The Observer

The Official Publication of the Lehigh Valley Amateur Astronomical Society
https://lvaas.org/
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March 2026
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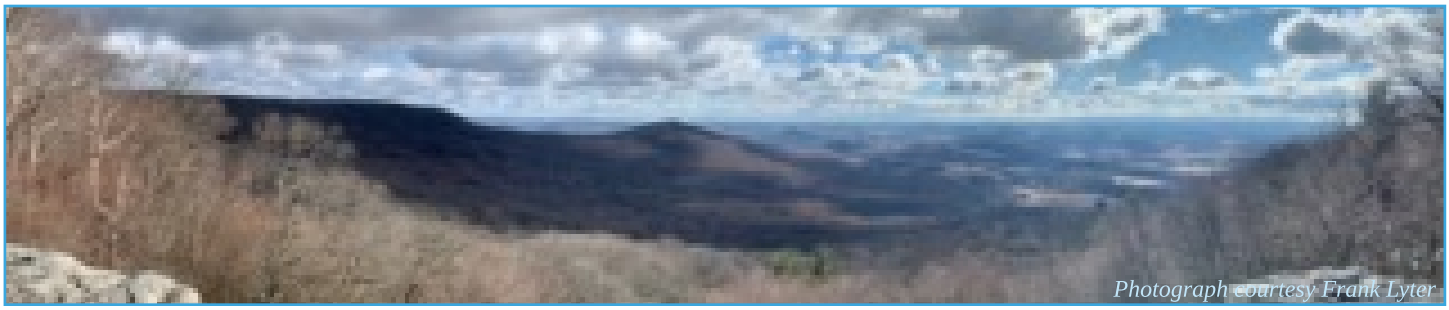


Photograph courtesy Frank Lyter

Via Sandy Mesics, Programs Chairperson

Upcoming LVAAS General Meeting Speakers

March: **Greg Stanos** will speak (via Zoom) on "Journey to a Comet."
April: **Deborah Skrapik** will speak on " Observatories."
May: This speaking opportunity is currently **open**. Ideas welcomed.
June: **Joel Leja** will speak via Zoom on "Little Red Dots".
July: **Craig Rudick**; topic TBA.
August: **Dr. Becky Frank** will speak in person; topic TBA.
Please contact ***astrosandy@gmail.com*** if you have ideas for speakers, or would like to do a presentation yourself.

Via LVAAS: Satellite Proposals are Threatening Astronomy! DarkSky International is asking for your help during the FCC comment period. The deadline for comments is March 6. Please read this article at ***darksky.org*** and send your comments to the FCC to help stop reckless satellite propagation that would change our night sky and nighttime environment, potentially forever. About 15 minutes of your time will hopefully urge the FCC to more carefully study the disastrous consequences of this action.

Via Rich Hogg, LVAAS Membership Director

Please click ***here*** to pay your LVAAS membership dues! The deadline is **03/01/2026**. Our mission is to promote astronomy by making educational programs and resources available to our members and the community. Thanks for supporting LVAAS!

THANK YOU, LVAAS VOLUNTEERS!

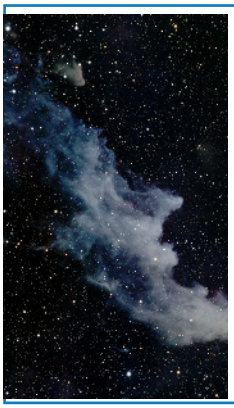
Any member wishing to volunteer, please check the Contacts page of our website and join the ***Buzz email groups*** to learn what projects are being planned. A special Google doc is being created for this purpose and will soon be accessible in the "Members Only" section of our website. Your help is needed, and very much appreciated. LVAAS runs on its volunteers!

Via Aidan Berger, Star Party Coordinator and Kyle Kramm, Stargazers Group Coordinator

Please join us at our SM headquarters: 3/13 for Stargazers, and 3/28 for our monthly star party, weather permitting.

Via Earl Pursell, UACNJ Liason

UACNJ has its own YouTube channel and the schedule of videos is on its website. Check out the list of winter programs ***here***. Please visit ***uacnj.org*** to watch and/or subscribe. In person events are coming soon!



Cover image: **IC 2118 The Witch Head Nebula** ***Imager:*** **Thomas Duff**

Taken: Winter Star Party Jan 31, 2025 to Feb 1, 2025 from Scout Key, Florida. **Mount:** Skywatcher Wave 100i (No Counter Weights). **Scope**: Starfield Gear 80. Refractor **Camera & Guiding**: ZWO 2600MC. **Duo Filters**: None. **Images:** 35x5min. **Processing** - Pixinsight.

IC 2118 is an extremely faint reflection nebula believed to be an ancient supernova remnant or gas cloud illuminated by nearby supergiant star Rigel in the constellation of Orion. The nebula lies in the Eridanus Constellation, about 900 light-years from Earth. The nature of the dust particles, reflecting blue light better than red, is a factor in giving the Witch Head its blue color. Radio observations show substantial carbon monoxide emission throughout parts of IC 2118, an indicator of the presence of molecular clouds and star formation in the nebula. In fact candidates for pre-main sequence stars and some classic T Tauri stars have been found deep within the nebula.

LVAAS General Meeting Public Welcome!

Sunday March 8, 2026 3 p.m. at Muhlenberg College

Trumbower Science Building ***map***

2400 Chew St., Allentown, PA 18104

Journey to a Comet

featuring

Greg Shanos

Greg's interest in astronomy began back in 1985 when he witnessed the apparition of Halley's Comet. Currently the internet is ablaze with the recent passage of interstellar Comet 3I/ATLAS, raising awareness for the general public. Greg will discuss the composition of comets, the six spacecraft that have visited various comets, with a focus on organic molecules that have been discovered.

Greg earned a double baccalaureate in both Pharmacy and Chemistry from the University of Rhode Island in 1984, a Master of Arts in Teaching from Rhode Island College in 1989, and a Doctor of Pharmacy degree from the University of Florida in 1999. In 1990 Greg married and relocated to Sarasota, Florida where he currently resides.

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

Minutes from the LVAAS General Meeting of February 1, 2026

The February 2026 LVAAS general meeting was conducted electronically using an online service and at Muhlenberg College's Trumbower Science Building. Approximately 64 people were in attendance. Director Benjamin Long opened the meeting at 2:58 p.m.

Tonight's presentation was an update on Jupiter's moon Europa, and NASA's Europa Clipper Mission by Dr. Bruce Ruggeri, NASA Solar System Ambassador. We began with what life is, how we define it, and where we are looking for it. From Mars to Titan and Enceladus we are following the water to see if there is other life in our Solar System. This brings us to Europa, and the Europa Clipper Mission. Europa sits in the Goldilocks zone around Jupiter and is very old, giving us the best hope for life. It has a magnetic field thanks to the interaction between its oceans and Jupiter's gravity. It is very geologically active, with an ocean 40-60 miles deep. In fact, it has more than twice the amount of water than Earth, despite being slightly smaller than our moon.

The Europa Clipper mission was launched in October 2024, and will arrive at Jupiter around 2030. About the size of a basketball court, the probe is equipped with multiple machines to collect data, assess Europa for habitability (not necessarily looking for life, but hey if it's found, great!) and to gather data for a landing site for other missions. There's a lot of amazing technology on board, including the ability to 'heal' and amazing capabilities in data compression so we can see much without error. Over a course of 3.5 years, it will make 49 flybys of Europa, sending data between each dive.

Finally, we have a little mission in a bottle planned in case the probe is found by another space faring lifeform, including a poem about Europa, as well as a million and a half names. The results of this mission will be very exciting in the coming years! The presentation was followed by a short break.

Membership: Rich Hogg

The following members completed their second readings and are now full members: **Mahbub Rahman,** and **Zeke White** (pending payment of dues).

No members completed first readings during this meeting.

The following members have previously completed a first reading and are still eligible to complete a second reading to become full members: **Shivaraman Asoda**, **Patrick Engel** (family membership with **Stacie Engel**), **Hossam Hanno, Andrew Howell, Kyle Levin** (family membership with **Kaira Fletcher**), **Barry Navarre Jr.,** and **Leah Strasser.**

General Comments:

Aidan Berger is the recipient of this year's LVAAS Youth Scholarship Award. He is looking to replace the 8" refractor in the Kawacki Observatory with a 20" Newtonian refractor which will be completely remote. This will modernize the Kawecki building, as well as open up accessibility, increase outreach, and eventually give us a head start on the 40" project.

Tom Duff: Join us starting next month for Astroimaging. Check the website calendar. There will be a summer Astronomy course at Cedar Crest College, if anyone would like to attend.

Kyle Kramm: The Redshift store is coming out with new clothing. Please look for an email this coming week!
Stargazers will be back in March.

Bill Dahlenburg: There is only one lane open at our South Mountain headquarters location at the moment due to deep and frozen snow. Please observe caution.

Frank Lyter: We're unable to access our Pulpit Rock site due to snow; we/re hoping to get back up there in March.

Check out our Google doc to see all the things you can help with at this observatory!
If you are interested in helping with the meteor cameras, come talk to me.
The gate is now passcode only. See me for a pass code.

Next General Meeting:

March 8 at 3 p.m. at Muhlenberg College's Trumbower Science Building.

The meeting was adjourned at approximately 5:20 p.m.

The February general meeting was recorded.

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Submitted by Dr. Becky Frank, Secretary

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

2026 First Annual LVAAS Youth Sponsorship Program

On behalf of **Astronomy in the Community**, in collaboration with the **Lehigh Valley Amateur Astronomical Society,** I am proud to announce the recipient of our first annual **2026 LVAAS Youth Sponsorship Program**.

Please join me in congratulating **Aidan Berger**, a 20-year-old **LVAAS member, Star Party Coordinator, Assistant Director of PR Observatories**, and an **Engineering Design student** at the **Pennsylvania College of Technology in Williamsport, PA**, whose proposal to design and construct a fully remote **20-inch Newtonian astrograph** at the **Kawecki Observatory** at **Pulpit Rock** has been selected for this year's award.

Aidan's project will create **LVAAS's first fully remote observatory**, allowing members to operate a research-grade telescope for imaging and observation from anywhere. The system will expand opportunities for members who live far from Pulpit Rock and open new doors for public outreach, classrooms, and live astrophotography demonstrations.
The Youth Sponsorship Program provides an initial **$1,000 grant** to help launch ambitious, youth-led astronomy projects like this one. With an estimated total cost of **$8,000–$13,000,** we are now inviting the broader **LVAAS community to help bring the observatory to life.**

If you would like to support the **20" Newtonian Astrograph Fund**, donations can be made here: **https://gofund.me/ae0e586bd** or by scanning the **QR code below.**

This program grew directly out of the generosity of our LVAAS community.

In 2023, my brother, **Claudio T. Stabile**, reached out to LVAAS to support his **Eagle Scout Project** of building an **astronomy observatory** at the **Polk Township North Field**. With support from **LVAAS,** the **Charlie Bates Solar Astronomy Project (CBSAP),** the **Joe Sommer Foundation**, the **Adam Martin Jablonski Foundation**, and contributions from **our community**, his project went live in August 2023, and **Astronomy in the Community** was born.

In 2024, I followed that path through my **Girl Scout Gold Award project**, creating a **free microscope and telescope lending program** at the **Western Pocono Community Library** with the help of **CBSAP**, **Celestron**, **Rutgers University**, the **Adam Martin Jablonski Foundation,** a **non-monetary LVAAS sponsorship,**and the generosity from our **LVAAS membership.**

Now, in **2026**, **Aidan** carries that tradition forward.

I hope you'll join me in **congratulating Aidan** and, if you're able, **supporting his project** so we can make this observatory a reality for the **entire LVAAS community**!

Ava Stabile
Youth Program Coordinator
Astronomy in the Community
LVAAS Family Member

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

Please Contribute to Aidan's 20" Fully Remote Newtonian Astrograph Project in the Kawecki Observatory at Pulpit Rock!

Photograph the QR Code or Click

https://gofund.me/ae0e586bd

20" Remote Observatory at Pulpit Rock

Visit ***lvaas.org*** to view Aidan's full presentation

My proposal is the addition of a new telescope to the LVAAS Fleet. a 20" Imaging Newtonian that will be fully remote controlled

Astronomy in the Community's Youth Program Coordinator Ava Stabile presents winner Aidan Berger with his award: $1,000! Aidan is donating his prize to be used for this wonderful and worthy project. Thank you Aidan and Ava!

Vision for the 20" Remote Observatory

The 20" Remote Observatory aims to inspire youth by providing hands-on experience in astronomy and astrophotography. This observatory will serve as a valuable educational tool, fostering curiosity and engagement within the community, while also promoting STEM learning opportunities.

The current scope in the Kawecki Observatory is old, outdated, and underused. My proposal would convert the observatory to be fully remote and replace the 8" refractor with the 20" Newtonian Reflector used primarialy for astrophotography.

RED SHIFT NEWS!

EVERYTHING WILL BE BLUE

Exciting news! We are restocking the Red Shift concession with new clothing! As we are doing so, we are happy to offer a discount to pre-orders so that we can get a good idea of how much to stock, and so that you can make sure you get the size you want! We have 5 items we will be purchasing: please note that all items will be dark blue, and the pictures in the form are simply the ones from the supplier. The LVAAS logo will be on the left side of the chest for t-shirts, polos and hoodies. There is a small cash increase on sizes larger than XL, which are noted in the form. Please reply by March 10TH

These items are priced as follows:

1) T-shirts (Screen Printed): $18.00
2) Polo Shirts (Embroidered, regular or fitted): $25.00
3) Zipper Hoodies (Embroidered): $45.00
4) Hats: $20.00 5) Beanies: $15.00

There is also a cash/check discount when you pay by those methods- see each item in the form for that discount.

To order, please fill out the form https://forms.gle/uQbnCibbEnM8vseN7

We will also have a paper form available at the next general meeting.

Pick-ups will be at South Mountain, as we do not intend to ship anything. Please reach out to Dr. Becky (becky.frank@lvaas.org) or Kyle Kramm (kman10274@gmail.com) if you have any questions,

We look forward to making this fundraiser a success with your help, and for everyone to rock their new LVAAS gear

Peter Detterline's
Night Sky Notebook
for
March 2026

Please remember to like and subscribe!

Programs, Programs, Programs

by Sandy Mesics

Eighty years ago, The Lehigh Valley Astronomical Society (LVAS) was being re-energized after a hiatus during World War II. Prior to the war, meetings were held at the home of L.H. Cutten in West Allentown. Beginning in March 1946, a decision was made to rotate the meeting site. Whoever hosted the meeting was responsible for presenting a program. The March 1946 meeting was held at the home of LVAS Secretary Eugene Carl. His presentation was on "The Interior of Mother Earth," and as a bonus, viewing of an 8-mm film of the March 1944 eruption of Mount Vesuvius. When this event occurred, it damaged some of the equipment of the United States Army Air Force 340th Bombardment Group. Reportedly, the film was well-received by the eight attendees.


LVAS BULLETIN

March 1946

LVAS MEMBERS IN SERVICE

Sgt. Lionel F. Adda

Mid'n Wallace Knotz, Jr.

AT OUR MARCH MEETING! SEE THE MOST RECENT "ERUPTION OF MT. VESUVIUS"

A MOTION PICTURE TAKEN ON THE SPOT!

Meeting Notice!

ROTATION MEETINGS TO BEGIN IN MARCH. NEW PLAN WILL AID INTEREST IN OUR PROGRAM.

At the meeting the members began planning their first open house event since before the war. This annual event was a star party at Cutten's home that was very successful and generally had large attendance.

Fast forward to March 1976 and one is struck by LVAAS's educational outreach to members. Neophyte members would benefit from the "Popular Astronomy Class" a members-only series of presentations, planetarium programs and observing sessions. More advanced members could participate in the monthly "Astronomy Study Group (ASG)" meetings. In March 1976, the ASG discussed Kepler's three laws of planetary motion, and "the third law's algebraic derivation according to the work of Isaac Newton." Young members could participate in the Ursa Major Astronomical Society, the "junior" arm of LVAAS. In March 1976 these young folks had a program on the nature of light and the spectra of celestial objects. The general meeting that month featured John Loomis, who was then the director of the Kutztown State College planetarium. He spoke on current trends in astronomy education, with emphasis on the controversial topics espoused by Immanuel Velikovsky and Erich Von Däniken, as well as UFOs and astrology. There was something for everyone!

References

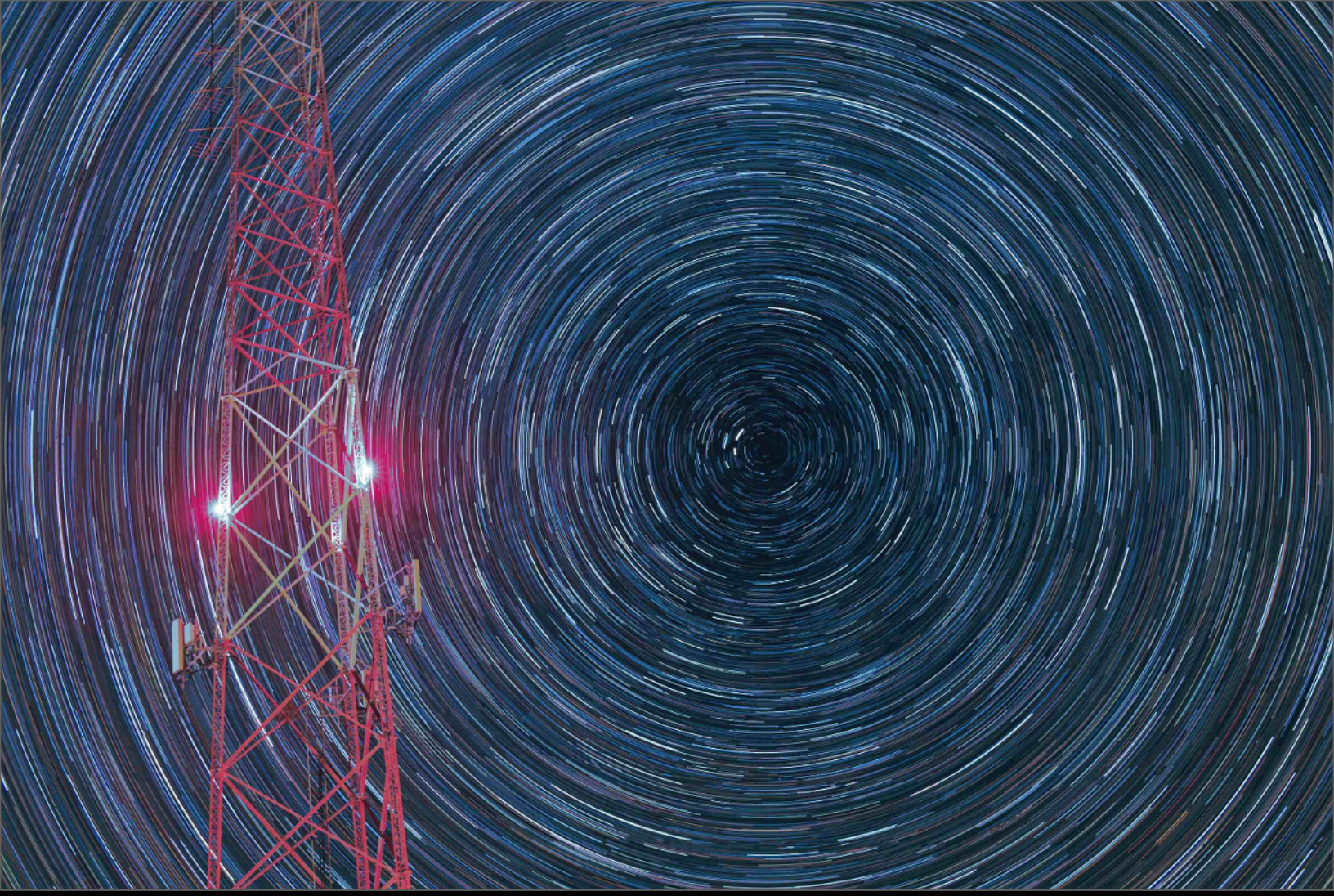
LVAS *Bulletin*, March 1946

LVAAS *Observer*, March 1976.

NGC281 Pacman Nebula Imager-Thomas Duff

Camera: ASI533 OSC - 60x3m - (3hr)
Telescope: Starfield Gear 80
Filter: Chroma Low Glow LPR
Mount: Skywatcher Wave 100i
Location: Lehigh Valley Amateur **Astronomical Society HQ**
South Mountain, Allentown, PA

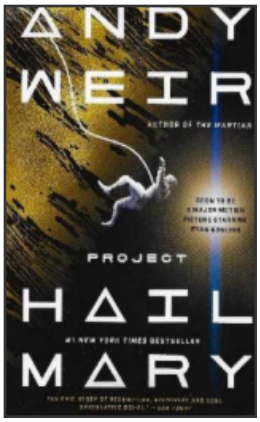
NGC 281, IC 11 or Sh2-184 is a bright emission nebula and part of an H II region in the northern constellation of Cassiopeia. It is part of the Milky Way's Perseus Spiral Arm. This 20×30 arcmin sized nebulosity is also associated with open cluster IC 1590, several Bok globules and the multiple star, B 1. It collectively forms Sh2-184, spanning over a larger area of 40 arcmin.



Winter Star Trails Imager - Dan Stern

Dan captured this image from the Florida Keys during the recent **Winter Star Party**; info ***here***

Stats: 400 20-second exposures. Canon R5 70-200mm lens at 70mm; intervalometer set to zero.



From The Library - Joe Zitarelli

"An engaging space odyssey" – *The New York Times*

I first read *Project Hail Mary* in the Summer of 2024 on the recommendation of someone at work. She thought I would like it. What did she know? So finally, that July at the annual family odyssey to Ocean City, NJ I decided to read the book. Once I picked it up, I couldn't put it down. I was going to write a review for The Observer but something else came up and I never did write that review. The author, Andy Weir, was a software engineer who is a self-described hobbyist of subjects such as relativistic physics, orbital mechanics and the history of manned spaceflight. Obviously, his first book, *The Martian*, did very well and was made into a movie. This allowed him to become a full-time writer. I didn't read either *The Martian* or his second book *Artemis*. I saw the movie *The Martian* and enjoyed it immensely. Now the movie *Project Hail Mary* is coming to movie theaters on March 20 2026 starring Ryan Gosling. There was a discussion on the Astroimaging board, and I can report that I am not the only LVAAS member looking forward to this movie. This prompted me to re-read the book and complete this much overdue book review.

This book is pure science fiction. But it includes a lot of physics presented in an easy-to-understand manner. For example, if you found yourself in a closed room without windows, would you know how to measure the gravity? In the book, our hero uses two different techniques and gets the same answer twice. But the answer doesn't make sense, as it is higher than on the surface of the earth. But General Relativity says there is an equivalence between the force of gravity and the force felt with acceleration. So, must the room be accelerating? Or is it decelerating? But that is science, not science fiction. Without giving away too much of the plot, I will tell you that the other lead character in the book is named Rocky. But he's not from South Philly. He's from another planet, in another solar system. Now that's science fiction.

The book is written in two different time frames with the setting going back and forth within the same chapter. The two settings are about 8 light years apart. I found this easy to follow and a good way to tell the story. The principal character must deduce how much time has elapsed, both for where he is and how that relates to time back on earth. Remember, time is relative. And just when our hero has figured out where he is and his purpose is to save his home planet, he meets Rocky who is in the same place with the same purpose, but a very different home planet. I won't give away any more of the story in the book. I am anxious to see if the movie follows the same format as the book. I also have this vivid picture of Rocky in my mind and I can't wait to see how he looks in the movie. I haven't been this excited to see a movie based on a book since the first Harry Potter movie.

This book is easy to read. I found the science lessons in it enjoyable, and you don't need a science background to understand what he is saying. The plot was well developed. If you sit back and think, we as earthlings could find ourselves in this situation. Would all the world be able to come together like in this book? Would politics screw up everything? Don't worry, there is no politics in this book. Reading this book is a good way to get away from politics. In short, I highly recommend this book, and if you don't have much to do in the next couple of weeks, I suggest you read the book before seeing the movie. I also look forward to Andy Weir's next book.

On another note related to books, this is a warning: Beware of self-published books on Amazon. I have been looking for a good book on consciousness. I came across one that claimed that consciousness is the fundamental principle of existence, and the author has 27 peer-reviewed articles on topics in astrophysics. Within 15 pages I found the book unreadable and so poorly written I couldn't go on. When I looked for the publisher, there was none, and the book had a "printed date" that coincided with my purchase date. I looked up the author and found his articles were "published" in online journals where you pay to have the articles "published." Total nonsense.

Amazon gave me my money back and then sent me another recommendation that at first sounded good, but when I looked up the publisher, the author owned the company that had "published" his 12 books only. So, I put out a warning to everyone to be careful of self-published "science" books on Amazon. They may not be worth the paper they are printed on. With a legitimate publisher, at least someone with credibility thought it was worth publishing.

StarWatch

A Sunrise Total Lunar Eclipse, Tuesday

If I had to pick a favorite astronomical event, it would be a total solar eclipse. Nothing can be more spectacular than the effects on the ground or ocean and in the sky that accompany the sun's diminution as the moon devours the last thin sliver of its light. The world is plunged into darkness with the sun's radiant corona surrounding the moon. Minutes pass like seconds. * A total solar eclipse can never be long enough. I think part of the added mystique arises from the anticipation of the event—the preparation, the site selection, the travel to the centerline, outsmarting the weather, and a host of other factors that lead up to the moment of totality. Success is sweet. Failure is not an option. * Not as spectacular is a total lunar eclipse, when the full moon encounters and passes completely through the shadow of the Earth. Total lunar eclipses are actually less common than central solar eclipses that include a ring of sunlight surrounding a too small (distant) moon or a total eclipse, the far more spectacular of the two. The Earth presents a larger target to the moon's shadow than the Earth's shadow presents to the moon. The target for the moon's shadow to encounter the Earth for a total solar or annular eclipse is nearly 8000 miles in diameter, but the shadow of the Earth at the moon's distance is about 5700 miles. What is easier to hit, a bullseye of 8000 miles in breadth or one that is only 5700 miles in diameter? The answer is obvious. * So why will most individuals believe that total lunar eclipses are more common than central solar eclipses? The moon's primary shadow cone narrows on average to about 80 miles before reaching the Earth's surface, so unless your geographic location is extremely lucky, you'll need to travel to see a central solar eclipse. However during a total lunar eclipse, anyone who can observe the moon can see the eclipse. Earth's nighttime hemisphere acts like a giant open-air stadium where everyone gets the chance to witness the celestial ballet if the weather cooperates. In addition, some regions of the planet rotate into the eclipse, while other areas move away from the show; so in essence, people living on more than half of the globe get a chance to see the event. * The Northeast is in such a geographic situation because **a substantial portion of the lunar eclipse that happens on the morning of March 3 takes place during twilight and after moonset as our location rotates away from the event**. The moon sets totally eclipsed, but regions west of us, particularly along the West Coast, get to view the entire event. The eclipse becomes total when the moon is only four degrees above our western horizon at 6:04 a.m., 28 minutes before sunrise. So we rotate eastward away from the eclipse as the moon sets in the west at 6:34 a.m. * I saw a very similar total lunar sunrise eclipse on the morning of August 28, 2007. Hundreds of silent people surrounded me in the cemetery where I was imaging the moon. Near Luna, one cloud was reflecting the first rays of reddened sunlight, as the moon approached its setting position against the treetops of my local horizon. See my photograph here. * On eclipse morning, I'm hoping for high reddened cirrus clouds that could be in sunlight five or ten minutes before moonset, but not be thick enough to obscure the moon. That could create a memorable image. Here are the particulars of the March 3 total lunar eclipse. All times are Eastern Standard.

Moon enters penumbra: 3:44 a.m. The moon is tangent to the secondary shadow of Earth, essentially a non-event.

Dusky effects of penumbral shadow easily seen: 4:15 a.m.

Moon enters umbra: 4:50 a.m. The moon enters Earth's primary shadow. The partial eclipse is underway.

Twilight easily noted, Nautical Twilight: 5:30 a.m.

Stars are gone, Civil Twilight: 6:04 a.m.

Eclipse becomes total: 6:04 a.m.

Sunrise: 6:32 a.m.

Moonset: 6:34 a.m.

Use binoculars to enhance your views of this eclipse, and get ready to be a zombie for the rest of the day. I know that is how I will be. Have fun! Ad Astra!

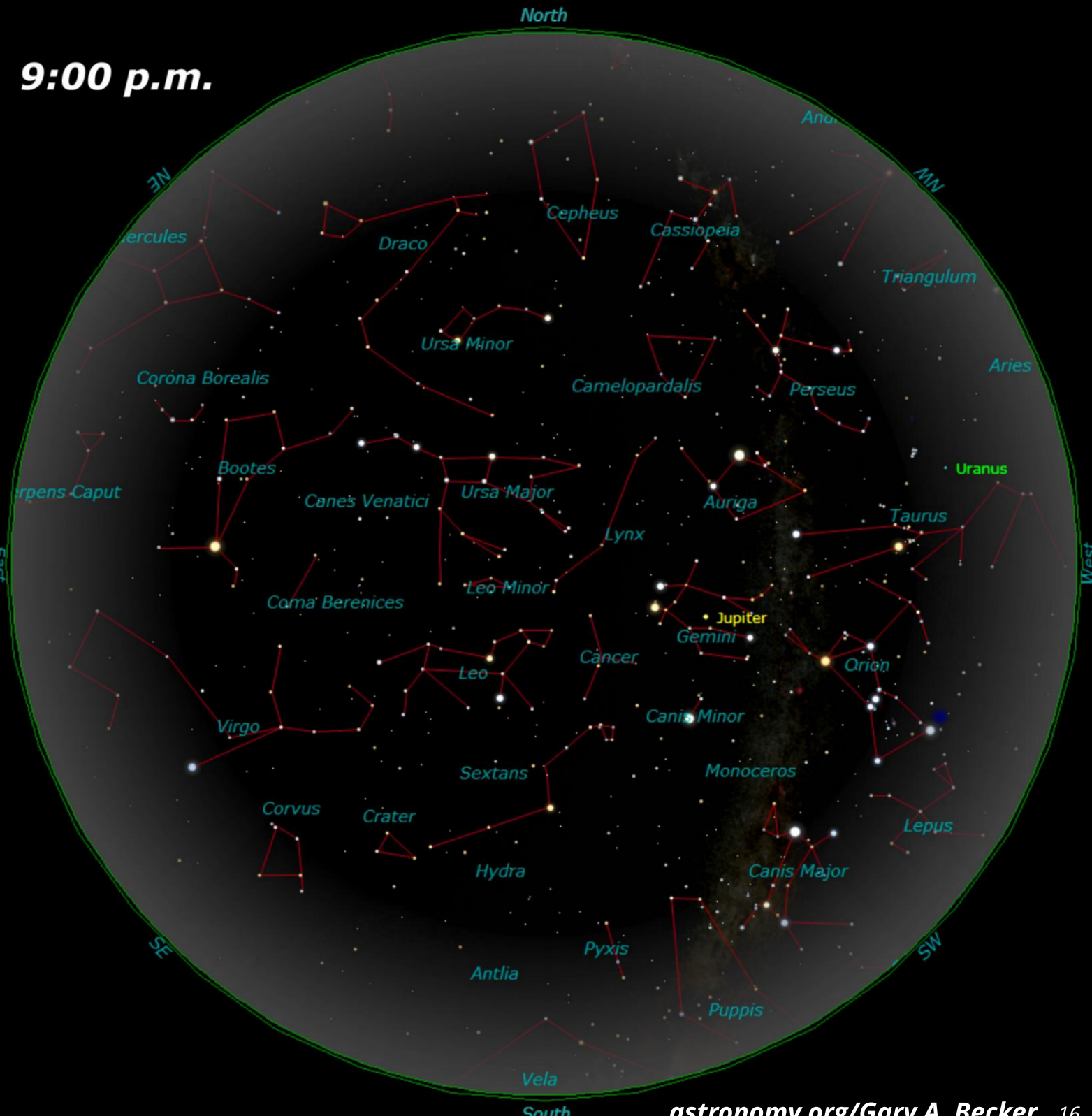
©Gary A. Becker -- beckerg@moravian.edu or garyabecker@gmail.com
Moravian University Astronomy - astronomy.org

Join

March 2026

Full Moon	Last Quarter	New Moon	First Quarter	Full Moon	Last Quarter
Mar. 3/06:37	Mar. 11/05:38	Mar. 18/21:23	Mar. 25/15:17	Apr. 1/22:11	Apr. 10/00:51

9:00 p.m.



MARCH 2026

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

APRIL 2026

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

LVAAS EVENT CALENDAR 2026

Contributed by Bill Dahlenburg

	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 11	Muhlenberg	25	no meeting	no meeting	no meeting	25	18	26	3	10
February	3:00 PM 1	Muhlenberg	22	no meeting	no meeting	no meeting	22	19	24	1	9
March	3:00 PM 8	Muhlenberg	29	no meeting	28	13	29	19	25	3	11
April	7:00 PM 12	S.M.	26	18	25	10	26	17	24	2	10
May	7:00 PM 3	S.M.	31	9	23	8	31	16	23	1 31	9
June	7:00 PM 14	S.M.	28	6	20	12	28	15	22	29	8
July	5:00 PM 11	S.M.	26	25	18	10	26	14	21	29	7
August	7:00 PM 8	Pulpit	30	8	22	14	30	12	20	28	5
September	7:00 PM 13	S.M.	27	5	19	11	27	11	18	26	4
October	7:00 PM 11	S.M.	25	3	17	9	25	10	18	26	3
November	7:00 PM 8	S.M.	29	7	14	13	29	9	17	24	1
December	2:00 PM 13	?	27	5	no meeting	no meeting	27	9	17	24	1 31

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	**4/11-4/12**
Mega Meet	
Stellafane	**8/13-8/15**

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.

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Astroimaging Director, Tom Duff is the *Observer's* 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, text and contact information, by the submissions deadline, which is listed on our website calendar. Every attempt will be made to include submissions in a timely manner.

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