years away, the light photographed on March 1, 1974, left the star one year before Worth started working at Sproul. Worth's spouse and daughter as well

as several staff members were present when he exposed the 100,000<sup>th</sup> plate. The group shared a champagne toast to commemorate the occasion.

Interestingly, Luyton's star is a 9.9 magnitude red dwarf star in Canis Minor, not far from Procyon. There are four candidate planets orbiting this star, one of which is in the star's habitable zone. In 2017 and 2018, a series of radio signals were transmitted to this system, and if anyone there was listening and could respond, we would see a response by 2042.



**Peter Van de Kamp speaking at LVAAS, 1963**

telescope. Swarthmore College re-purposed the Sproul Observatory by transforming the observatory spaces to house the James Hormel and Michael Nguyen Intercultural Center at Sproul Hall.

## References

The *Observer*, May 1974.

Swarthmore College: Peter Van de Kamp Observatory [Link](#)  
Accessed 12/12/2023

In 2009 Swarthmore College opened a new facility: the Peter Van de Kamp Observatory. The 18-foot Ash Dome houses a 24-inch Ritchey-Chretien telescope. Research has focused on exoplanet transits, as part of two exoplanet collaborations: KELT and YETI which are searching for exoplanets around host stars that are bright and young, respectively. Other projects involve studies of stellar rotation, optical signatures of accretion in young stars, and the winds of massive stars. Students are usually involved in these research projects.

In 2017 the Sproul telescope was dismantled and moved to Bentonville Arkansas. Plans are for the telescope to be installed in a Northwest Arkansas observatory.

Explore Scientific covered the bulk of the cost of shipping the

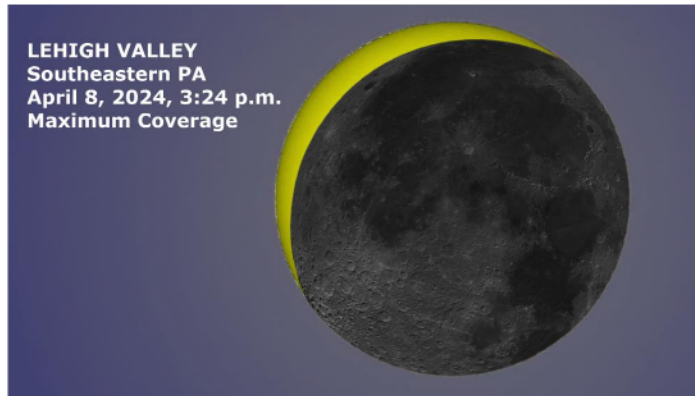


# StarWatch

## Eclipse Day is Here

Here are some final tips and information for viewing the April 8 total solar eclipse specific to the Lehigh Valley. All start and finish times for the eclipse are essentially the same for Southeastern Pennsylvania. *StarWatch* is being sent ahead of schedule so that individuals have a few days to prepare in case arrangements still need to be completed.

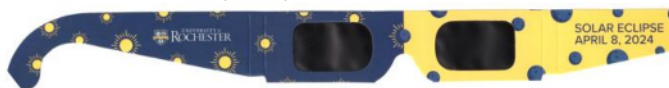
40° 37' 47.96" N <-> 40.62999°	75° 22' 57.12" W <-> -75.38253°	Penumbral duration : 2h 26m 48.0s (partial solar eclipse)	<a href="#">Help</a>																												
98.0m (322ft)		Obscuration : 91.422%	Magnitude at maximum : 0.92264 Moon/Sun size ratio : 1.05189																												
<table border="1"> <thead> <tr> <th>Event (<math>\Delta T=69.1s</math>; alt.=98m)</th> <th>Date</th> <th>Time (edt)</th> <th>Alt</th> <th>Azi</th> <th>P</th> <th>V</th> </tr> </thead> <tbody> <tr> <td>Start of partial eclipse (C1)</td> <td>2024/04/08</td> <td>2:08:20.8</td> <td>+53.9°</td> <td>208.2°</td> <td>238°</td> <td>04.8</td> </tr> <tr> <td>Maximum eclipse (MAX)</td> <td>2024/04/08</td> <td>3:23:44.9</td> <td>+44.5°</td> <td>233.2°</td> <td>324°</td> <td>02.5</td> </tr> <tr> <td>End of partial eclipse (C4)</td> <td>2024/04/08</td> <td>4:35:08.8</td> <td>+32.6°</td> <td>250.0°</td> <td>050°</td> <td>11.9</td> </tr> </tbody> </table>				Event ( $\Delta T=69.1s$ ; alt.=98m)	Date	Time (edt)	Alt	Azi	P	V	Start of partial eclipse (C1)	2024/04/08	2:08:20.8	+53.9°	208.2°	238°	04.8	Maximum eclipse (MAX)	2024/04/08	3:23:44.9	+44.5°	233.2°	324°	02.5	End of partial eclipse (C4)	2024/04/08	4:35:08.8	+32.6°	250.0°	050°	11.9
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This eclipse will be dangerous throughout its entirety because the sun will always be visible. If you have yet to purchase solar glasses for a safe viewing experience, check with Dan's Camera City in Allentown to inquire about their availability. Dan's address is 1439 W Fairmont St, Allentown, PA 18102/Phone: (610) 434-2313.

\* **NEVER, NEVER, NEVER** use sunglasses, multiple pairs of sunglasses, UV (ultraviolet) absorbing sunglasses, colored cellophane, colored filters, neutral density filters (from photo stores), polarizing filters, fully exposed color negatives, or fully exposed black and white (silver less) photographic negatives, or glass smoked by the soot of a candle flame to make filtered, direct observations of the sun. All of these techniques can cause retinal burns and vision loss. Finally, NEVER use a dark absorbing filter attached to the eyepiece end of a telescope. A telescope's primary function is to gather light to make objects appear brighter. Typically, even small telescopes and binoculars gather dozens to hundreds of times the light the eye receives. A telescope focuses this intense light and hotter solar image near the position of the dark absorbing filter for inspection by the eye. The absorbed light will cause the filter to become very hot and can lead to breakage and, almost inevitably, permanent damage to the eye of an unsuspecting observer. I have bummed cigarettes from my students and lit them at the eyepiece end of a telescope to prove that fact!

\* A number 14 welder's shade will provide adequate protection, as will other suggestions, which can be found [here](#). Scroll down to *Gear and Techniques*. Stay calm, stay focused, stay safe, and enjoy the natural wonder of a solar eclipse. Ad Astra! [Join](#)



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Moravian University Astronomy - [astronomy.org](http://astronomy.org)

# The 2023 Black Forest Star Party at Cherry Springs

by Mike Waddell

Several years ago, Eric Loch encouraged me to go to some obscure place in Potter County called Cherry Springs. His idea of a fun few days was gathering with several hundred like-minded people in an open field, sleep in tents, brave whatever weather rolled in, and stare in wonder at actual dark skies. Well, it took some coaxing but if you know Eric, he is quite the salesman and as an incentive in October, 2021 he even provided a tent that was up and ready when I got there and he came through on his promise to provide coffee first thing each morning. The beautiful dark skies materialized, and I was hooked.

Two trips later and I now have a slightly bigger car with a carrier on the back, a 14'x9' tent that I could park my car in, my own coffee maker and I'm a veteran of three Black Forest Star Party events. As part of the trip in September I also wandered away from the campsite during the afternoon siesta time and explored Lyman Run and Ole Bull State Parks...well worth the effort. Oh, and I also checked out sunspots thanks to Bill Dahlenburg.

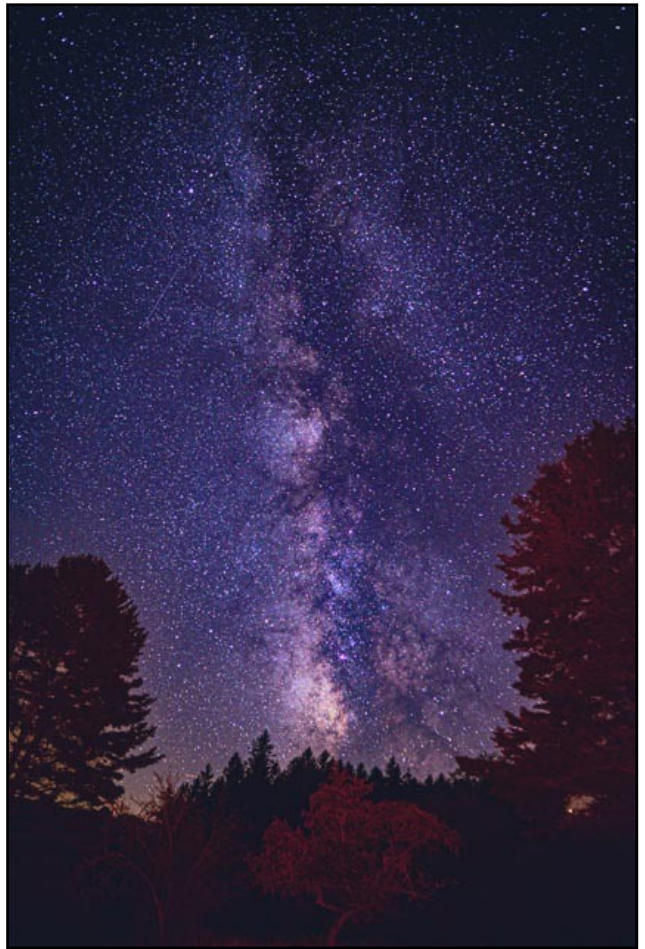
As darkness rolls in, the campsite starts stirring about 6:30 pm when scopes are uncovered, dinners eaten, red lights tested, and the lethargic energy level of the afternoon dissipates in anticipation of a perfect night for observing. At this year's event there were three, (yes three!), excellent nights for viewing, well worth the \$40 price of admission. Perhaps most interesting to me is the diversity of interests. A camper next to me had a beautiful Dob she used to work through viewing the Herschel Objects. Others were excitedly talking about finding planets, nebulae, clusters, galaxies with some imaging and others just enjoying their "finds." A special treat happened Saturday evening at about 8:30 pm when some yelled "Starlink West!" We all turned and there was a bright fast moving white streak going west to east that quickly broke up into dots along the path...could you plan anything better for a bunch of sky watching aficionados?!

As for me, I prefer nightscape imaging, and including the Milky Way in shots with the landscape is my passion. I wander around the site for a few hours each night looking for points of interest in which to frame the Milky Way. This year another camper next to me was there for the first time with his teenage daughter so we did some exploring and found a nice shot of the Milky Way between two pine trees that we both shot with our iPhones in raw mode...wow. There were also excellent speakers on Saturday including Nico Carver, who encouraged us to use our smart phones to do deep sky astroimaging...who could have seen that coming and how will next year's Black Forest Star Party surprise us?





Upper (R) and lower (L) images captured by smartphone. Images courtesy Mike Waddell. October 2023 Black Forest Star Party





## STARGAZERS GROUP

- All members are welcome regardless of experience.
- New members are welcome to learn how to operate their telescopes, and experienced members can share their knowledge and socialize in a casual, relaxed atmosphere.
- The group's goal is to give everyone a chance to develop their night sky skills together regardless of experience!
- Take this opportunity to use the library and/or receive training on the club's scopes.
- Meetings will be on the **2nd Friday of every month** at South Mountain Headquarters at 7 p.m., rain or shine. If you need help with your equipment please arrive before dark so there is time to go over it. We all love the night sky and look forward to sharing it with you!

Kyle Kramm, Stargazers Group Coordinator

[Kman10274@gmail.com](mailto:Kman10274@gmail.com)

# Astronomy Equipment For Sale



FOR SALE: MEADE 10" LX 200 SCHMIDT CASSEGRAIN TELESCOPE with tripod and new scope hard case. GPS, Auto star controller, full set of eye pieces with case, moon and nebula filters, dew shield with heater. Scope dew cover, 1 extra LX200 tripod are included with this sale.

Also, this LX200 scope has brass internal gears, not plastic. Telrad, Auto star and planet finder with hand controller. Many extras. Telescope and equipment, all are in excellent condition.

Asking \$2200 or best offer.

Please contact Ken Walters 609-227-1489

Ad sponsored by Joe Zitarelli



# 2024

## Have you renewed your LVAAS membership?

LVAAS PayPal link: [https://www.paypal.com/donate/?hosted\\_button\\_id=FBP8Y5VX5QXNW](https://www.paypal.com/donate/?hosted_button_id=FBP8Y5VX5QXNW)

(remember to add a note with your name, and membership type)

### **If your information has changed:**

Online information update form: <https://form.jotform.com/233314308714147>

Printable form:

[https://lvaas.org/filemgmt\\_data/files/LVAAS\\_Membership\\_Renewal\\_Form.pdf](https://lvaas.org/filemgmt_data/files/LVAAS_Membership_Renewal_Form.pdf)

**Complete instructions:** <https://lvaas.org/page.php?page=Renewing>

**Questions?** email [membership@lvaas.org](mailto:membership@lvaas.org)

### **Renewals were due by March 1.**

New members who joined after October 1st are paid up for 2024.

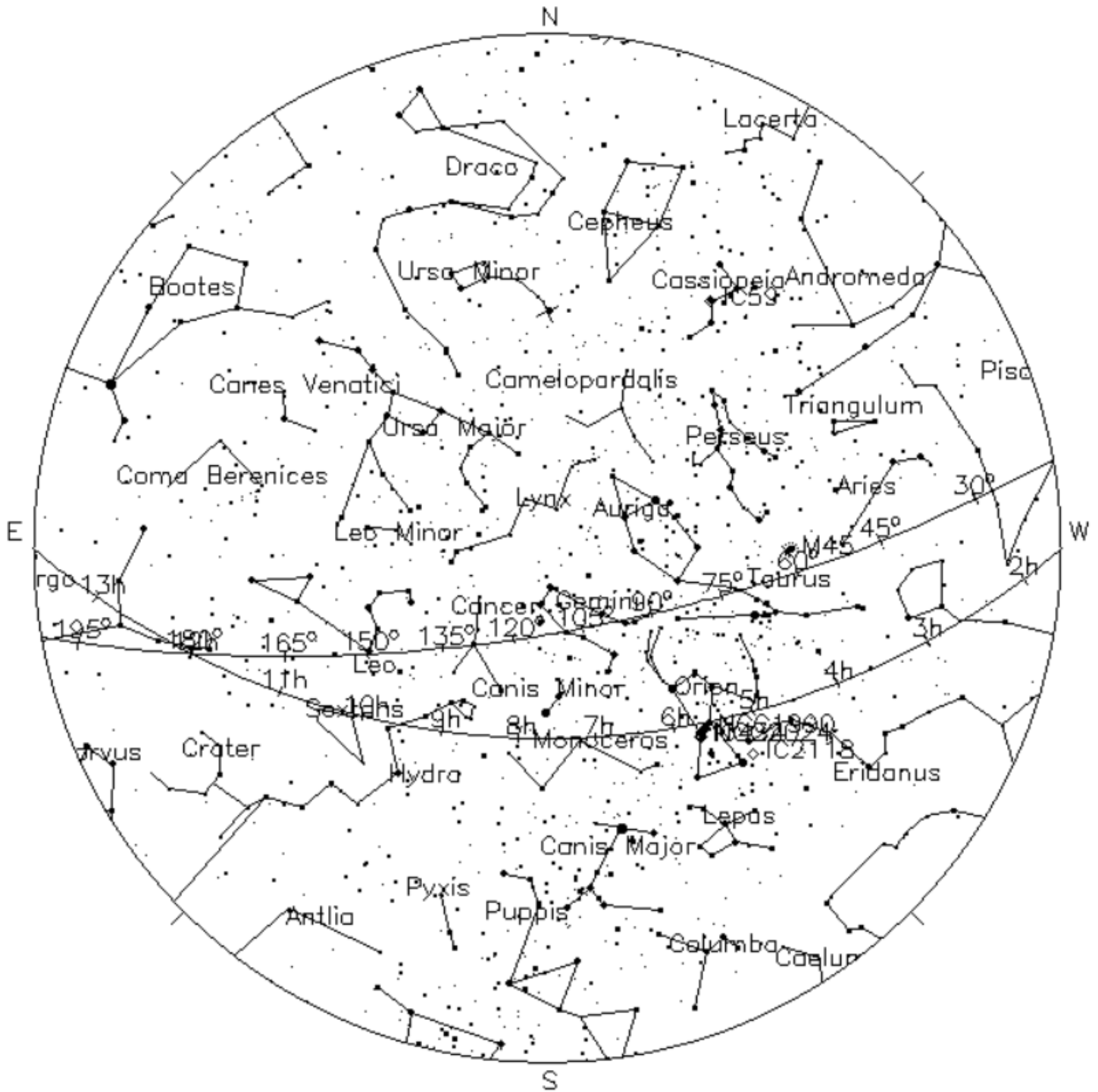
Regular: \$45

Family: \$65

Junior/Student: \$15

Sustaining: \$90

# Sky Above 40°33'58"N 75°26'5"W Monday April 01 2024 00:00 UTC



**Your Sky was implemented** by John Walker in January and February of 1998. The calculation and display software was adapted from Home Planet for Windows. The GIF output file generation is based upon the ppmtogif module of Jef Poskanzer's pbmplus toolkit, of which many other components were used in creating the images you see here.

ppmtogif.c - read a portable pixmap and produce a GIF file

Based on GIFENCOD by David Rowley

Lempel-Zim compression based on "compress"

Modified by Marcel Wijkstra

Copyright © 1989 by Jef Poskanzer.

**Customize Your Sky at** <http://www.fourmilab.ch/yoursky/>

# APRIL

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
	Last Quarter Moon <u>01</u>	<u>02</u>	<u>03</u>	<u>04</u>	<u>05</u>	Astroimaging Meeting <u>06</u> - 7:00 PM
<u>07</u>	* Solar Eclipse * <u>08</u>	<u>09</u>	<u>10</u>	<u>11</u>	Stargazers Group Meeting <u>12</u>	Star Party <u>13</u>
General Meeting 7:00 PM South Mountain <u>14</u>	First Quarter Moon <u>15</u>	<u>16</u>	<u>17</u>	<u>18</u>	<u>19</u>	NEAF <u>20</u>
NEAF <u>21</u> Deadline for submissions to the Observer	<u>22</u>	Full Moon <u>23</u>	<u>24</u>	<u>25</u>	Scout Camping <u>26</u>	Scout Camping <u>27</u>
Scout Camping <u>28</u> LVAAS Board of Governors Meeting	<u>29</u>	<u>30</u>				

# MAY

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
			Last Quarter Moon <u>01</u>	<u>02</u>	MegaMeet at PR <u>03</u>	MegaMeet at PR <u>04</u>
MegaMeet at PR <u>05</u> General Meeting 7:00 PM South Mountain	<u>06</u>	<u>07</u>	<u>08</u>	<u>09</u>	Stargazers Group Meeting <u>10</u>	Astroimaging Meeting - 7:00 PM <u>11</u>
Deadline for submissions to the Observer <u>12</u> Mothers Day	<u>13</u>	<u>14</u>	First Quarter Moon <u>15</u>	<u>16</u>	<u>17</u>	Star Party <u>18</u>
LVAAS Board of Governors Meeting <u>19</u>	<u>20</u>	<u>21</u>	<u>22</u>	Full Moon <u>23</u>	Scout Camping <u>24</u>	Scout Camping <u>25</u>
Scout Camping <u>26</u>	Memorial Day <u>27</u>	<u>28</u>	<u>29</u>	Last Quarter Moon <u>30</u>	<u>31</u>	

# 2024 LVAAS EVENT CALENDAR

Contributed by Bill Dahlenburg

2024 LVAAS Event Calendar											
	Sundays		Board meeting	Saturday			Observer Submission Deadline	Moon Phase			
	General Meeting time	location		Astro-Imaging	Star Parties	Stargazers Group		New	1 <sup>st</sup>	Full	3 <sup>rd</sup>
January	14	3:00 PM Muhlenberg	28	no meeting	no meeting	no meeting	1/21/24	11	17	25	3
February	4	3:00 PM Muhlenberg	25	no meeting	no meeting	no meeting	2/18/24	9	16	24	2
March	10	3:00 PM Muhlenberg	24	no meeting	16	8	3/17/24	10	17	25	3
April	14	7:00 PM S.M.	28	6	13	12	4/21/24	8	15	23	1
May	5	7:00 PM S.M.	19	11	18	10	5/12/24	7	15	23	1 30
June	9	7:00 PM S.M.	30	1 29	15	14	6/23/24	6	14	21	28
July	13/14	5:00 PM S.M.	28	x	20	12	7/21/24	5	13	21	27
August	10/11	7:00 PM Pulpit	25	3 31	17	9	8/18/24	4	12	19	26
September	8	7:00 PM S.M.	29	x	14	13	9/22/24	2	11	17	24
October	13	7:00 PM S.M.	27	5	12	11	10/20/24	2	10	17	24
November	10	2:00 PM S.M.	24	2	9	8	11/17/24	1	9	15	22
December	8	2:00 PM ?	29	7	no meeting	no meeting	12/22/24	1 30	8	15	22

July, Aug & Dec are Saturday meetings with rain date on Sunday  
 Jan, Feb & March meetings are at Muhlenberg College  
 August meeting is at Pulpit Rock  
 December meeting / Holiday Party (TBD)

NEAF 4/20 - 4/21  
 Mega Meet 5/3 - 5/5  
 CSSP 6/6 - 6/9  
 Stellafane 8/1 - 8/4  
 BFSP

October 4-5-6?

## Publishing images is a balancing act!

When preparing your images for publication in *The Observer*, please consider the following guidelines:

### Put the quality in:

- ▶ Considering the "print" size of the image, make sure you have at least 150 pixels/inch.
- ▶ Use a reasonably good quality for the JPEG compression ratio.

### But watch the "waistline"!

- ▶ Don't go too much above 200 pixels/inch max.
- ▶ Use the lowest JPEG quality that still looks good!
- ▶ Shoot for <300KB for a 1/2 page image or <600KB for a full page.

**Tip:** If you're not Photoshop-savvy, you can re-size and compress undemanding images ("human interest" not astroimages), with an online tool such as:

<https://www.ivertech.com/freeOnlineImageResizer/freeOnlineImageResizer.aspx>. It will also tell you the pixel size and file size of your original, even if you don't download the processed copy.

**The Observer** is the official monthly publication of the Lehigh Valley Amateur Astronomical Society, Inc. (LVAAS), 620-B East Rock Road, Allentown, PA, 18103, and as of June 2016 is available for public viewing. Society members who would like to submit articles or images for publication should kindly do so by emailing *The Observer* editor, France Kopy, at [observer@lvaas.org](mailto:observer@lvaas.org).

Articles submitted prior to the Sunday before the monthly meeting of the board of governors (please see calendar on website) will appear in the upcoming month's issue. PDF format is preferred. Early submissions are greatly appreciated. Articles may be edited for publication. Comments and suggestions are always welcome.

LVAAS members please feel free to submit ads for astronomy equipment you have for sale, and additionally you may sponsor a maximum of three ads from non-members per year. Please submit your finished ad as a PDF, with pictures and text. Every attempt will be made to include submissions in a timely manner.

Every effort will be made to properly credit the sources of the material used in this publication. If additional credit is required, please notify the editor.

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If you are interested in becoming a member of LVAAS, please visit our [membership page](#) for information on applying.

Existing members please update your LVAAS profile information by emailing the membership director at [membership@lvaas.org](mailto:membership@lvaas.org).