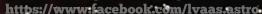
The Official Publication of the Lehigh Valley Amateur Astronomical Society https://lvaas.org/
https://www.facebook.com/lvaas.astro



August 2025 Volume 65 Issue 08



LVAAS General Meeting at Pulpit Rock

Sat., 08/23/25 @ 7 p.m. Arain date 08/24/25 @ 7 p.m.

Directions to astronomical park

Prospective new members who wish to attend, please email: membership@lvaas.org.

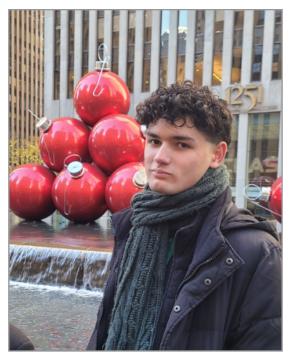
"Astronomy Bingo!"

Join us for a fun and informative evening of star-gaming! Bring your binoculars, telescopes, and smart telescopes (or use ones that we offer). Spot the objects on your card until you fill a column or a row, and then gather to discuss fun facts and stellar evolution. Participants can share some of the images they acquire that night, and we will share some of the images created by LVAAS members. The night will end with an astronomy trivia game featuring the evening's objects!

facilitated by

Brett Fadem and Jonathan Cuadra





After a 10-year acting career in NYC, **Brett Fadem** attended Grinnell College from 1991 to 1995, where he graduated with a B.A. in physics. Continuing on to graduate study in high-energy nuclear physics at Iowa State University, he earned his Ph.D. in 2002. After a two-year teaching position at Colby College in Maine, he took a faculty position at Muhlenberg College in 2004 where he has taught for twenty-one years. Over the interval, with the help of three NSF grants, he has exposed dozens of undergraduate students to nuclear physics research at Brookhaven National Laboratory in Long Island using the Relativistic Heavy Ion Collider (RHIC). Recently, he started teaching astronomy at Muhlenberg College and has become involved with the Skynet consortium that uses a worldwide network of robotic telescopes to teach introductory astronomy and more advanced courses in observational astronomy.

Jonathan Cuadra has been fascinated by the cosmos since he was young, and has always had lingering questions about how the universe and things in it work. Throughout his academic career and research opportunities he has been able to embrace his curiosity and interests. He is a student at Muhlenberg College (class of 2026) majoring in physics, and minoring in mathematics and computer science. Jonathan is interested in aerospace engineering, astrophysics, and other related fields and is looking to gain experience in both physics and engineering projects and industries.

LVAAS MegaMeet 2025 Announcement

August 22-24, 2025



MegaMeet is LVAAS's 'bare bones' star party, without vendors, speakers or registration fees.

Members of LVAAS as well as members in good standing of regional amateur astronomy clubs are invited to attend.

MegaMeet attendees can either come for evening observing sessions or camp for the weekend. Camping is encouraged; space is limited. Hot dogs, chips and soda will be available for purchase.

Telescope Training: Frank Lyter and **Ron Kunkel** will be on hand to train members on our club's telescopes

Rain Date Please check *lvaas.org* for details.

Location: Pulpit Rock Astronomical Park directions

Contact: 610-797-3476

LVAAS hopes to see you there!

LVAAS

LVAAS General Meeting Minutes – July 12, 2025

The July 2025 LVAAS general meeting was conducted electronically using an online service and at the South Mountain headquarters. Approximately 40 people were in attendance. Director Benjamin Long opened the meeting at 7:05 p.m. The meeting's presentation was "Climbing the Cosmic Distance Ladder," featuring LVAAS member, Linda Prince.

How do we know that the Andromeda Galaxy is 2.5 million light-years away from us? Did you know that the Earth-Sun distance was unknown until it was measured by observing the transit of Venus in 1761? Our knowledge about cosmology would not be possible without being able to measure distances in space. Because of the vast size of the universe, distance measurements cannot be made directly, but must be made indirectly, using smaller distances as rulers to measure larger ones, like climbing up the rungs of a ladder. This talk will summarize the story of measuring cosmic distances, from the time of the ancient Greeks to the present day.

Linda Prince has had an interest in science since childhood, and has been an amateur astronomer since she purchased her first telescope about 30 years ago. When she couldn't find all those little objects in the sky with her scope, she sought help from an astronomy club on Long Island, and now enjoys membership here at LVAAS.

What we do know about the universe is based on our ability to measure distances to objects. The cosmic ladder depicts how we use more near objects as a baseline for measuring the distances to more distant objects. Eratosthenes started with measuring the size of the earth. Then Aristarchus used a lunar eclipse to measure the distance to the moon, the size of the moon, and estimated the value of the astronomical unit (AMU). He also used a solar eclipse to estimate the distance to the sun, and proposed that the earth orbits the sun (heliocentric model.)

Copernicus taught that the earth goes around the sun, and Kepler, using his and Tycho Brahe's data, figured out the distance from the sun to the planets using the distance the earth lies from the sun as a baseline. A transit of Venus was used by Edmund Halley to determine the distance from the Sun to the Earth. Parallax and luminosity are used to measure the distance to stars in the Milky Way.

To measure the distance to more distant objects, standard candles are needed. Henrietta Swan Leavitt used Cepheid variables to measure the distance to nearby galaxies. Type 1a supernovae are used to measure the distance to more distant galaxies.

After questions were taken, Director Benjamin Long opened the business meeting at 8:10 p.m. The topic of the special meeting was to make changes to the current year budget. The LVAAS Board of Governors at their June 2025 meeting voted to increase the budget of South Mountain Maintenance for the current year by \$4000. The purpose of the increase is to pay for repairs made necessary by water erosion at South Mountain to include regrading part of the clearing near the entrance and for our access road repairs. The budget change was passed unanimously, 31 - 0, by vote of the members present with 31 voting members constituting a quorum. A break was taken at 8:12 p.m. The informational meeting resumed at 8:35 p.m.

Membership: Rich Hogg

• The following members completed their second readings and are now full members:

Wendy Jamison

Sean Jamison

Noah Scott

Devon Smith (family membership with Jessica Zuber)

• The following members completed their first readings:

Paul Shanahan

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

Glenn Garcia (family membership with Jacqueline Blas)

Zechariah Ziegenfus

General Comments: Benjamin Long

• We would like to recognize all of the volunteers who helped out with the recent Star Party and who helped with today's picnic:

Ben Schultz

Kate Santee

Dr. Becky Frank

Earl Pursell

Kyle Kramm

Gary Schuster

Phillip Doherty

Nicole Novaco

Linda Prince

Bill Dahlenburg

Jamie Elovski

Joe Zitarelli - special thanks for presenting

Tom Duff

Nicole, Henry and Craig Wade

- Mega Meet is being changed to the weekend of August 22-24, 2025 at Pulpit Rock.
- The August 2025 General Meeting at Pulpit Rock will be changed to Saturday August 23, 2025. Rain date will be Sunday August 24, 2025.
- An email on MegaMeet and the monthly meeting will be sent to the membership.

South Mountain Maintenance – Bill Dahlenburg

- We are doing maintenance each Saturday from 9 a.m. until about noon at South Mountain. If you would like to volunteer assistance, your help would be welcome.
- In addition, if you would like to be trained on any of the telescopes, or to see what is available in the rental fleet, this can be done on Saturday mornings also.

<u>Pulpit Rock Observatories – Frank Lyter</u>

- Frank and Ron Kunkel are available to train members on the telescopes at Pulpit Rock and to get members an access code to the gate.
- You are encouraged to join the Pulpit Rock Buzz group (see our website) to be notified of activities at Pulpit Rock.
- Contact information is on the contact page of the website.
- A question was brought up about the status of the 40" Telescope Project. At this point a mechanism to attach the secondary mirror needs to be designed, holes need to be drilled in the truss structure and the metal parts need to be powder coated.

Stargazers Group - Kyle Kramm

- The group is designed to assist members with their equipment in a relaxed environment.
- The meetings are held at South Mountain at 7:00 p.m. on the second Friday of each month.

<u>Library - Joe Zitarelli</u>

Videos of the presentations from the general meetings will be stored online starting with May
 2023. If any members are interested in seeing any of the videos please contact Joe Zitarelli.
 Contact information is on the contacts page of the website, and he will share the video with you.

LVAAS Calendars - Mike Huber

• 2025 LVAAS calendars are still available at a cost of only \$5. Not only are there images taken by LVAAS members, but the calendar includes what is viewable high in the night sky that evening as well as other astronomical information and LVAAS activities.

Next General Meeting:

• The next general meeting will be held at Pulpit Rock on Saturday August 23, 2025 starting at 7:00 p.m. to coincide with MegaMeet. The rain date will be Sunday August 24, 2025.

The July general meeting was recorded.

The meeting was adjourned at approximately 9:20 p.m.

Submitted by Joe Zitarelli, Secretary



Via Sandy Mesics, Programs Chairperson

Upcoming LVAAS General Meeting Speakers

August: **Dr**. **Brett Fadem** and **Jonathan Cuadra** will speak in person; their topic is "Astronomy Bingo!"

September: **Joe Zitarelli** will speak in person on "The Expanding Universe." October: **Mike Huber** will be back in person to do "1913 Astronomy: Part 2"

November: Ray Harris will speak in person on "Meteorites."

December: Nico Carver (via Zoom) "Telescopes for Astrophotography and How to Choose the Right One for You"

Please contact astrosandy@gmail.com if you have ideas for speakers, or would like to do a talk yourself.

THANK YOU, LVAAS VOLUNTEERS!

LVAAS Star Party Director Aidan Berger thanks the following members for their help with the July star party and picnic: Ben Schultz, Kate Santee, Dr. Becky Frank, Earl Pursell, Kyle Kramm, Gary Schuster, Phillip Doherty, Linda Prince, Bill Dahlenburg, Jamie Elovski, Joe Zitarelli - special thanks for presenting!, - Tom Duff, Nicole, Henry and Craig Wade. LVAAS couldn't do it without you! Are you a member looking to volunteer? It's a great way to meet people and learn how the club works. Just show up and sign in!

Via France Kopy, Newsletter Editor

If you're a member with good English language skills, careful attention to detail, and the ability to take 45 minutes or so to focus on a task and give brief feedback via email, please contact me about becoming a volunteer proofreader for our newsletter, *The Observer, at* editorlyaas@gmail.com. We need to add more more people to the pool. You would receive credit for this in the black box on the last page of the newsletter and on our news page (here). Thanks!

Via Benjamin Long, LVAAS Director

LVAAS is in the process of re-keying the locks on our properties. If you haven't picked up your **free replacement keys**, please contact the "Key Coordinators" listed on our website's Contacts page to do so.

Via Earl Pursell, UACNJ Liason

Public Program Nights and weekly star parties are up and running at United Astronomy Clubs of New Jersey. There will be a 30-60 min talk every Saturday from the beginning of April until the end of October. Anyone who would like to give a talk is welcome to contact Chris Callie (reddog176@gmail.com). UACNJ also has its own YouTube channel and the schedule of videos is on its website. Please visit uacnj.org to watch and /or subscribe.



cover image: M16 The Eagle Nebula

Acquisition Date: June 22, 2025 Camera: ZWO 2600 MC Pro Duo Location: Cherry Springs State Park Mount: IOptron CEM 40

Telescope: Stellarvue SXV130T

The Eagle Nebula (cataloged as Messier 16 or M16; and as NGC 6611, also known as the Star Queen Nebula) is a young open cluster of stars in the constellation Serpens, discovered by Jean-Philippe de Cheseaux in 1745–46.

Imager: Thomas Duff



2026 LVAAS Youth Sponsorship Program Proudly Administered by Astronomy in the Community





The Lehigh Valley Amateur Astronomical Society is pleased to introduce the first annual LVAAS Youth Sponsorship Program for 2026, proudly administered by <u>Astronomy in the Community</u>.

To give back to our LVAAS community for your support during 2023 and 2024, Claudio T. Stabile and Ava Stabile, founders of Astronomy in the Community, proposed this initiative to provide similar opportunities to future youth members.

This astronomy project focused program aims to foster astronomy interest among young LVAAS members by providing financial and in-kind support for ambitious astronomy related projects. By recognizing and rewarding their dedication, we inspire future generations of astronomers within our community.

One applicant will be selected in January 2026 and awarded a \$1,000 monetary grant along with support from LVAAS members to accomplish their project. The program is open to LVAAS members in good standing, up to 25 years old, having volunteered at a minimum of 4 LVAAS events in 2025, and with a strong astronomy project proposal. The application deadline is January 16, 2026.

Applications open September 1, 2025. In the meantime, volunteer, gather ideas and put together your best presentations!

For more information, please visit https://lvaas.org/page.php?page=YouthSponshorshipProgram







- Share Your Universe in Our 2026 Calendar! Have you captured a stunning celestial scene? We invite you to submit your best astrophotography for a chance to be featured in the official LVAAS 2026 calendar!
- All Cosmic Subjects Welcome! We're looking for a wide range of astronomical wonders, including deep-sky
 treasures like galaxies and nebulae, breathtaking planetary and lunar images, and captivating nightscapes that blend
 Earth and sky. All forms of media are welcome as well. Feel free to submit your sketches, paintings, composites, etc.
- Let Your Talent Shine! All selected photographers will receive full credit for their work in the calendar, including your name and a link to your personal website or social media, if you wish.
- Ready to Submit? Here's How:
 - » Email your high-resolution images to m.huber614@gmail.com
 - » Please use the subject line: "2026 Calendar Submission".
 - » Include a title and a brief description for each submission.
- **Don't Delay!** The deadline for all submissions is September 30th.
- We can't wait to see the cosmos through your lens!



Peter Detterline's Night Sky Notebook for August 2025



Postwar Planning

By Sandy Mesics

Last month I reported on the efforts of the Lehigh Valley Astronomical Society (LVAS) to get back on its feet in the aftermath of World War II. The *LVAS Bulletin* had resumed publication in March 1945 on the eve of the end of the war in Europe, but the group had yet to meet in person. In those days, meetings and occasional "open houses," the equivalent of our "star parties" were held at the home of L.H. Cutten in Allentown. Cutten was an engineer associated with Mack Trucks. Although some LVAS members had not returned from the service, the group planned an



informal "open house" gathering on July 16, 1945, at 8:30 p.m. at Cutten's home. However, the event had to be postponed due to bad weather. It was rescheduled for the first clear night of the week beginning on Monday August 13, 1945.

The event came off as planned on that date. According to the *LVAS Bulletin*, "The gathering was all that we had intended it to be and more." Fifteen members and friends registered. "Old ties were certainly renewed as the evening went by. Missed by all, of course, were those of our group still serving in the Armed Forces. We were very happy, however, to see some of them represented at the meeting by other members of their families."

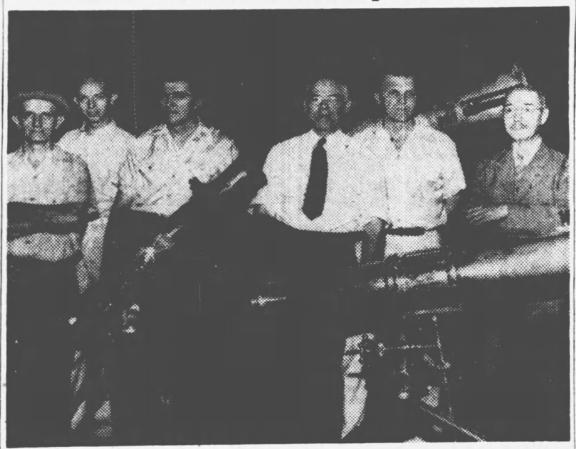
There were four telescopes at the event: four-, six-, and ten-inch reflectors, and a refractor. The group started by observing the moon, which was two days prior to first quarter. Later, the group observed double stars in Ursa Major and the Northern Cross, portions of the Milky Way (in West Allentown!) and M13 in Hercules. Apparently, the event was a success. According to the *LVAS Bulletin*, "Before they left, everyone expressed the fact that they had enjoyed the night under the stars, thoroughly." The event was covered by a reporter from the Allentown *Call-Chronicle* and *Morning Call* newspapers, though the editor of the *LVAS Bulletin* stated that he got some of their facts wrong, likely the reference to "astrologers" and the statement that members had to build their own telescopes.

The *LVAS Bulletin* reported that the night after the gathering was VJ day, which effectively ended World War II. Actually, VJ day was declared on August 15th, not the 14th. The editor was eloquent and joyful: "Now that victory is here we are thankful to Almighty God and hope for the speedy return of our brothers to our cordial circle again. May the new era which has dawned upon civilization be one of enlightenment and peace through understanding and knowledge of what is good. The Lehigh Valley Astronomical Society dedicates its every effort in the future to the distribution of such knowledge as will certainly benefit the citizens of our community."

References

Allentown *Morning Call* August 14, 1945. *L.V.A.S. Bulletin,* July 1945, August 1945.

L. V. Astronomers Study Heavens



Six members of the Lehigh Valley Astronomical society are shown with the telescopes used in their study of the heavens. Pictured are: Robert Fisher, owner and maker of the two telescopes shown in the foreground; M. J. Fisher, Eugene E. Carl Jr., secretary of the society; L. H. Cutten, whose 10-inch telescope is in the back; Leonard Teilmann, and Dr. Paul W. Kunkel, head of the mathematics department at Cedar Crest college.

The Lehigh Valley Astronomical so- 10-inch reflector type belonging to ciety held its first meeting since the Mr. Cutten, and the other two are start of the war last night at the four and six inch reflector instru-home of L. H. Cutten, 2815 Washing- ments owned by Robert Fisher. All ton St., with 10 members present.

t 5)

ć 1

> Under the direction of Mr. Cutten owners. and Dr. Paul W. Kunkel, advisors to first quarter.

Hercules constellation. contains approximately 50,000 stars.

The largest is a reflector. three telescopes.

three telescopes were handmade by the

The society was organized in 1936 the society, the members studied and for the purpose of bringing together observed the craterous and mountain- all local amateur astrologers, and now ous surface of the moon, now in its has 50 active members, three of whom are in service.

Later the group turned their at-tention to the M-13 cluster of the ship is that each member build his This cluster own telescope. This provision includes the stipulation that members must Observations were made through grind and polish his own lens and

The Morning Call, Tuesday August 14, 1945



M101 The Pinwheel Galaxy Imager: Thomas Duff

LVAAS Astroimaging Director Tom Duff captured this image on June 23, 2025 during the Cherry Springs Star party at Cherry Springs, PA. An enlarged version is on the following page.

"The Pinwheel Galaxy (also known as Messier 101, M101 or NGC 5457) is a face-on, counterclockwise intermediate spiral galaxy located 21 million light-years (6.4 megaparsecs) from Earth in the constellation Ursa Major. It was discovered by Pierre Méchain in 1781 and was communicated that year to Charles Messier, who verified its position for inclusion in the Messier Catalogue as one of its final entries."

Imaging Stats

60x5min=5Hrs Stellarvue SVX130T ZWO 2600MC Pro Duo IOptron CEM40

StarWatch



In the Shadow of Mr. Eclipse

I was saddened by the news of the passing of Fred Espenak, 71, known worldwide as Mr. Eclipse. He died on June 1. Before retirement, Espenak was an astrophysicist working for over 30 years at NASA's Goddard Space Flight Center in Greenbelt, Maryland, specializing in infrared spectroscopy of planetary atmospheres. His real passion, however, was witnessing and chasing after solar eclipses, as well as authoring and co-authoring over 30 books on the subject. He produced a 5,000-year canon of solar eclipses and a 5,000-year canon of lunar eclipses, all of which are available in the public domain via the Internet. I think that is what made him special. Countless eclipses, both lunar and solar, that I have dreamed of seeing and have published in this column had an origin in Fred Espenak's calculations.

As I searched for more information about his life, I was struck by the similarities between his existence and mine. I am not trying to elevate myself. I heard Dr. Espenak speak about his eclipse experiences while in Australia in 2023, and I briefly spoke with him after his presentation. That's it. He was not a friend nor an acquaintance, but he was someone I deeply respected and admired for his public outreach in the field of eclipse astronomy.

We were both baby boomers. His interest in astronomy bourgeoned at age seven or eight. I was eight. We both cut our teeth on the original Golden Book of Astronomy, dissecting it until the pages became tattered from use. His first solar eclipse was witnessed at the age of 11 as a partial event in southern New York State at the home of his grandparents. It was a total eclipse across central Maine.

At 13, I was stuck in Europe with my grandparents, but I was fully aware of the event and wanted desperately to be at home. I knew that my father would have taken me to see it. Please understand that my experiences in Europe, Germany in particular, were a game-changer for how I wanted to experience life and for my enjoyment of travel. Still, July 20, 1963 was a difficult day as I mentally imagined what I might have seen just 12 road hours from my Pennsylvania home.

I was in college at 19 when I traveled to Lumberton, North Carolina, to witness my first total solar eclipse on March 7, 1970. Fred Espenak was 18 and saw it from Windsor, NC. We both spent most of our precious three minutes within the moon's umbral shadow, trying to image the event rather than gazing at it. That has been a problem for both of us: trying to capture the perfect picture rather than just marveling at the beauty of the eclipsed sun and surrounding corona. We were lucky; conditions were overcast to the south.

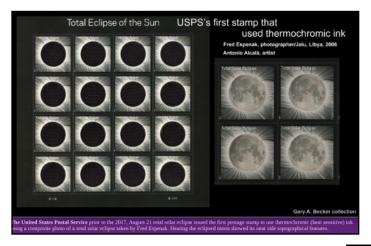
Clouds did steal the show for the July 10, 1970 TSE that I witnessed with my family from Cap-Chat on the Gaspe Peninsula. Espenak was also clouded out. Satellite images revealed a very narrow band of

overcast conditions near totality, so we could not have been that far apart. We both witnessed the long duration June 30, 1973, TSE from Africa; Espenak was in the Sahara Desert, and I was at sea off the coast of Mauritania.

We both spent our lives immersed in the science that we loved, marrying later in life than our peers, most likely because of our astronomical pursuits. Espenak met his wife Patricia; you guessed it, on a trip to see a total solar eclipse in India. I met my Susan at a presentation on the moon that I gave at the Lehigh Valley Amateur Astronomical Society in 1978.

Fred Espenak had his 2006 TSE composite image, taken from Jalu, Libya, immortalized on the first US Postal Service stamp to use thermochromic ink. Heat changed the eclipsed moon covering the sun into a full moon. My image of Comet Hale-Bopp graces several popular award medals currently sponsored by the American Astronomical Society. I also spearheaded and designed a science award medal for Moravian University. Images are here. We both constructed backyard astronomical observatories after retirement; mine is in the final stages of completion. I am confident that had Fred been living on my block when we were kids, we would have become the best of friends.

However, I can honestly say that I'm still happy to be alive, looking forward to the next total solar eclipse in 2026, off the coast of Spain. Thank you, Mr. Eclipse, Fred Espenak, for freely sharing to all who would listen, your love and enthusiasm for eclipse chasing—a life well-lived. Ad Astra!





Pier and Tripod for Sale

Pier: A massive fixed pier, solid steel, black powder coat, very heavy. 31" tall, 10" dia, with AstroPhysics 10" plate drilled for Milburn and Meade heavy duty wedges. Uses 1/4" wall thickness 10" diameter steel pipe with 1/4" thick 11" square steel plate with four 3/4" x 1" oblong holes for mounting welded to bottom. I used this on a concrete base inside a little dome where it carried a 14" Meade SCT. Asking \$100.

Tripod: Peter Lisand studio video tripod with leveling plate, flippable rubber or steel spike feet, 31" tall but adjustable up to maybe 50". Stainless steel and aluminum construction. Meant to carry heavy studio video cameras but is excellent for portable imaging rigs. I used this for various astronomy setups including a C8 and other larger telescopes. In excellent condition. eBay price \$350, asking \$100.

Steve Walters

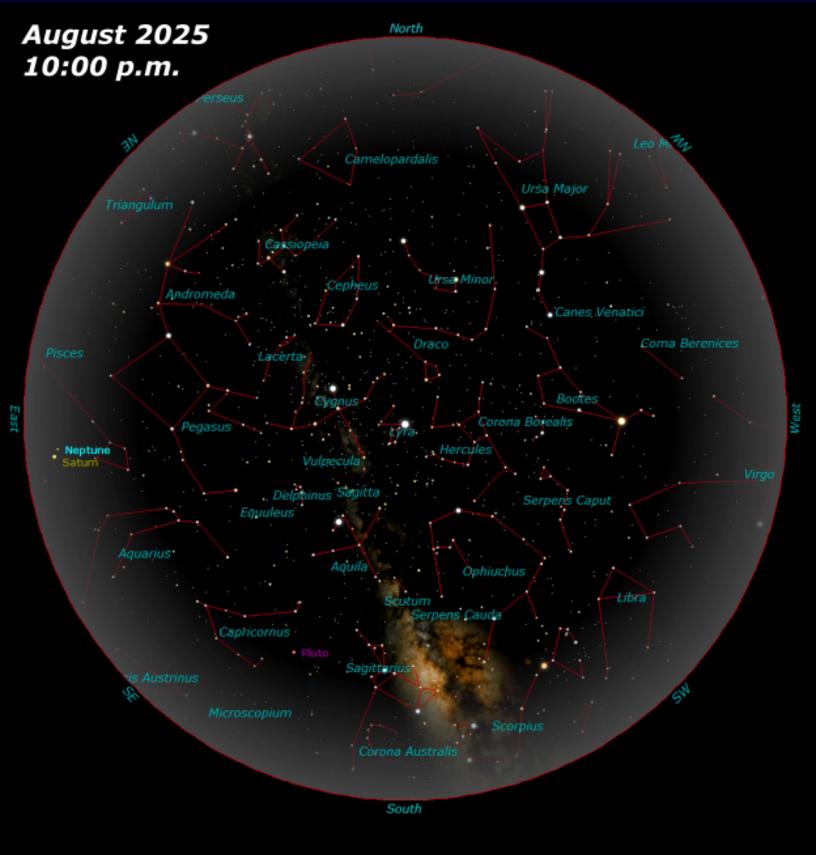
Steve.K3SW@gmail.com

570.730.6436

Additional photos available on request. Prices are negotiable.







For access to more features, please click here

Contributed by Gary A. Becker

AUGUST 2025

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	
					First Quarter Moon <u>01</u>	Star Party	<u>02</u>
93	<u>04</u>	<u>95</u>	<u>06</u>	97	Scout Camping at Pulpit Rock 08 Stargazers Group Meeting	Scout Camping at Pulpit Rock Full Moon	<u>09</u>
Scout Camping at Pulpit Rock <u>10</u>	11	12	<u>13</u>	14	15	Last Quarter Moon Astroimaging Meeting - 7:00 PM	<u>16</u>
17	18	<u>19</u>	20	<u>21</u>		MegaMeet 2025 (Rain Date) General Meeting 7:00 PM Pulpit Rock	<u>23</u>
MegaMeet 2025 (Rain Date) 24 Deadline for submissions to the Observer General Meeting 7:00 PM Pulpit Rock Rain Date)	25	<u>26</u>	27	28	29		<u>30</u>
First Quarter Moon 31 VAAS Board of Governors Meeting							

SEPTEMBER 2025

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	
	Labor Day <u>01</u>	<u>02</u>	03	04	Scout Camping at Pulpit 05 Rock	Scout Camping at Pulpit 0 Rock	<u>)6</u>
Scout Camping at Pulpit 07 Rock Full Moon	08	09	10	Patriot Day <u>11</u>	Stargazers Group 12 Meeting	Astroimaging Meeting - 17:00 PM	<u>13</u>
Last Quarter Moon 14 General Meeting 7:00 PM South Mountain	15	<u>16</u>	17	<u>18</u>	19	2	20
Deadline for submissions 21 to the Observer	Autumnal equinox 22	23	<u>24</u>	<u>25</u>	26	Star Party 2	27
LVAAS Board of 28 Governors Meeting	First Quarter Moon 29	<u>30</u>					

2025 LVAAS EVENT CALENDAR

Contributed by Bill Dahlenburg

2025 LVAAS Event Calendar												
	Sun General time/date	days Meeting location	Board meeting	Astro-	Saturday Star Parties	Stargazers Group	Observer Submission Deadline	Moon Phase New 1 st Full 3 rd				
	3:00 PM		Ü					29	6	13	21	
January	12	Muhlenberg	26	no meeting	no meeting	no meeting	19					
February	3:00 PM 2	Muhlenberg	23	no meeting	no meeting	no meeting	16	28	5	12	20	
March	3:00 PM 9	Muhlenberg	30	no meeting	8	14	23	29	6	14	22	
April	7:00 PM 13	S.M.	27	26	12	11	20	27	5	13	20	
May	7:00 PM 4	S.M.	25	17	3	9	18	27	4	12	20	
June	7:00 PM 8	S.M.	29	14	7	13	22	25	3	11	18	
July	5:00 PM 12 (13)	S.M.	27	19	5	11	20	24	2	10	17	
August	7:00 PM 23 (24)	Pulpit	31	16	2	8	24	23	1 31	9	16	
September	7:00 PM 14	S.M.	28	13	27	12	21	21	29	7	14	
October	7:00 PM 12	S.M.	26	11	25	10	19	21	29	7	13	
November	7:00 PM 9	S.M.	30	15	29	14	23	20	28	5	12	
December	2:00 PM 14	?	28	13	no meeting	no meeting	21	20	27	4	12	

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 4/5 - 4/6 Mega Meet 8/22 - 8/24 CSSP 6/19 - 6/22 Stellafane 7/24 - 7/27 BFSP

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 400 pixels/inch max.
- Use the lowest JPEG quality that still looks good!
- ► Shoot for 400kb for a 1/2 page image or 1MB 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://imageresizer.com/resize/download/6779bd945d63ac1a3032f37d

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.

Astroimaging Director, Tom Duff is our new Astroimaging editor, and welcomes all image submissions.

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. Early submissions are greatly appreciated. PDF format is preferred. 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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