

# The Observer

The Official Publication of the Lehigh Valley Amateur Astronomical Society

<https://lvaas.org/>

<https://www.facebook.com/lvaas.astro>

March 2023

Volume 63 Issue 03





Firstly, I would like to announce an exciting development with the club. [Astrospheric](#) is an application that displays multiple weather models and information useful in astronomy. There are free and paid subscriptions for users. LVAAS is on the services as a “SubSpace” group. All members are invited to sign up for this service and join the LVAAS SubSpace group. Thanks to Jackie Olexa for starting this!

Upcoming club events: March 12 is the next General meeting and it will be held at Muhlenberg College. Rozanne Kamin will be speaking in-person and on Zoom (but not recorded) on "Catching a Shadow from 12 Million Miles Away and Measuring Pluto's Atmosphere. Wait a minute - Pluto has an atmosphere??" Our next Star Party will be on March 25th.

Our club has several outreach events coming up or currently being planned, and we could use your help! If you have time to spare to do a presentation, run a telescope, do a talk, or help out in any number of other ways, please reach out to us. We are also looking for people interested in giving planetarium shows. If you are interested in science education, theater, or showmanship please contact Earl Pursell.

Some other updates: the Amazon Smile program has officially come to an end. This program was a way that users could shop on Amazon and support their chosen non-profit at the same time without any cost to them. Earlier this year Amazon announced their plan to shut down this program in favor of other philanthropic efforts they have. The Amazon Smile links have been removed from our website. Thank you, Sandy Mesics and Rich Hogg, for being on top of that!

You may have noticed how many different folks I am thanking, and that’s just the tip of the iceberg. The fact is, running our club requires the time and energy of many different people who work behind the scenes. We have many talented, hardworking leaders who dedicate their time to keep the club running, contribute to public outreach and education and adding value to our membership, just to name



a few. If you would like to join a team, visit the Contacts page of our website [lvaas.org](http://lvaas.org), check and see if there is a committee you would like to join or a vacant leadership position you feel might be a good fit. When you find something, let me or that director know of your interest!

The LVAAS Book Club will be reading “Sun, Moon, Earth.” Contact Blaine Easterwood to join.

LVAAS will be donating a 60mm Meade refractor to the Da Vinci Science Center as part of our partnership with them. A big thanks to Blaine Easterwood, Mike Clark, Bill Dahlenburg, Earl Pursell, and Pete Brooks for their help!

A gentle reminder to adhere to proper start-up and shut-down procedures for the observatories. Taking proper care of the club’s equipment and assets ensures all members can continue to enjoy them. If you would like a refresher feel free to contact Mike Clark, Ron Kunkel, Bill Dahlenburg, or Earl Pursell. Also, documentation on how to properly start-up and shut-down a particular observatory can be found in that observatory.

The corrector plate on the 14” telescope at South Mountain has been cleaned, just in time for galaxy season coming up! Also be sure to check out Jupiter before it gets too low and you have to wait until next year, and especially Mars, as it will not be back for another 2 years!

The Warden Observatory at South Mountain has been taken out of service so the mirrors can be recoated. There is a sign stating as much on the outside. Thanks to Mike Clark for doing those!

NEAF tickets are still available if you are thinking about attending. NEAF stands for North East Astronomy Forum and is a fantastic event with lots of vendors, workshops, talks, and hands-on activities. Overnight accommodations are getting harder to come by with each day, so act soon!

### Upcoming Celestial Events for March

March 7 - Full Worm Moon

March 9 - Zodiacal light after dusk. The Zodiacal light occurs when sunlight scatters off countless small particles of material that populate the plane of our solar system. Do not confuse it with the narrower belt of the Milky Way, which will stretch upwards from the northwestern horizon.

March 11 - Ceres will be within 5 arcminutes of M91 galaxy. Imagers beware! Or capture it anyway. Do not forget to annotate and share!

March 12 - Daylight Savings Time begins. Set clocks an hour forward, and cry a little inside that sunset will be an hour later until November.

March 20 - Spring Equinox

March 21 - Ceres at opposition, new moon.

March 22 - Jupiter will be less than 1 degree from the edge of the moon at sunset. It will only be up for about an hour after sunset so act fast!

March 23 - 29 - Ceres will be close to M100 galaxy, and will brush against the edge of the galaxy on March 26th. Imagers beware! Or not, and take pictures anyway, just do not forget to share! A picture of what this might look like is here:



March 31 - Mercury and Venus will both be visible after sunset.

In recent news, astronomers have discovered a stream of newly formed stars in a straight line trailing away from a distant galaxy. It is believed this may be evidence of a runaway supermassive black hole that could have been ejected from that galaxy during a merger. The gravitational influence of the escaping black hole is a possible explanation for collapsing the nearby gas and dust that would normally be too diffuse outside a galaxy to form stars. For more information you can read the paper here: <https://arxiv.org/pdf/2302.04888.pdf>

On March 3rd, 1915 the U.S. formed the National Advisory Council for Aeronautics (NACA) to study the science of flight. In 1958 it became NASA. On March 3rd, 1959, the U.S. finally succeeded in sending the unmanned Pioneer 4 probe to within 60,350 km (37,500 miles) of the moon, after 3 failed attempts.

Ad Astra!

Mike Huber



## **Minutes from the LVAAS General Meeting – February 5, 2023**

The February 2023 LVAAS General Meeting was conducted electronically using an on-line service and in Room 130 of the Trumbower Science Building at Muhlenberg College. Approximately 60 people were in attendance.

Assistant Director Sandy Mesics opened the meeting at 3:05 p.m.

Sandy Mesics introduced the speaker for this afternoon, Gary DeLeo, Ph.D., Emeritus Professor of Physics at Lehigh University. The title of his presentation was A History of Lunar Observation and Exploration. He received his Ph.D. from the University of Connecticut with a specialty in Theoretical Solid-state Physics. During his 40 years on the faculty at Lehigh University Gary served as Associate Dean in the College of Arts and Sciences, and as Chair and Associate Chair of the Department of Physics. Gary retired at the end of 2019.

The oldest naked eye map of the moon is attributed to William Gilbert, 1600-1603. Galileo did the first drawings through a telescope of the moon in 1610. The first telescopic photos of the moon are attributed to John W. Draper in 1840. It wasn't until the 1960s that it was determined the moon's craters were the result of impacts, rather than being volcanic. The initial exploration of the moon was robotic with the first images of the far side of the moon in 1959. In 1964 we had the first close up images of the lunar surface. In 1966 we saw both the first lunar orbiter that transmitted images back to earth, and the first US soft landing on the moon with Surveyor 5.

Preparation for human exploration began with the Gemini missions to test: long duration of humans in space, extra-vehicular activity and the rendezvous of modules in space. The Apollo Mission saw the development of separate Command Modules, Service Modules and Lunar Modules. There were six successful manned missions to the Moon. This allowed for the determination that Mare were lava flows from 3.5 billion years ago. In addition it was determined that micrometeor erosion led to the smooth surface on the Moon. They were able to sample Genesis Rock, a pristine example of non-eroded rock. It was also determined that while there did not appear to be water on the surface of the Moon, there may be water within the rock.

The Artemis 1 Moon Mission is rated to carry a human back to the moon.

There was a break starting at 4:20 p.m. Sandy Mesics called the Informational Meeting to Order at 4:30 p.m.

### Membership: Rich Hogg

- The following members completed their Second Readings and are now Full Members:  
Andy Matzelle (family membership with spouse Kathy)  
Art Lukoff  
Loretta Nemchik  
Paul Tracy
- The following members completed their First Readings:  
Jesse Bhagat  
Haroon Dasti  
Andrew Matzelle Jr.  
Linda Prince  
Michael Vila
- The following members have previously completed a First Reading and are still eligible to complete a Second Reading to become full members:  
Aimee Frasier (family membership with spouse Marcus and 3 children)  
Pravin Chunduru and Deepthi Kallakuri (family membership)

### Astroimaging: Tom Duff

- We are on Winter break until our next meeting on April 22. Any new members interested in Astroimaging are encouraged to let Tom know.
- If interested in Astroimaging you are encouraged to join the Buzz Email list. Information is on the website at: [lvaas.org](http://lvaas.org)

### Education: Blaine Easterwood

- LVAAS Book Club Revitalized! We will start with Sun, Moon, Earth, by Tyler Nordgren. This is a great book filled with all kinds of fascinating tidbits and background information. The planned format will be that interested members will read the book, then we will meet to discuss for an hour or so with a Slack channel for ad-hoc discussions. Check the Observer for further information that will be coming.
- Space Science Series for High School Students: An online series funded by the NSF about cosmology geared to HS students. Juliet Crowell, University of Chicago, who runs the CMB series writes:  
Are you fascinated by space? Are you curious about the origins of the Universe or the evolution of galaxies? The CMB-S4 collaboration, a worldwide scientific organization of professional astronomers and astrophysicists invites you to join us for the Saturday Space Science Series! This virtual lecture series for high school students will explore the Big Bang, dark matter, dark energy, the expansion of the Universe, and more. You will learn about current astronomy

research and careers in astrophysics and cosmology. Students who attend all four Saturdays will receive a certificate of participation.

Dates: April 8,15,22, and 29, 2023

Times: 10:00 am – 12:30 pm (central time zone)

Register at: <https://forms.gle/pywY4aNwvnFfaazF6>

More information will be in The Observer

#### Library: Dave Raker

- The Library will be open at the next Star Party on March 25.
- There is a DVD of each of the General Meeting presentations available to check out.

#### UACNJ Representative - Earl Pursell

- There are Calendars for 2023 available for \$16. Contact Earl if interested.
- They continue with their winter schedule - one online talk, "What's Up In This Month's Sky" on the first Saturday of each month.

#### Planetarium – Earl Pursell

- He is looking for members interested in giving a Planetarium show. He will train you on how to run the planetarium. There are scripts from the past and books in the library to assist you in preparation.

#### South Mountain Maintenance – Bill Dahlenburg

- There are members available most Saturday mornings for tours of the facilities, training on the telescopes, keys and rentals. Please contact Bill to confirm that someone will be there before you go.

#### Star Party Coordinator – Bill Dahlenburg

- Still looking for help with the star parties. Our first star party is scheduled for March 25th.

#### Pulpit Rock Maintenance – Ron Kunkel

- Anyone interested in visiting the site, getting trained on the telescopes or getting keys should contact Ron. His contact information is on the website.



### Publications: The Observer – Frances Kopy

- The Newsletter includes the Night Sky Notebook by Peter Detterline, Star Watch by Gary Becker and LVAAS History by Sandy Mesics.
- All members are welcome and encouraged to contribute an article or images to The Observer. France's contact information is on the website.

### DIRECTOR'S COMMENTS – Michael Huber

- Mike thanked Sandy for handling the meeting in his absence.

### General Comments: Sandy Mesics

- The first NEAF Expo since the pandemic is coming up on April 15 & 16. It will probably be well attended and usually about a dozen Society members attend. For more information you can go to: [www.neafexpo.com](http://www.neafexpo.com)
- There are still open Board positions: Star Party Coordinator, Development and Light Pollution Abatement. Contact Mike Huber if you are interested in serving.

### Next General Meeting:

- The next general meeting will be held on Sunday March 12, 2023 in Room 130 of the Trumbower Science Building at Muhlenberg College. Roxanne Kamin is an Amateur Astronomer from Harrisburg who is involved in Citizen Astronomical Research.

The February 2023 General Meeting was recorded.

The meeting was adjourned at approximately 4:50 p.m.

Submitted by Joe Zitarelli, Secretary

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

#### Upcoming LVAAS General Meeting Speakers

**March:** Roxanne Kamin, in person and on Zoom, **but not recorded:** "Catching a Shadow from 12 Million Miles Away and Measuring Pluto's Atmosphere. Wait a Minute - Pluto Has An Atmosphere?"

**April:** Anna Baum, Lehigh U. Grad student. Topic TBA

**May:** Joshua Pepper, Lehigh U. faculty. Topic TBA

**June:** LVAAS Secretary Joe Zitarelli speaking on Optics

**July:** Gary A. Becker and Peter Detterline tentatively speaking on the 2024 Eclipse.

**I'm always looking for leads on speakers**, and it would be great if we had more members come forward to present a talk! Please contact me at [astrosandy@gmail.com](mailto:astrosandy@gmail.com)

### ***Via Sandy Mesics, Assistant Director***

If you would like to participate in some citizen science, there is a Zooniverse project called "Star Notes." You look at page scans of 2500 notebooks assembled by the astronomers and women "computers" at Harvard. You identify anything on the pages that's non-textual (doodles, sketches, photos, etc.) I've been doing it in bits at a time, and I can tell you that occasionally you come across a real gem! [here](#)

### ***Via Dave Raker, Society Librarian***

#### New DVD: Gary Deleo: **Observations and Explorations of the Moon**

The following books are new:

**Observing Our Solar System** by Tom Keres

**How to Astronaut** by Terry Virts

**The Secret Lives of Planets** by Paul Murdin

**Envisioning Planets** by Michael Carroll

**Beyond: The Astonishing Story of the First Human to**

**Leave Our Planet and Journey into Space** by Stephen Walker

**Flashes of Creation** by Paul Halpern

**The Solar System** by Robert Harvey

### ***Via Earl Pursell, Planetarium Director***

Attention LVAAS Members! Would you like to learn how to run the LVAAS Planetarium? Would you be interested in giving planetarium shows at Star Parties, to Scout groups, etc.? Then contact Earl Pursell, planetarium director ([planetarium@lvaas.org](mailto:planetarium@lvaas.org)), to set up training. Training generally takes about 90 minutes, and pre-written scripts for shows are available.

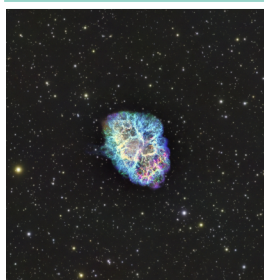
### ***Via Earl Pursell, UACNJ Liason:***

UACNJ provides free public programs on-site at our Observatory in Jenny Jump State Forest from April through October on Saturday evenings.

During the off-season (November through March) UACNJ presents an on-line astronomy-related presentation that begins at 8 p.m. You can tune in by visiting us at our [YouTube channel](#), or visit [uacnj.org](http://uacnj.org).

### ***Via Bill Dahlenburg, Star Party Coordinator***

LVAAS needs help with **Star Party** activities. Anyone willing to help will be trained on running the telescopes. Training is easy. Planetarium shows are: 6 p.m. for kids, 7 p.m. Presentation, 8 p.m. Planetarium Show for adults. **Our next Star Party will be March 25, 2023.** Additionally, if anyone is interested in helping with or taking over the organization of LVAAS Star Parties, please contact Bill: [sm\\_maintenance@lvaas.org](mailto:sm_maintenance@lvaas.org)



#### **Cover: Imager, John Kmetz M1 – The Crab Nebula in Taurus**

Captured with a ZWO ASI2600MM-P camera on a Celestron C925 EdgeHD with 0.7X Focal Reducer using Astronomik 7nm Ha, OIII and SII filters.

21.5 hours total integration. Hubble Palette.

Finished on Dec. 9, 2022

<https://www.nasa.gov/feature/goddard/2017/messier-1-the-crab-nebula>

# Call for volunteers for the Lehigh Valley Space Fest! (May 6 & 7)

**We need your help!**

LVAAS is participating in the first ever Lehigh Valley Space Fest and we need Volunteers to help!

We are looking for people to:

- **Help staff** our indoor display
- **Setup your solar telescope** and assist the public with viewing
- **Provide backup** to our solar telescope operators so they can take breaks

**Also**, if you're interested in either of the following, we'd be grateful for your time and effort:

- **Facilitating** an astronomy-related activity for the public
- **Presenting** to a public audience on a space-related topic

We appreciate any time that you can volunteer, so even if it's for only for an hour or two, we would love to have your help! This is a wonderful opportunity to share your energy, experience, and knowledge of astronomy with the general public.

If you want to help, but would like more details, please reach out using the contact information below. I am happy to provide more information or collaborate on an idea. This will be a fun event filled with people who are interested in Space!

**Lehigh Valley Space Fest website:** <https://www.lvspacefest.org/home>

For more information, or to be an LVAAS volunteer, please contact Blaine Easterwood, at [blaine@ieee.org](mailto:blaine@ieee.org)

Submitted by Blaine Easterwood



**Sat. & Sun. May 6 and 7**  
*Paxinosa Elementary School*  
*Easton, PA*



## The CMB-S4 Saturday Science Series

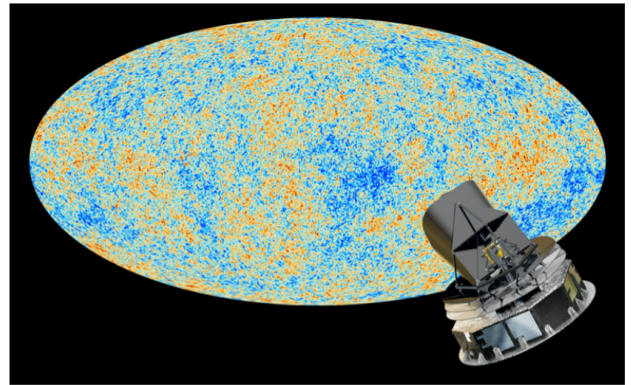
**Attention High School Students!** If you are interested in some of the most fascinating mysteries of our universe, here is a great opportunity for you!

**What:** Saturday Science Series (CMB-S4, an NSF and DoE supported project)  
**When:** April 8, 15, 22 and 29 (all Saturdays), 11a - 1.30p EDT  
**Where:** Online  
**Who:** High School students (grades 9 - 12) who are interested in the mysteries of our universe  
**Cost:** Free!

Here is a brief background and summary by leader of the program, Felipe Maldonado:

I am frequently fascinated by kids' questions. And I especially like questions that adults don't ask. I've never heard an adult ask how the Sun shines, or why the night sky is dark, and yet these questions, it turns out, are among the most important questions in astronomy. Neither of them had a rigorous answer until the 20th century, either. Surely your first impulse if someone asks why the night sky is dark would be to say that it's because the Sun isn't around. But since every single star in the sky is about as bright as the Sun, then shouldn't they be bright enough to make the night sky bright? As it turns out, this problem is called Olbers' Paradox, and the solution of the paradox is that the Universe either has a finite age or a finite size, or both. The mere fact that the night sky is dark is evidence of something as profound as that, and I am always amazed by this fact. We could say that Olbers' Paradox was among the first rigorous tests of a new discipline of astronomy called cosmology, the study of the Universe. Cosmology is tasked with the study of the contents of the Universe, its history, origin, and eventual fate.

My curiosity about the early Universe, dark matter, dark energy and so on led me to become a cosmologist and join the CMB-S4 Collaboration. The Collaboration is a network of professional cosmologists who study the cosmic microwave background (CMB), the earliest light of the Universe. It comes to us from a time before stars, when the Universe was merely ~300 000 years old. The scientists of the Collaboration are designing and working on the building and operation of a new observatory that will observe the CMB from Chile and Antarctica. I lead an outreach initiative called the CMB-S4 Saturday Science Series, a program of 8 talks over 4 sessions given by cosmologists. It is fully virtual, free of charge, and those who take part in all four sessions will receive a certificate of participation that we hope will help in academic endeavors. It is intended for high school students. We will cover topics like the Big Bang, inflation, dark matter, dark energy, unsolved mysteries in cosmology, and more. I hope you can join us, and I would be grateful if you could share this article with people you think might be interested. Felipe Maldonado, Ph.D.



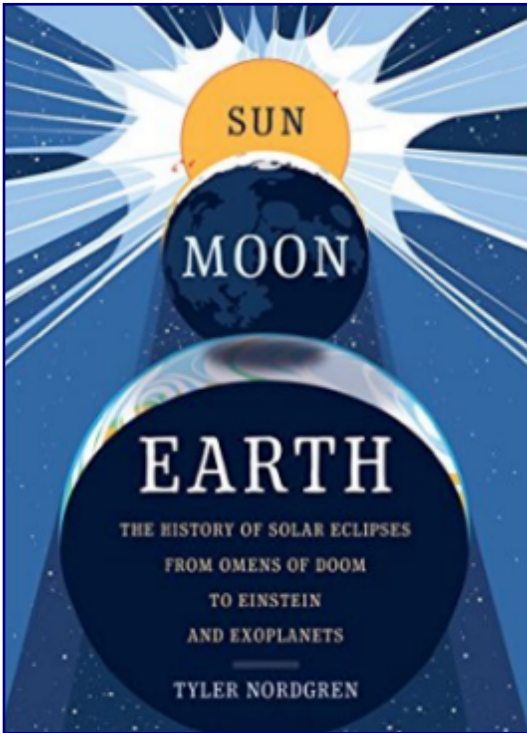
*Figure 1: The cosmic microwave background with the Planck satellite in front. Credit: ESA and Planck*

**Series Agenda and registration** <https://cmb-s4.org/outreach/upcoming-events/>

We hope to see some of our young, curious minds there. Enjoy!

Article submitted by: Blaine Easterwood

# LVAAS Book Club



The LVAAS Book Club will be reading “Sun, Moon, Earth: The History of Solar Eclipses from Omens of Doom to Einstein and Exoplanets” by Tyler Nordgren.

This book is loaded with information and is a great way to begin to prepare for the two upcoming solar eclipses - an annular solar eclipse on October 14th, 2023, and a total solar eclipse on April 8th, 2024.

“Astronomy is, in part, made possible by the shadows that span the stars.” This book tells the story of eclipses, and how they went from events of terror, to scientific tool, to tourist attraction.

Pick up your copy and start reading soon. We will meet sometime in April or May for refreshments and discussion. There is one copy of the book in the LVAAS library if you want to get a preview, but this is a book that you will want on your shelf.

If you are interested in joining the discussion, send an email to [blaine@ieee.org](mailto:blaine@ieee.org) and let him know if you want to join the Slack channel.

## Two Reviews:

<https://cs.astronomy.com/asy/b/daves-universe/archive/2016/11/04/book-review-sun-moon-earth-by-tyler-nordgren.aspx>

<https://www.planetary.org/articles/20170814-book-review-sun-moon-earth>

Submitted by Blaine Easterwood, Education Director

**LVAAS General Meeting ~ Open to the Public**  
**Sunday, March 12 at 3 p.m. at Muhlenberg College**  
**Trumbower Science Building, Room 130, and on *Zoom***

**"Catching a Shadow from 12 Million Miles  
Away and Measuring Pluto's Atmosphere.  
Wait a Minute -- Pluto Has an Atmosphere?"**

*presented by*

**Roxanne Kamin**



How about using your telescope to prove that something exists by not observing a deep sky object itself, but rather by capturing an image of its shadow? Or helping to prove the composition of Pluto's atmosphere, or by looking for and being the first to view strange new worlds? Join us as we talk about how you can use your own telescope (or a local observatory scope) to contribute images and/or data to researchers around the world as part of the growing citizen science facet of amateur astronomy.

*As an avid amateur astronomer and fly fisherman, Roxanne has viewed night skies from both the Northern and Southern hemispheres, including three trips to Australia with Southwest Research Institute (SwRI) / NASA. Recently retired from IBM and residing near Hershey, she is active in measuring asteroids with SwRI along with the International Occultation Timing Association (IOTA), and can be found most clear nights observing at Cherry Springs or at the Naylor Observatory, home of the Astronomical Society of Harrisburg.*

<https://www.muhlenberg.edu/media/contentassets/pdf/about/PrintCampusMap-1.pdf> (building #5)

Please see also <https://www.muhlenberg.edu/directions/> for help finding the campus.

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





*Peter Detterline's*  
**Night Sky Notebook**  
MARCH 2023



## The Northern Lights from Iceland

by Terry Pundiak

My wife had planned an Iceland vacation through AAA, that was booked with a company called CIE Tours out of Ireland. It was a guided bus tour, and almost all accommodations were included - the hotel and motel rooms, as well as most of our meals.

I expected nothing of this trip; I just hoped it would be fun, but I was outrageously surprised at how much I enjoyed it! The trip was fantastic in that our guide was so knowledgeable, which made every hour of the trip exciting. Iceland has 10,000 waterfalls, eight major glaciers, several volcanoes - that thankfully are not active at this moment - geysers, lava fields and historic areas. Our guide was just phenomenal at explaining everything we saw. Virtually every hour of every day was exciting because of that tour guide.

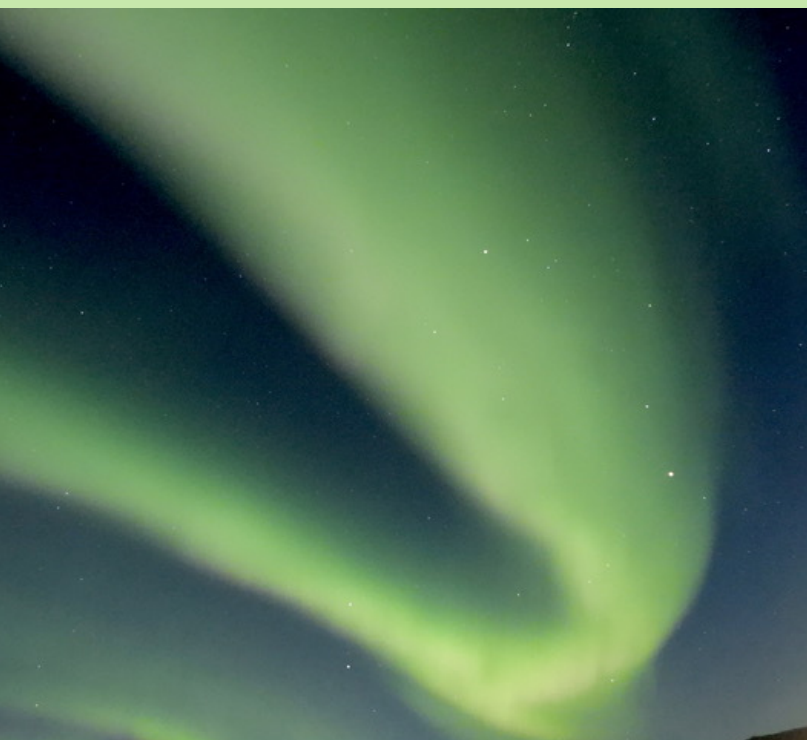
Despite the fact that nighttime came early in November, the weather was generally rainy, overcast and cold, and although we had prepared for North Pole-type experiences with heavy winter rainproof apparel, the weather was actually very mild. Mostly, the temperature was in the low 40's.

On the second to last night of our five day trip, the sky cleared for a short time and we did see the northern lights for about an hour. We got to see dim greenish bands across the sky, and some people got some nice looking photos using their very good smart phones that highly enhanced the images. However, to the naked eye it wasn't wildly impressive.

The next night, at our final and best dinner meeting, we were talking about how disappointing the trip was for not having seen the aurora very well, but then everyone at our table agreed that it didn't matter because we had such a great time; the trip was very much worth it. One woman, actually the most outspokenly disappointed member of our table, went outside for some fresh air and then excitedly texted her husband, "Northern lights, outside, NOW!" Good thing the meal was prepaid, because the thirty of us all dashed out from the table!

The display of aurora was absolutely phenomenal! It was an aurora storm! A large coronal mass ejection had occurred a day or two before, and the sky was just breathtaking. Super bright, green aurora! Thick bands of bright green winding around and dancing and twisting! It was mesmerizing, and we we watched it for perhaps an hour and a half. I had left my coat on the bus two blocks away, so I nearly froze to death, but it was worth it just to watch and photograph the outrageously beautiful northern lights storm!







# From the Archives: Mayan Astronomy

By Sandy Mesics

At the March 1973 general meeting, the attendees heard a talk on “Mayan Astronomical Tables.” The speaker was Hubert Harber, then an Associate Professor of Earth and Space Sciences at West Chester State College (now West Chester University).

The then 38-year-old Harber was born in Iraan, Texas, a very small town in Pecos County, West Texas. He graduated from Louisiana State University and earned two master’s degrees, one from the University of Colorado, and one from Brown University. During his work on his master’s degree from Brown University he worked on a team led by Charles H. Smiley. Smiley was considered one of the world’s leading authorities on eclipses. They collected and analyzed data relative to establishing a correlation between the Mayan and Christian calendars.



Harber eventually joined the faculty of West Chester University, where he was a professor of Astronomy with a specialty in the history of ancient Mayan Astronomical records and techniques. In March 1970 he conducted a solar eclipse expedition to a Mayan archeological site in Yucatan, Mexico, where the group observed the eclipse using an ancient technique employed by the Mayans. Harber published several articles in Sky and Telescope Magazine, including “Five Mayan Eclipses in Thirteen Years,” “Experiments with a Small Telescope,” and “Daytime Astronomy: A Sundial Contest.” He also authored several articles for The Planetarian and Science News, as well as an astronomy guide for the Boy Scouts of America.

Harber was a builder of many things, including model planes, model trains, sailing ships, and scrimshaw jewelry. He was an avid sailor for many years. He was a member of the Bucks County Radio Control Club, where he very much enjoyed flying, displaying, and discussing his hand-built model planes. In 1997, he won the Crown Circle Award

from the National Coalition for Aviation and Space Education. He was a problem solver who loved figuring things out.

After a long career spent at West Chester University, he retired in 1997. Harber died on Monday, Sept 25, 2017, at his residence in Southampton, PA at the age of 82.

## References

The Observer, March, 1973

[Hubert Harber Obituary](#)

While Comet C/2022 E3 (ZTF) was never to be the bright naked-eye object hyped in the media, a handful of LVAAS' determined astroimagers managed to capture it as it first appeared as a small speck in January, to its sinking in the west by early March. See you in another 50, 000 years, little icy dust ball!

**Frank Lyter**



**John Kmetz**



**Brett Fadem**



**Ben Long**



**Jamie Elovski**



**John Kmetz**







# StarWatch

## Cosmic Perspective Alive and Well at Moravian

I am becoming more and more convinced that Neil deGrasse Tyson, the director of the American Museum of Natural History's Hayden Planetarium in NYC, is possibly the best modern spokesperson for the sciences that has ever existed. If you see him in his public persona in an interview, let's say with Stephen Colbert, he is like a kid on steroids, not only hyping science in general but his favorite science and mine too, astronomy. However, in Tyson's private world there are other wonderful ideas percolating throughout his fertile mind, a sense of cosmic awareness that places humanity as a common and equal player in a universe which is largely—hugely—inhabitable to our survival, and with humankind living on a "precious mote" that needs our protection for all living species. These are not new ideas, but they are expressed in a much grander fashion because the entire universe is taken into consideration. \* Some examples of Tyson's thoughts go like this: "The cosmic perspective comes from the frontiers of science, yet it is not solely the provenance of the scientist. It belongs to everyone. The cosmic perspective opens our minds to extraordinary ideas, but does not leave them so open that our brains spill out, making us susceptible to believing anything we're told. The cosmic perspective finds beauty in the images of planets, moons, stars, and nebulae, but also celebrates the laws of physics that shape them. The cosmic perspective is humble. The cosmic perspective not only embraces our genetic kinship with all life on Earth, but also values our chemical kinship with any yet-to-be discovered life in the universe, as well as our atomic kinship with the universe itself." \* I played for my class Tyson's last chapter about his views on the cosmic perspective in the

audiobook which he wrote and narrates, *Astrophysics for People in a Hurry* to elicit further discussion. However, I have to admit that the conversation was not proceeding as I had planned. It was too lopsided, too teacher-oriented. Perhaps students felt intimidated by the thoughts of someone whose mind works on a more sophisticated level. How could they compete with Tyson's thoughts and poetic prose regarding his ideas on being compassionate, empathic; on being human, humble, truthful, and tolerant? \* And then a student in my classroom slouched and lost consciousness. Before I could even fully react, nearby students were guiding and protecting the person, chairs were being moved aside, tables shifted, and other students were volunteering their assistance. The episode was extremely brief, with consciousness being regained within moments, but the scene was already set for a graceful descent to the floor, had the episode continued. Other pupils volunteered to drive and escort the individual back to their dorm. \* The student knew what had happened. It had occurred before; professional medical assistance was deemed not necessary. Campus Security later performed a wellness check and the Health Center was notified. \* Although my students had difficulty in extrapolating from Tyson's views in words, I saw it decisively come into play during those moments of concern. I was the one who was humbled and proud to be their instructor, but I was even more grateful for not having to feel completely alone in this alarming situation. Help was all around me. Thank you PHYS-108 for the best demonstration of the cosmic perspective that I could have possibly imagined. Ad Astra!

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**M31 The Andromeda Galaxy Imager: Gary Schuster**

Losmandy Mount

Celestron 9.25 in. telescope at F/6.3

Nikon D3500 camera, 10 frames at 1 min. exp. 1600 ISO

Taken on Dec. 22, 2022 at my home in Quakertown Pa.

Processed with SIRIL using basic pre-processing script OSC-Preprocessing

Post processing done also with SIRIL using basic functions, Color

Calibration, Deconvolution, Asinh stretching function, and Histogram.



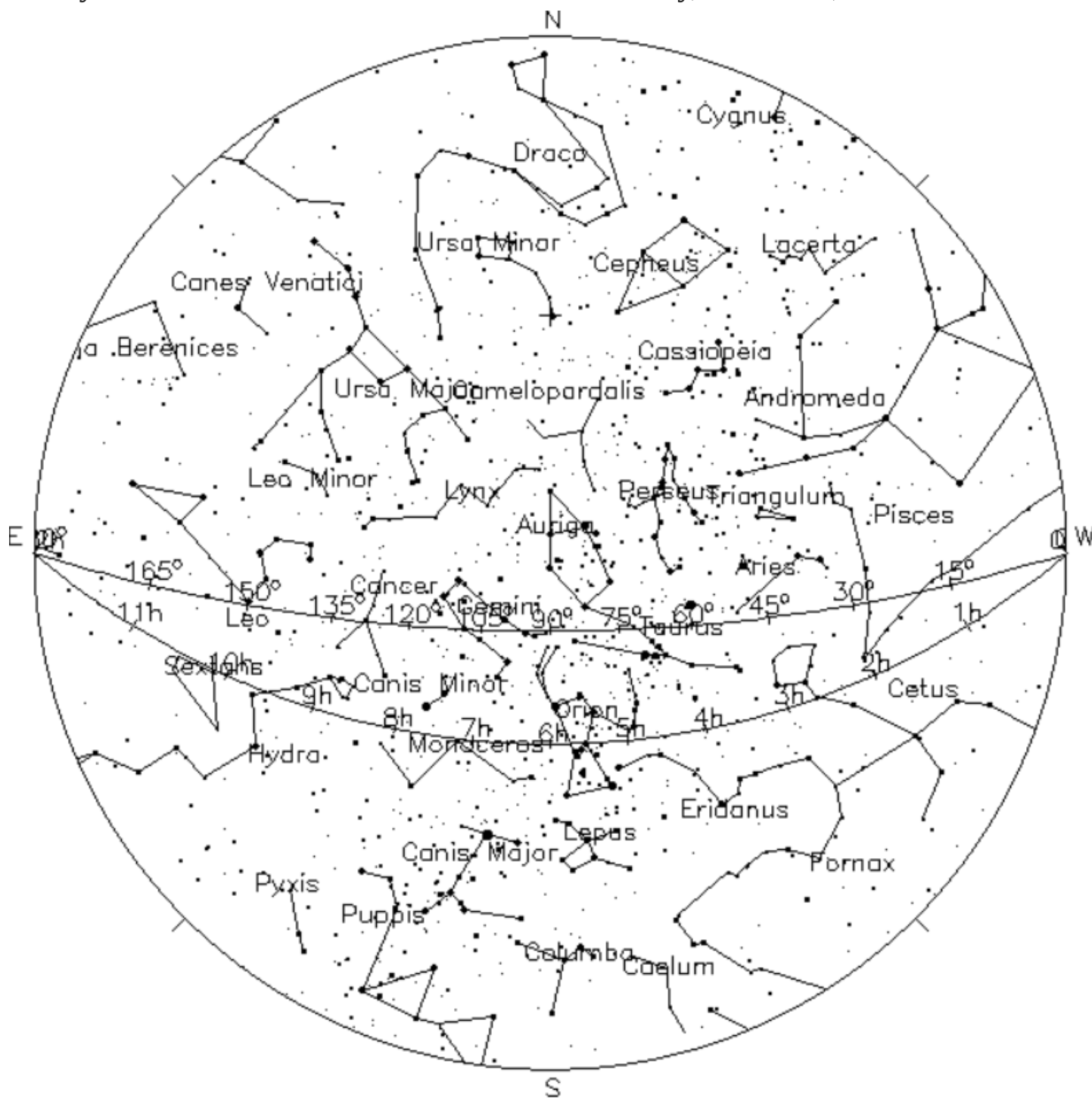
## MARCH

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
			<a href="#">01</a>	<a href="#">02</a>	<a href="#">03</a>	<a href="#">04</a>
<a href="#">05</a>	<a href="#">06</a>	Full Moon <a href="#">07</a>	<a href="#">08</a>	<a href="#">09</a>	<a href="#">10</a>	<a href="#">11</a>
General Meeting - 3:00 PM Muhlenberg <a href="#">12</a>	<a href="#">13</a>	Last Quarter Moon <a href="#">14</a>	<a href="#">15</a>	<a href="#">16</a>	<a href="#">17</a>	<a href="#">18</a>
Deadline for submissions to the Observer <a href="#">19</a>	<a href="#">20</a>	New Moon <a href="#">21</a>	<a href="#">22</a>	<a href="#">23</a>	<a href="#">24</a>	Star Party <a href="#">25</a>
LVAAS Board of Governors Meeting <a href="#">26</a>	<a href="#">27</a>	First Quarter Moon <a href="#">28</a>	<a href="#">29</a>	<a href="#">30</a>	<a href="#">31</a>	

## APRIL

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
						<a href="#">01</a>
General Meeting - 7:00 PM <a href="#">02</a>	<a href="#">03</a>	<a href="#">04</a>	<a href="#">05</a>	Full Moon <a href="#">06</a>	<a href="#">07</a>	<a href="#">08</a>
Easter <a href="#">09</a>	<a href="#">10</a>	<a href="#">11</a>	<a href="#">12</a>	Last Quarter Moon <a href="#">13</a>	<a href="#">14</a>	NEAF <a href="#">15</a>
NEAF <a href="#">16</a>	<a href="#">17</a>	<a href="#">18</a>	<a href="#">19</a>	New Moon <a href="#">20</a>	<a href="#">21</a>	Astroimaging Meeting - 7:00 PM <a href="#">22</a>
Deadline for submissions to the Observer <a href="#">23</a>	<a href="#">24</a>	<a href="#">25</a>	<a href="#">26</a>	First Quarter Moon <a href="#">27</a>	<a href="#">28</a>	Star Party <a href="#">29</a>
LVAAS Board of Governors Meeting <a href="#">30</a>						

Sky Above 40°33'58"N 75°26'5"W Wednesday, March 8, 2023 00:00 UTC



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

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

Based on GIFENCOD by David Rowley

Lempel-Zim compression based on "compress"

Modified by Marcel Wijkstra

Copyright © 1989 by Jef Poskanzer.

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

# 2023 LVAAS EVENT CALENDAR

Contributed by Bill Dahlenburg

2023 LVAAS Event Calendar											
	Sundays			Saturday			Multi-Day Weekends	Moon Phase			
	General Meeting time	location	Board meeting	Astro-Imaging	Star Parties	Scouts at S. Mountain	Scouts at Pulpit R.	New	1 <sup>st</sup>	Full	3 <sup>rd</sup>
January	8	3:00 PM Muhlenberg	29	no meeting	no meeting		no camping	21	28	6	14
February	5	3:00 PM Muhlenberg	26	no meeting	no meeting		no camping	20	27	5	13
March	12	3:00 PM Muhlenberg	26	no meeting	25		no camping	21	28	7	14
April	2	7:00 PM S.M.	30	22	29			20	27	6	13
May	7	7:00 PM S.M.	21	20	27			19	27	5	12
June	11	7:00 PM S.M.	25	10	24			18	26	3	10
July	8	5:00 PM S.M.	30	15	22			17	25	3	9
August	12	7:00 PM Pulpit	27	19	26			16	24	1 & 30	8
September	10	7:00 PM S.M.	24	9	23			14	22	29	6
October	8	7:00 PM S.M.	29	14	21			14	21	28	6
November	12	2:00 PM S.M.	26	11	18			13	20	27	5
December	9	2:00 PM ?	17	16	no meeting		no camping	12	19	26	5

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 4/15 – 4/16  
 Mega Meet 5/19 – 5/21  
 CSSP 6/15 – 6/18  
 Stellafane 8/17 – 8/20  
 BFSP 9/15 – 9/17 ??

## Publishing images is a balancing act!

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

### Put the quality in:

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

### But watch the "waistline"!

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

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

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

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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.

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