The Observer

The Official Publication of the Lehigh Valley Amateur Astronomical Society
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March 2025
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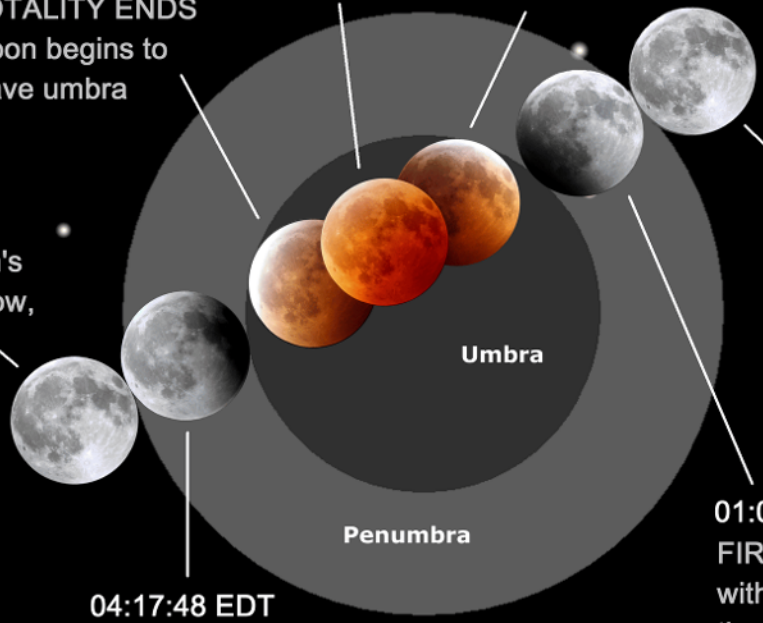


Total Lunar Eclipse

Morning of March 14, 2025

LVAAS General Meeting Public Welcome

Sunday, March 9 at 3 p.m. at Muhlenberg College

Trumbower Hall Room 130

"From Black Holes to Finding Habitable Planets: A Chronological Approach to Understanding Graduate Student Research"

Speaker is in person

presented by

Grace Sweetek

As a student in higher education, you encounter many opportunities to explore different types of research. In her talk, Grace will present a chronological viewpoint of her research experiences, from classifying exotic transient events to searching for habitable exoplanets. The two main research areas Grace will cover are her time working for Space Telescope Science Institute identifying Tidal Disruption Events, a process that describes an interaction between a star and a black hole, and her current position working for Penn State's astronomical instrumentation group, designing a small explorer capable of identifying the habitability of rocky exoplanets. She hopes to provide context to answer questions concerning black holes, exoplanets, and the engineering behind astronomy, all while providing a framework to understand how a student goes from an interest in astronomy to creating a career and education surrounding their passion.

Grace Sweetak is a 2nd year PhD student in physics at Lehigh University. Growing up on the Eastern Shore of Maryland, Grace found her passion for science through her father, a career engineer. Her passion developed through her undergraduate education at Rollins College, where she received a degree in physics and minor in mathematics, all while competing as a Division 2 student athlete in lacrosse. She had the opportunity to present her undergraduate research at the American Astronomical Society conference in January 2023, which led her to an internship at Space Telescope Science Institute, the science operations center for the Hubble Space Telescope, and mission operations for the James Webb Space Telescope. Currently, Grace is conducting her dissertation research with a collaboration at Penn State, working with Dr. Randall McEntaffer and his astronomical instrumentation team designing a new type of diffraction grating capable of stellar characterization of rocky exoplanets.

Prospective new members who wish to attend the meeting please email membership@lvaas.org.

The LVAAS 2025 Calendar will be available for sale at this event. Purchase price is $20.

it's

2025

Don't forget to Renew your LVAAS Membership!

LVAAS PayPal link: 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

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

Questions? email membership@lvaas.org

New members who joined after October 1st are paid up for the following year.
Regular: $45
Family: $65
Junior/Student: $15
Sustaining: $90

The LVAAS 2025 Calendar is Here! Now!

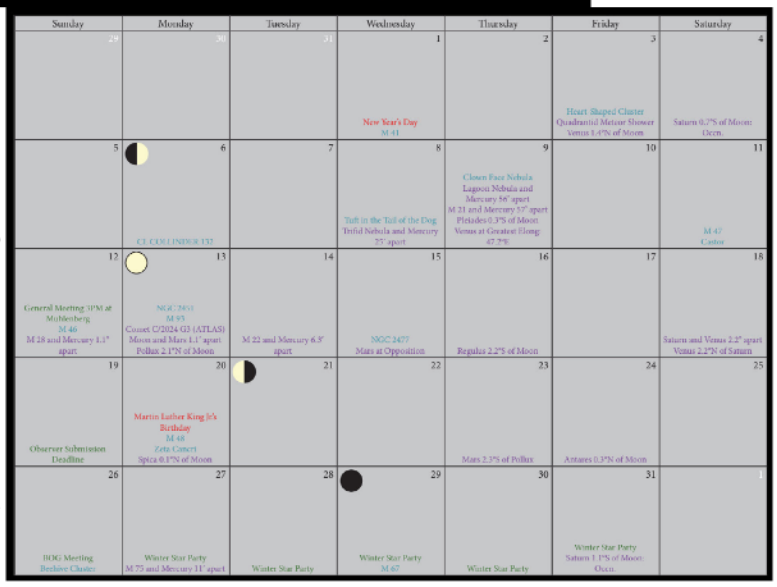
Explore the Universe All Year Long!
Your Guide to the Night Sky in 2025

What's Inside?

- Club Events: Dates for star parties, meetings, and other events.
- Astrophotography: Incredible images contributed by our talented members.
- Significant Astronomical Dates: Meteor showers, conjunctions, eclipses, and more.
- Viewing Highlights: Best times to see planets, galaxies, nebulae, and more!

Why You'll Love It:

- Perfect for planning your stargazing sessions.
- Supports our local astronomy club and outreach.
- A must-have for beginners and seasoned astronomers alike!



Order Your Calendar Today!
Send an email to mhuber614@gmail.com
with subject "Astronomy Calendar Order"

Calendars will be available for purchase for $20 at LVAAS events
both at Muhlenberg College and at South Mountain Headquarters

Via Sandy Mesics, Programs Chairperson

Upcoming LVAAS General Meeting Speakers **(March meeting at Muhlenberg)**

In March, **Grace Sweetak** from Lehigh University will speak live on her research
In April, **Franck Marchis** from Unistellar will speak via Zoom on Citizen Science Work.
In May, **Brian Kloppenborg** from the AAVSO will speak via Zoom on Citizen Science.
In July, **Linda Prince** will speak; topic TBA.
In August, **Brett Fadem** and **Jonathan Cuadra** are tentatively scheduled.
In September, **Joe Zitarelli** will speak on The Expanding Universe.
In October, **Mike Huber** will be back to do 1913 Astronomy, Part 2
Speakers are needed for June, November and December

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

Via Benjamin Long, LVAAS Director

LVAAS is in the process of re-keying the locks on our properties. To request your **free replacement keys**, please contact the "Key Coordinators" listed on our website's Contacts page.

Via Earl Pursell, Key Coordinator

Anyone who has received a new HQA key (for the door into the South Mountain main building next to the oil tank): We recently installed new weather-stripping on this door, and it is a little tight when you try to lock or unlock it. You may have to lean on the door to compress the weather-stripping to turn the key. Hopefully, the weather-stripping will eventually compress and this will cease to be a problem. I'm sending this alert out to make everyone aware and to try to help everyone avoid breaking their key off in the lock.

KUDOS! THANK YOU, LVAAS VOLUNTEERS!

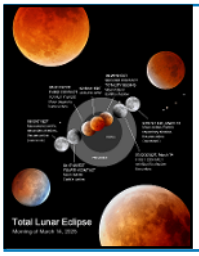
A big thank you goes out to our volunteers who bring LVAAS out to the community! Recently Linda Prince, Earl Pursell, Kyle Kramm and Blaine Easterwood worked an event at the Da Vinci Science Center; and also Eric Loch did a presentation at the Masonic Lodge in Emmaus and received a generous donation. Thank you, Masons! And thank you, LVAAS volunteers!

Via France Kopy, Editor

We're trying a new sky map this month, courtesy of LVAAS member and former director, Gary A. Becker; check it out! *The Observer* is always looking for new thoughts and ideas for improvement in 2025 and beyond. If you'd like write an article, now's the time! Have an idea for a new feature? Contact me to discuss it! observer@lvass.org If no response, please forward your email to editorlvaas@gmail.com

Via Earl Pursell, UACNJ Liason

Public Program Nights will begin in April at United Astronomy Clubs of New Jersey. UACNJ has its own YouTube channel and the schedule of videos is on its website. Please visit uacnj.org to watch and /or subscribe.



cover: **A Circle of Total Lunar Eclipses** *cover photographs and design*: **Gary A. Becker** astronomy.org

(Top left moving clockwise):

May 16, 2022 - **Nov. 19, 2021** (very deep partial) - **Dec. 21, 2010** - **Nov. 8, 2022** (Amal Shokr).

Timings of the March 14, 2025 total lunar eclipse provided by NASA.

Diagram photos, Dec. 21, 2010, as well as all other images, Gary A. Becker, except where noted.

LVAAS General Meeting Minutes – February 2, 2025

The February, 2025 LVAAS general meeting was conducted electronically using an online service and at Muhlenberg College. Director Benjamin Long opened the meeting at 3:00 p.m.

Tonight's general meeting's presentation was " Universe In 1913: Astronomy Through a Century-Old Lens" by LVAAS member and former director, Mike Huber. Mike will take us back to 1913 to explore the scientific understanding of astronomy as presented in a university textbook from that era. We'll delve into how astronomers of the time perceived the cosmos, from their theories about the structure of the Milky Way to their insights into celestial phenomena. This retrospective will highlight the foundational ideas and limitations of early 20th-century astronomy, showcasing how far we've come in just over a century.

Mike discovered his passion for astrophotography in 2021. Some of his images of the universe have been recognized as "Top Picks" on AstroBin, and was given the honor of having his astroimage of M13, the great globular cluster in Hercules, featured on the cover of this year's edition of *The Observer's Handbook*. Growing up with a father who was a professor of theoretical astrophysics, Mike developed a deep love of astronomy, which continues to inspire his exploration of the night sky and his contributions to the club.

<u>Membership: Rich Hogg</u>

- The following members completed their Second Readings and are now full members:
  Flavio and Lori Da Silva (family membership) with Colton Da Silva
  Doug Dietrich and Rachel Paul (family membership)
  Sierra Kunigus
  Edward O'Brien

- The following members completed their first readings:
  Njklas Mueller
  Cooper Mulderry
  Laura Novak

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

General Comments:

- Our first star party of the year will be held March 8, 2025 at 6 p.m. at our South Mountain Headquarters.

Star Party Coordinator- Aiden Berger:

- The first star party of the 2025 season is coming up fast this Saturday March 8 at our South Mountain HQ. I am looking for volunteers to give a presentation on a topic of their choosing at our upcoming star parties! Whether you're fascinated by black holes, planetary exploration, the search for extraterrestrial life, or even the history of space missions, this is a great opportunity to engage with fellow enthusiasts and spark meaningful discussions. No prior experience with public speaking is necessary—just a love for the cosmos and a willingness to share your insights! Presentations can be as formal or casual as you'd like, and we're happy to provide any support or resources you may need. The presentations will be held at 7 p.m. in the Grady planetarium. If you wish to volunteer, my contact information is on our website.

Astroimaging - Tom Duff:

- We will resume our astroimaging meetings in April, 2025. Check our website calendar.

South Mountain Maintenance – Bill Dahlenburg

- We are always looking for help. We are usually here on Saturday mornings to assist with your telescopes or to give you a tour of our facilities. Please contact Bill to confirm that someone will be there before arriving.
- We have multiple telescopes and cameras for rent; please contact Mike Clark or Jamie Elovski.

Stargazers Group - Kyle Kramm

- Our meetings will resume in April of 2025.
- Meetings are held on the second Friday of each month at South Mountain HQ starting at 7:00 p.m.
- There is no set agenda, and this is an excellent opportunity to get help with your equipment or to learn how to use the LVAAS observatories or our rental equipment.

Next General Meeting:

- Sunday March 9, 2025 at 3 p.m. at Trumbower Hall, room 130, Muhlenberg College

The February general meeting was recorded.

Submitted by Beth Julius, Secretary

Hang in there, everyone; better days are just around the corner! Thanks again to Tom and Beth Julius for the star attraction at last summer's picnic! - editor

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 Astronomy in the Community.

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

Peter Detterline's

Night Sky Notebook

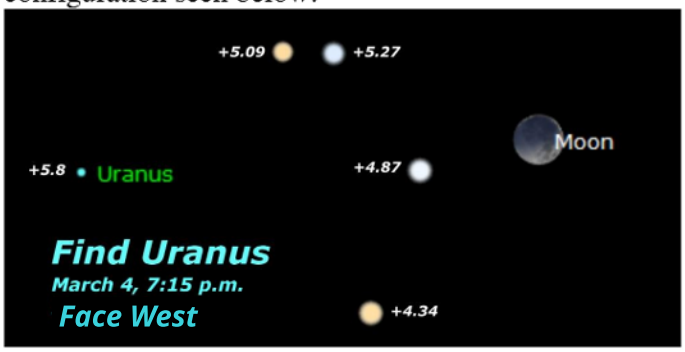
March 2025

While you're here,
why not subscribe?

StarWatch

Moon Dances with the Planets

This *StarWatch* is being sent early. Several weeks ago, the moon played among all the planets in the evening sky, except Mercury which rose before sunrise. Now Mercury has scurried to the eastern side of the sun and is visible low in the west 30 minutes after sundown. Technically, all of the seven planets are in the evening sky right after sunset. Still, unless you possess some alien technology that can shroud the sun and create near-perfect dark sky conditions, you will be unable to see them all. **On Saturday, March 1**, immediately after sunset, the planetary lineup will be as follows: Saturn, Mercury, Neptune, (crescent moon), Venus, Uranus, Jupiter, and Mars. Don't forget to look down at Earth to make it an even eight. * The media has been billing this lineup for weeks, misleading the public into believing that all the planets will appear like a string of pearls garnishing the twilight sky. The easily seen planets will undoubtedly be pretty, with Mercury, the moon, brilliant Venus, Jupiter, and Mars, like gems curving across the early evening sky. Saturn will be just nine degrees from the sun and seven degrees above the horizon at sunset **on March 1**. * By 6:15 p.m., the ringed world will be only three degrees above the horizon, while Sol will be only five degrees below the horizon during *civil twilight*. Simply put, there will be enough light in the sky for all to see what they are doing. Venus should be easy with the unaided eye, but initially, observers will require binoculars for Mercury. *Nautical twilight* follows civil twilight when shipboard navigation becomes possible using the 57 *Select Stars* cataloged in the *Nautical Almanac*. Finally, *astronomical twilight* occurs when the fainter stars begin to peak through the darkening heavens, ending when the sun is 18 degrees below the horizon. By 6:45 p.m., as nautical twilight deepens, Mercury should become visible to the unaided eye about five degrees above a nearly flawless western horizon. Neptune will be only two degrees, four moon diameters to the left of Mercury; however, Neptune will be 4000 times fainter. Unless you are Superman supported by alien technology and can fly off into space, your chances of viewing Neptune are essentially zero. So Saturn and Neptune will be no-shows because of their proximity to the sun. * The upside will be the trifecta of solar system objects visible on **March 1**. They will include the goddess of beauty, Venus, the 5.5 percent razor-thin waxing crescent moon with plenty of earthshine, and most likely the messenger god, Mercury. Observe during nautical twilight, 7:15 p.m. Go **here** to view the full planetary parade **on Saturday, March 1**. * **On Tuesday March 4**, the 31 percent crescent moon is five degrees to the right of Uranus, high in the west by 6:45 p.m. Binoculars should quickly pick up the second last planet as a faint star-like object nearly one binocular field left of Luna, particularly if you wait another 30 minutes until conditions are well into astronomical twilight. The picture below represents a locator map for finding Uranus **on March 4**. The more positive the number associated with the star, the fainter it is, but all should be easily visible through binoculars. Face east and place the moon on the right side of your field of view. Uranus will be the faintest object in the configuration seen below.



As the week continues, the moon glides higher into the sky, missing Jupiter by nearly eight degrees **on Wednesday, March 5**. **By Saturday, March 8**, Luna, now a much brighter waxing gibbous moon, more than half lit, snuggles up to ruddy Mars with less than 1.5 degrees of separation, a nice view through binoculars. **By Thursday, March 13, at 7 p.m.**, Mercury and Venus are positioned 5.5 degrees apart and five degrees above the western horizon at 7 p.m. Have fun watching the sky this week and next week. There will be some beautiful sights and more to come. Ad Astra!

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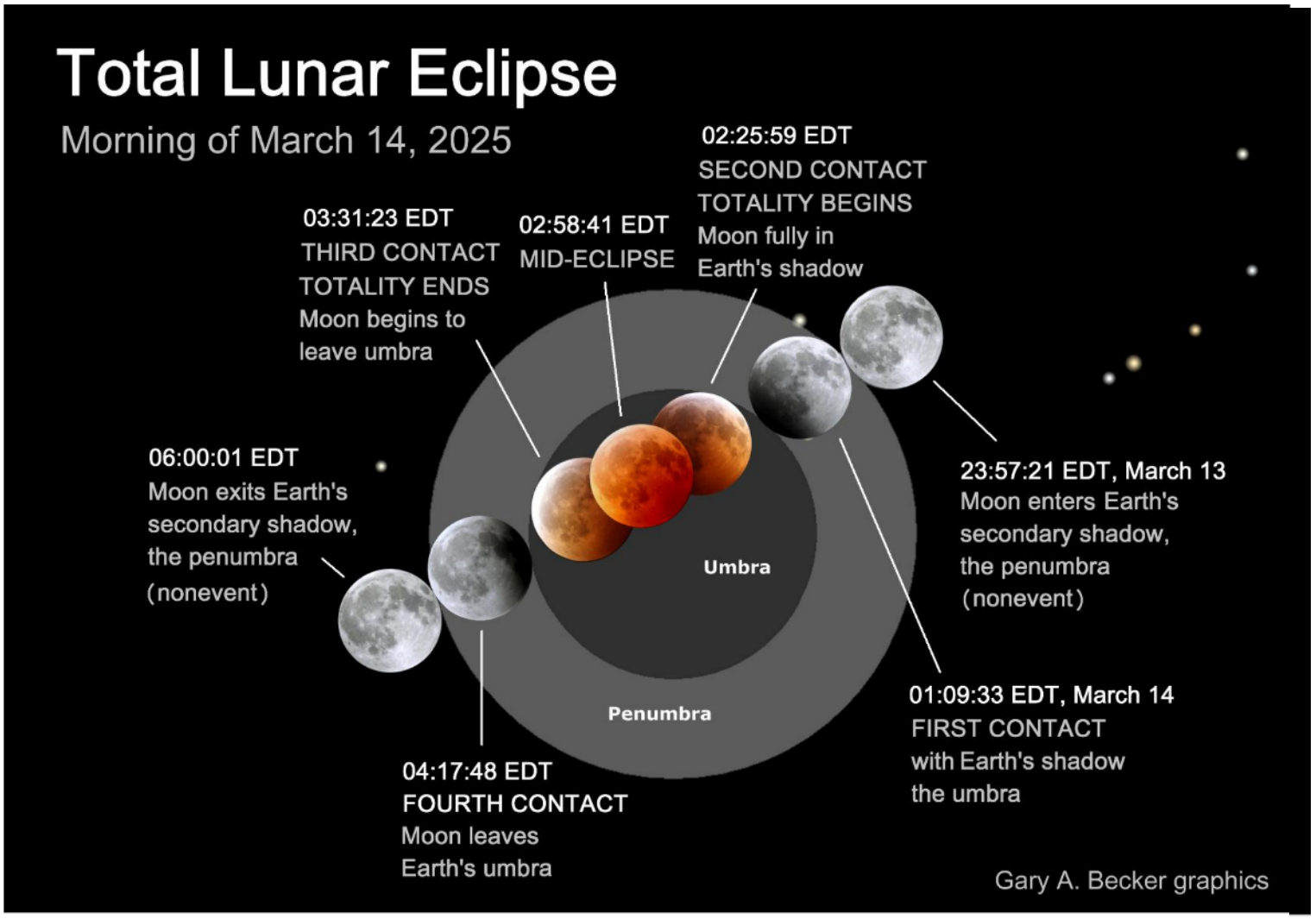
Moravian University Astronomy - astronomy.org

StarWatch

Total Lunar Eclipse Next Friday

The moon hides in Earth's shadow on the morning of March 14 to produce what should be a very colorful total lunar eclipse across the Americas. The drawing below comprises authentic images taken by the author on the bone-chilling morning of December 21, 2010, and then added to a computerized mockup of the eclipse using Software Bisque's *The Sky*. The umbra (main shadow) and penumbra (secondary shadow) of Earth are represented by different shades of grey. While the moon is within the penumbra, decreasing light from the Earth, blocking more and more of the sun's light, causes the moon to have a dusky appearance, especially as Luna gets closer to the penumbra-umbra boundary. The diminution of light is represented in the photos but not in the drawing. Any location on Luna in the umbra sees Earth completely covering the sun. Lunar totality happens when the moon is entirely immersed in Earth's umbra. The stages of the eclipse are given in military time, a 24-hour system with hour: minute: second calculated by NASA when the event occurs. Also note that the umbra and penumbra are invisible against the black sky and, if precisely represented in the drawing, would become darker towards the umbra's center. Enjoy the beauty of a total lunar eclipse. Ad Astra!



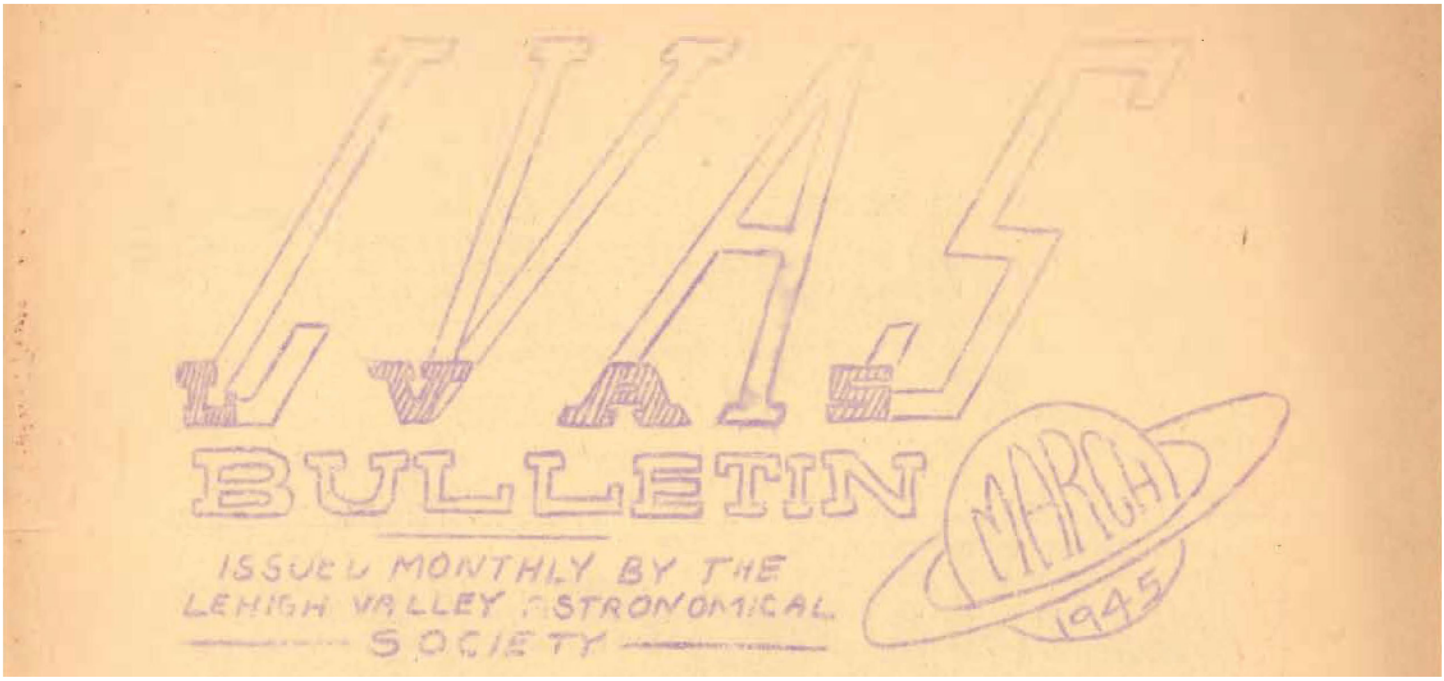
©Gary A. Becker -- beckerg@moravian.edu or
garyabecker@gmail.com
Moravian University Astronomy - astronomy.org

Postwar Planning

By Sandy Mesics

In March 1945, members of the Lehigh Valley Astronomical Society (LVAS) were feeling hopeful. For two and a half years the group had not met because of World War II. Now with victory in Europe close at hand, Eugene Carl, the LVAS Secretary, issued a new "pre victory" issue of the *LVAS Bulletin*. This issue was limited to two pages, mostly because producing it was a one-person job.

The aim of resuming the newsletter in the absence of the regular meetings was to keep the membership together, to send issues to members still in the service, to publish a monthly digest of astronomical events and interesting sky objects, to provide notice to members when regular meetings would resume, and short [emphasis theirs] articles of interest by members.



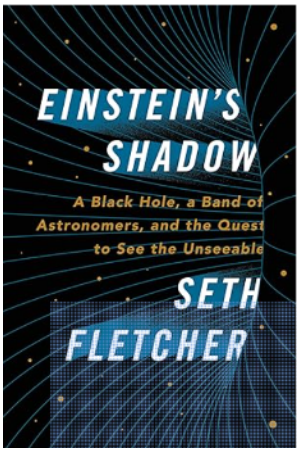
At the time the LVAS had about 17 active members, all men. Of them, at least six had served in the war. The publication acknowledged the three LVAS members still in the service: Ralph Schlegel, Lionel Adda, and Paul Frankenfield. The publication urged its readers to "… forward their suggestions to the Sec. either by telephone or by mail. Express your views and let's do some postwar planning now!"

It would be some months until regular meetings would resume, but their "postwar planning" would yield good results.

References

LVAS Bulletin, March 1945.

Joe Zitarelli ~ From The Library



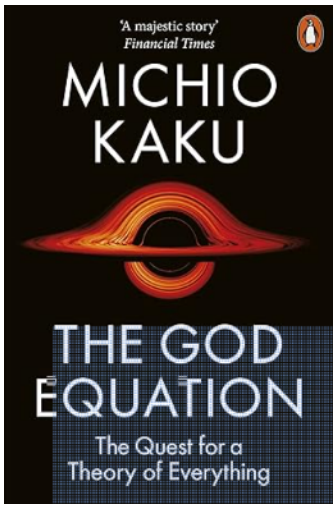
Einstein's Shadow – A Black Hole, a Band of Astronomers, and the Quest to See the Unseeable – by Seth Fletcher

"It's not that hard to photograph a black hole, really – all scientists have to do is build a telescope the size of the entire planet" – Jason Fagone

There is a good chance that you have seen an image of the supermassive black hole at the center of M87. There is also a good chance that you have seen an image of the supermassive black hole at the center of our Milky Way galaxy called Sagittarius A* - but have you noticed that no one in the Astroimaging group has posted an image of either these or any other black holes? That's because you need to use a radio telescope, and it has to be the size of the entire planet. And of course, they don't sell a telescope like that on Amazon. The telescope used is called the Event Horizon Telescope. Of course, a single telescope could not be built the size of planet Earth. So, the team used multiple telescopes from around the world and synchronized them, along with a lot of computational power, and were able to create a scientific image of a supermassive black hole. Fortunately for us, Seth Fletcher, a science writer, was embedded with the team for the five years it took to take the first image of a supermassive black hole. He now tells us the story of how it was done.

The body of the book is written in chronological order, almost like a diary. Part one of the book is "The Veil and the Shadow." Here he discusses background material along with just enough astrophysics of black holes and their history. Keep in mind that the author is a writer, and not an astrophysicist, so there are no equations and no math involved. Part two is "Monsters Out There" and you've moved from general black holes to supermassive black holes. In part three, "Firewalls" he discusses the enormous obstacles that had to be overcome. Anyone who has tried to simply image another galaxy knows you don't just point and click. Not only did they have to deal with weather issues, but they also had to deal with American bureaucracy as well as multiple foreign governments. And finally in part four, "The Earth-Sized Telescope" they cover the equipment that finally went into their image as well as how the image was processed.

I found this book, and the process required to create this image, fascinating. In the past, much of man's scientific work was done by individuals. But now, much is done in large collaborations, and this project was about as large as you can get. In addition to learning about supermassive black holes, this book gave me a much better appreciation for the Event Horizon Telescope and the scientific endeavor that it was. This book has also caused me to better appreciate the image that was produced. If you marveled at the image and would like to know more about what went into producing it, this book is for you.



The God Equation: The Quest for a Theory of Everything – by Michio Kaku

"Compelling...Kaku thinks with great breadth, and the vistas he presents us are worth the trip" – *The New York Times Book Review*

I did not do a full review of this book because it's not an astronomy or astrophysics book. Kaku talks about space, but it's the 10- and 11- dimensional space of hyperspace. If you're into theoretical physics and want a short book that tells the story of the quest for that final theory where everything boils down to one equation - this is a book for you. While there is a lot of qualitative quantum mechanics, you don't need any advanced math background. Spoiler alert, Kaku feels the final answer is String Theory. While he acknowledges that a major criticism of the theory is that in 2024 it is not testable, he does discuss how to get over some of the hurdles the theory currently faces. Finding the Higgs Boson was child's play compared to proving a graviton exists.

From The Library ~ Joe Zitarelli

In the summer and early fall I participated in a Zoom course on astronomy entitled "Adventures in Astronomy: Approaching Infinity." I watched it along with other LVAAS members to see if it was something worth viewing. It is an interactive first course in astronomy with a target audience of high school science teachers to be better prepared to teach the subject. The course also targets high school students with an interest in the subject who do not have an available astronomy course at their school. The course is not taught by PhD astrophysicists, rather by an amateur astronomer with an interest in teaching the subject. The course is quite appropriate for adults with an interest in learning more about a wide range of topics in astronomy. The course is held weekly on Tuesday nights at 7:30 p.m. They usually start with a brief review and any questions from the previous week, then spend about an hour on that evening's topic, and finally end with a question-and-answer period. It is given over Zoom, and all participants are welcome and encouraged to ask questions. The cost of the course is $100 and you can attend as many or as few sessions as you like. The slides for each lesson are provided beforehand and a video is posted a few days after each session. The schedule for the next session is:

Class number	Date	Topics
1	1/14/25	Intro, Geo-centrism, Kepler's laws, the Kepler-Newton law, the scientific method
2	1/21/25	Eclipses, tides, solar system formation, planet tilts & density
3	1/28/25	Rocky & giant planets, moon, escape velocity, planet atmospheres, the greenhouse effect
4	2/4/25	Determining Earth's age, comets, asteroids, distances using parallax
5	2/11/25	Distances using cepheid variable stars; M31 is a galaxy!, sun, fusion, the Hertzsprung-Russel diagram
6	2/18/25	Identifying atoms in stars; star characteristics, luminosity, element creation & supernovae
7	2/25/25	Neutron stars, black holes, pulsars, professional telescopes, building the Extra Large Telescope (39 meters)
8	3/4/25	Radio & space telescopes; Observing the sky: stars, moving groups, Mars, the moons of Saturn & Jupiter
9	3/11/25	Galaxy classification, active galactic nuclei, blackbody & synchrotron radiation, the cosmologic redshift
10	3/18/25	The Hubble-Lemaitre law, dark matter, the cosmologic principle, special relativity
11	3/25/25	General Relativity & its proofs, gravitational waves, the cosmic microwave background radiation
12	4/1/25	Women astronomers, Universe age, size, early years & expansion. Does it have an edge? The Big Bang
13	4/8/25	Fate & density of the U; proportions of normal, dark, and energetic matter; inflation; the 4 forces of nature.
14	4/15/25	Habitable exoplanets, astrobiology, the lifetime of K type stars. Are ETs out there?
15	4/22/25	Are ETs on Earth? #1
16	4/29/25	Are ETs on Earth? #2
17	5/6/25	Highlights of the course & informal discussion

While I don't feel the course is perfect, I don't know of any other comprehensive, interactive courses on Astronomy at this price point. For more information or to sign up go to https://www.astronomyteacher.net/

Books, Books, Books

We have been approached by Princton University Press and offered a 30% discount as members of LVAAS for any of their books on Astronomy. For starters they recommended the following:

- Hidden in the Heavens: How the Kepler Mission's Quest for New Planets Changed How We View Our Own (2024) : click **here**
- The Sky Is for Everyone: Women Astronomers in Their Own Words (2023) : click **here**
- Back to the Moon: The Next Giant Leap for Humankind (2022) : click **here**
- A Traveler's Guide to the Stars (2024) : click **here**
- The Little Book of Exoplanets (2023) : click **here**
- Stars and Planets: The Most Complete Guide to the Stars, Planets, Galaxies, and Solar System – Updated and Expanded Edition (Princeton Field Guides series, 2017) : click **here**
- Welcome to the Universe in 3D: A Visual Tour (2022) : click **here**

If you are interested in purchasing any of these or other Astronomy books contact me at library@lvaas.org and I will send you the discount code. Or if you would like me to consider purchasing any of these titles for the library, let me know.

NEAF Ticket Sales are Open!

The excitement is building for the world's largest astronomy & space expo.

April 5-6, 2025

EXPERIENCE IT TO BELIEVE IT!

Get your tickets today!

https://www.neafexpo.com/

Rockland Community College
Suffern, NY

🌌 **Explore the Universe with the LVAAS 2025 Astronomy Calendar!** 🌌

✨ **A Year of Stunning Skies**
Our 2025 calendar features breathtaking astrophotography from local enthusiasts, highlighting the wonders of the cosmos.

✨ **Perfect for Stargazers**
Stay inspired all year long with beautiful images, key astronomical events, and important event dates like Mega-Meet, the Picnic, and **our Holiday Party.**

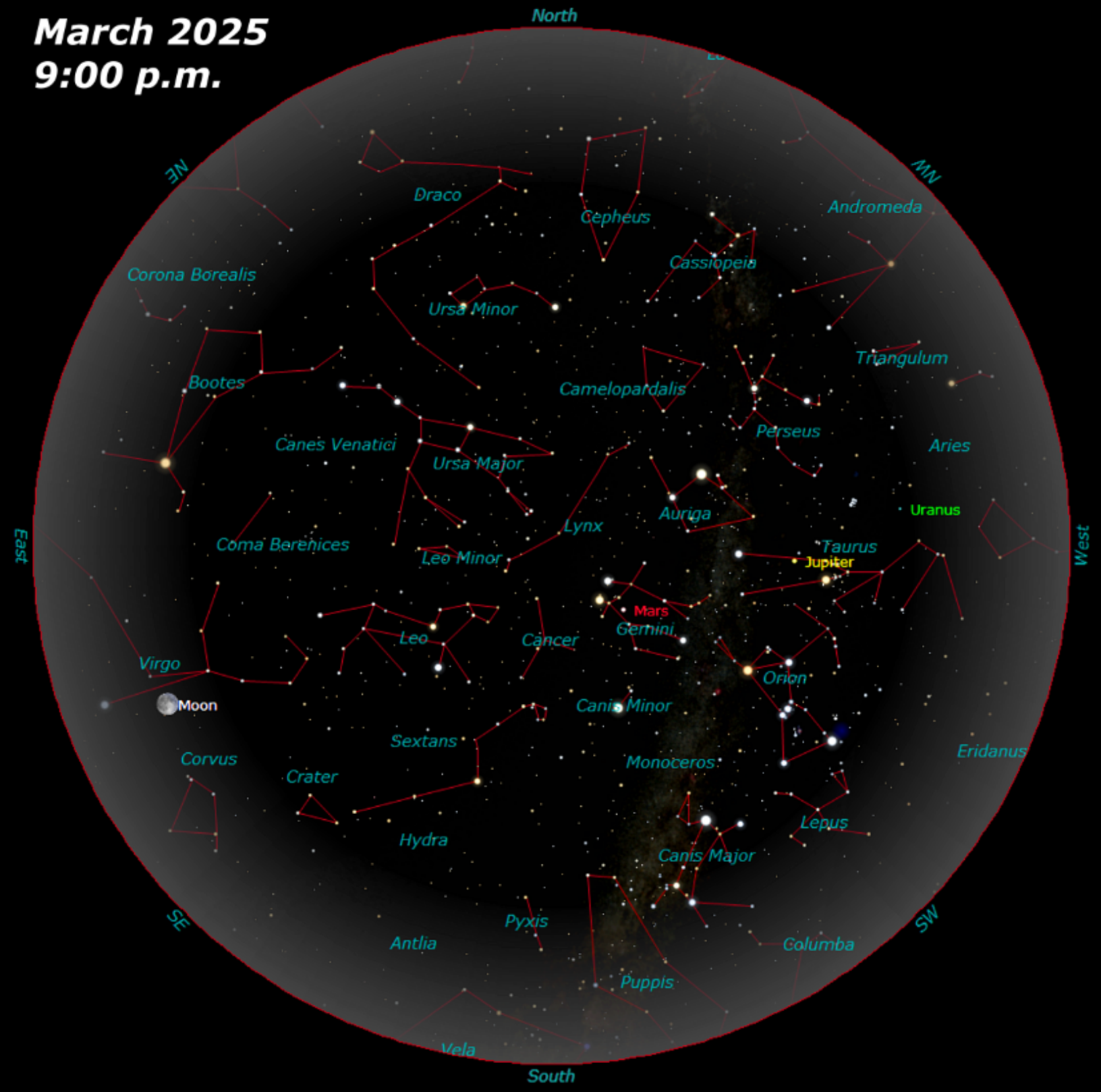
✨ **Support LVAAS**
Proceeds help fund public star parties, educational programs, and community outreach events. Your purchase supports our mission to share the night sky with everyone!

🗓️ **Get a Copy for Yourself, Friends, Family, and Coworkers!**
Purchase your calendar at the RedShift store or by sending an email to m.huber614@gmail.com

Pickup will be either at club events or South Mountain HQ. **Cost is $20.**

Don't forget to order your LVAAS Calendar!

March 2025
9:00 p.m.



This month's StarWatch and a larger Sky Map can be found on Gary's website **here**

Contributed by Gary A. Becker

Sky Above 40°33'58"N 75°26'5"W Saturday Mar 01 2025 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

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

MARCH 2025

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
						01
02	03	04 Marti Gras	05	06 First Quarter Moon	07	08 Star Party
09 Daylight Savings Begins General Meeting 3:00 PM Muhlenberg College	10	11	12	13	14 Full Moon Stargazers Group Meeting	15
16	17	18	19	20 Spring Equinox	21	22 Last Quarter Moon
23 Deadline for submissions to the Observer	24	25	26	27	28	29
30 LVAAS Board of Governors Meeting	31					

APRIL 2025

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

2025 LVAAS EVENT CALENDAR

Contributed by Bill Dahlenburg

2025 LVAAS Event Calendar											
	Sundays				Saturday			Moon Phase			
	General Meeting time/date	location	Board meeting	Astro-Imaging	Star Parties	Stargazers Group	Observer Submission Deadline	New	1st	Full	3rd
January	3:00 PM 12	Muhlenberg	26	no meeting	no meeting	no meeting	19	29	6	13	21
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 9 (10)	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	6/27-6/29
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.

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 .