

The Observer

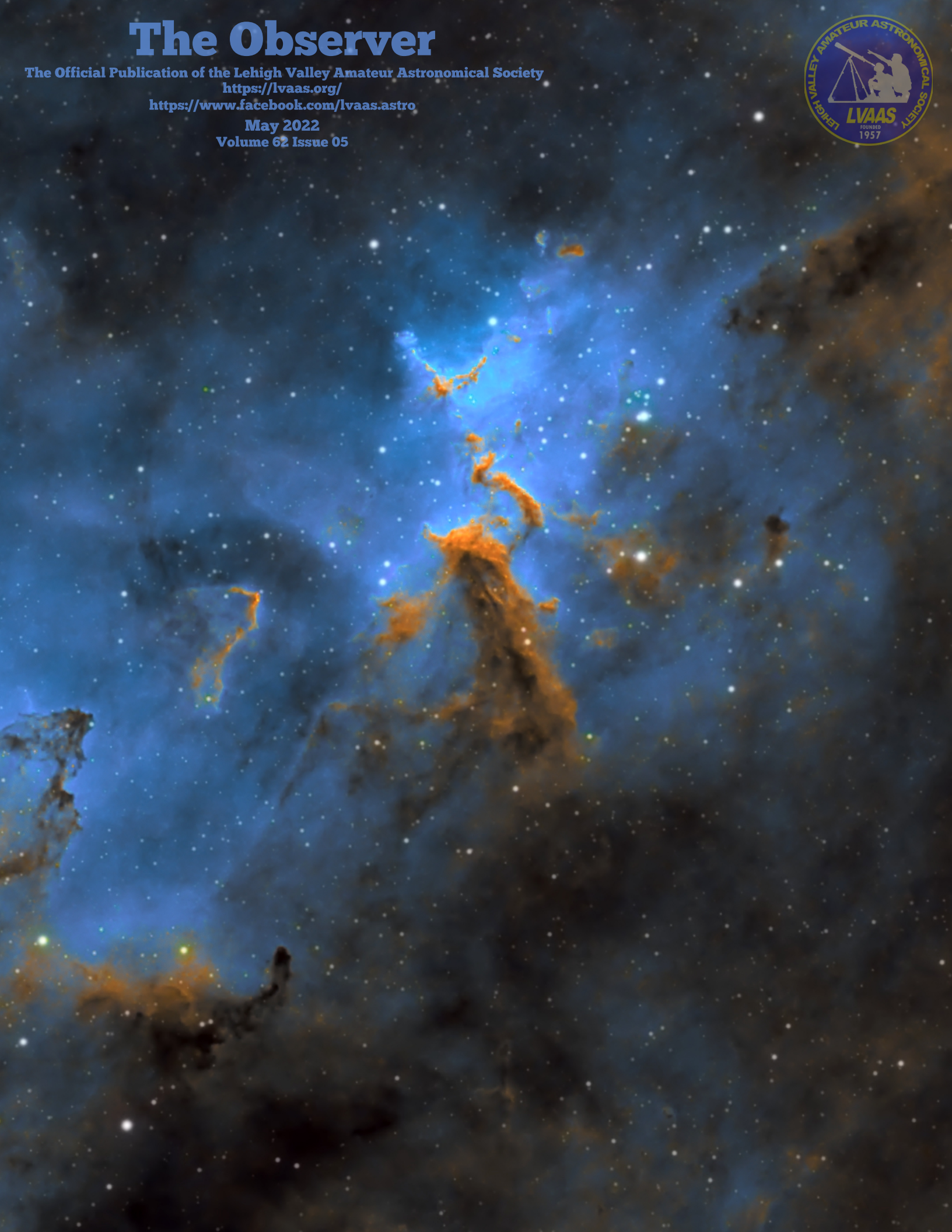
The Official Publication of the Lehigh Valley Amateur Astronomical Society

<https://lvaas.org/>

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

May 2022

Volume 62 Issue 05





ad astra *****

LVAAS is always looking for ways to help future astronomers and physicists in pursuing their goals. Recently we received an email from a young student asking about a job shadowing project for school. To help this student we contacted Felipe Maldonado from the Da Vinci Science Center about assisting the student. Felipe was very interested in helping so after contacting his supervisors, and contacting the school to provide parental permission, the student was able to begin job shadowing on April 21, 2022.

LVAAS has been asked to again participate in the DaVinci Science Center Solar Party being held on Saturday May 14, 2022 from 10am to 5pm. Several members of LVAAS will be attending and bringing their solar observing equipment to view the Sun. This event is part of several events that they are doing related to a nation-wide event called "Remake Learning Days Across America", which runs from April 22, 2022 – May 23, 2022. Come on out and support the DaVinci Science Center.

Fortunately, the weather did cooperate for the April Star Party. Our first public Star Party since the lock down was held April 9th and was a great success. Approximately 50 people total (LVAAS members and public) attended. Two planetarium shows and all three observatories were open as well as several member telescopes set up in the grass between the observatories. Ten LVAAS members volunteered to support the Star Party.

We are always looking for volunteers to assist with club events. This includes Star Parties (guiding parking for cars, run the Red Shift, run the various telescopes, and assist wherever necessary). Your help will be greatly appreciated. Please contact Preston Smith if you would like to volunteer. His email is on the LVAAS Website Contacts page.

Ad Astra!

Thomas Duff

In Memoriam: Ellsworth Machin

By Sandy Mesics

We were saddened to hear about the passing of Ellsworth Machin III on January 1, 2022. Ellsworth joined LVAAS in 1966 when he was a freshman at Lehigh University, and soon became involved in club activities. In 1967, Ellsworth served as Curator, a position similar to our present Star Party



Coordinator. Mainly, Ellsworth put on lectures and programs for outside groups. This involved organizing a group of facilitators, myself included, and operating the Schlegel planetarium projector.

Ellsworth's father owned the Machin Construction Company in Allentown. In 1968, his company provided concrete forms, materials, equipment, and assistance for the construction of the Schlegel McHugh Observatory on Pulpit Rock. Ellsworth organized work parties to start building the observatory.

That spirit of volunteerism spurred Ellsworth to offer his services to LVAAS: he ran for Treasurer in 1974, Assistant Director in 1975, and Director in 1976.

Mainly, Ellsworth's passion was scouting. He was very active in the Minsi Trails Council of the Boy Scouts of America. LVAAS member

Dave Binder recalled, "In Scouting you could always depend on Ellsworth to be there when something needed to be done. He wore many hats for many years. He was awarded the Silver Beaver Award in the class of 2009. The award, a national level Scouting award, is the highest award presented by a Scouting council to acknowledge significant and outstanding volunteer service to Scouting and the community. Ellsworth also was awarded the Order of the Arrow Founders Award in 2008, a national level award for service to Scouting, the Order of the Arrow and to Scout camps."

Ellsworth is survived by his wife Donna, his daughter, Roberta M. Machin of Nazareth and stepson, Jesse P. Haines of Schnecksville. Ellsworth was 74.



Ellsworth at Pulpit Rock in 1967

Minutes from the LVAAS General Meeting – April 10, 2022

The April 2022 LVAAS General Meeting was conducted both electronically using an on-line service and in-person at the South Mountain site. Approximately 46 people were in attendance. Assistant Director Rich Hogg opened the meeting at 7:00 p.m.

Tonight's General Meeting's presentation was "Threats to Astronomy, and What You Can Do" by Dr. Douglas Arion. There are real threats to astronomy - both for amateurs and professionals, ranging from growing light pollution to satellite mega constellations. As one of the individuals involved in these issues through the American Astronomical Society and the International Astronomical Union, as well as through the Mountains of Stars public science education program, Dr. Arion has had the opportunity to address these threats, and will share with us key information on the depth of these challenges, ways to communicate about them to others, and mitigation efforts that are underway or can be initiated.

Dr. Douglas Arion, Ph.D. is the founder and director of Mountains of Stars, a public science outreach and education program that engages the public with 'environmental awareness from a cosmic perspective.' More than 67,000 members of the public have participated and the program has trained more than 300 students and nature guides and educators in science communication. He is Professor Emeritus of Physics and Astronomy and Donald D. Hedberg Distinguished Professor Emeritus of Entrepreneurial Studies at Carthage College. Previously, he was Assistant Vice President and head of the Applied Physics and Engineering Division of Science Applications International Corporation.

He, with Richard Fienberg, co-founded Galileoscope to provide high quality, low cost telescopes for worldwide promotion of science education and outreach as part of the International Year of Astronomy (2009) and International Year of Light (2015). More than 260,000 are now in use in over 110 countries.

Arion is a Fellow of the American Physical Society, a member of the American Astronomical Society (AAS) and of the International Astronomical Union. He has received the Distinguished Service Award from Sigma Pi Sigma (the physics honorary society), the Volunteer Leadership Award from the Appalachian Mountain Club, and the Dark Sky Defender Award from the International Dark Sky Association.

He serves on US and international commissions on dark skies preservation and the international SATCON2 panel addressing satellite mega constellations. He has conducted research in many fields, including the solar atmosphere, radiation effects on electronics and space systems, and on the

composition of asteroids. Arion is also a member of the Springfield Telescope Makers, who hold the Stellafane convention every summer.

Dr. Arion recommends these resources to protect the dark:

- International Dark Sky Association (IDA) - www.darksky.org
- www.mountainsofstars.org

Treasurer's Report: Blair Hogg

- Bills are being paid and dues continue to come in.
- Annual check from First Energy for use of the road at Pulpit Rock has been received.

Membership: Rich Hogg

- 2nd readings
 - n/a
- 1st readings
 - Harold Bell
 - Justin Brown - 2nd reading waived as per BOG vote
 - Brian and Melina Fasy
 - Tom and Jill McNabb
 - Bob Dreisbach

General Comments:

- Many thanks to Mike Clark, Pete Brooks, Bill Dahlenburg and his team, and Earl Pursell for maintaining the SM HQ during the time it was not used during the pandemic and for getting the planetarium up and running again.
- Mike Waddell has an image of the November meeting at Pulpit Rock with star trails and members in attendance. It will be hung up at South Mountain.
- A lunar eclipse is coming up the night of May 15th from 10:30 p.m. to 2:52 a.m on May 16th.

Library - Dave Raker

- Please reach out with any recommendations for books or DVDs to add to our collection.

Planetarium - Earl Pursell

- Training is going well; 5 people have been trained so far.
- Anyone else interested, please reach out to Earl via email.

Winter Project update - Frank Lyter

- The Dobsonian Encoder Project is going well.
- The Meteor Camera Project:
 - Global project to enlist amateurs to take pictures of the night sky with high-sensitivity cameras.
 - Cameras being installed will be the first in Eastern PA.
 - Software freely available that can filter out airplanes and concentrate on meteors.
 - All content is being saved on Google Drive and is easy to get caught up.
 - To attend, please email Frank Lyter.

Pulpit Rock Observatories – Frank Lyter

- In the next month all key locks on the observatories will be changed to combination locks.

Star Parties - Bill Dahlenburg

- 45 people in attendance.
- The RedShift Store enjoyed brisk business.
- We appreciate everyone who showed up to help out.

Next General Meeting:

- In May, John Conrad will speak on “NASA’s Infrared Platforms.” The meeting will be held in person at South Mountain and online via Zoom. Please check your email for the link.

The April General Meeting was recorded.

The meeting was adjourned at approximately 8:56 p.m.

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Submitted by Michael Huber, Secretary

Via Michael Lincoln and Eric Loch: International Dark Sky Association Petition

Please sign the petition to create legislation to save our dark skies; **2500 more names are needed!** (VPN off)
<https://www.change.org/p/senator-carolyn-comitta-improve-and-protect-dark-skies-of-pa?redirect=false>

Via Sandy Mesics: Upcoming LVAAS General Meeting Speakers

In May, **Jon Conrad**, NASA Ambassador will speak about "NASA's Infrared Platforms." via Zoom
In June, **Gary DeLeo** will speak on "A Tale of Two Circles: from Orbits to Atoms." - Live at SMHQ Grady
In July, **Ray Harris** will speak on "Lost Constellations." - Live at SMHQ Grady
In August, **Frank Lyter** will speak on "LVAAS Winter Projects: the Meteor Camera, and the Digital Setting Circles for the 17" Dobsonian." - Live at Pulpit Rock
In October, **Mike Huber** will speak on "Astronomy with Kids" - Live at SMHQ Grady
Speakers are still needed for September, November and December; please contact Sandy to volunteer or to suggest a speaker: astrosandy@gmail.com

Via Dave Raker: New Book and DVD Order

Dave is currently putting together a book order that will come from Hamilton Books. If you have any suggestions for books and/or DVDs for the library please let Dave know. Draker@cedarcrest.edu

Via Earl Pursell, UACNJ Liason:

United Astronomy Clubs of New Jersey (UACNJ), of which LVAAS is a member, will be holding Public Nights (Star Parties) every Saturday from now until the end of October. There will be a talk beginning at 8 p.m. live and online, followed by observing. Since both the talk and the observatories are outside, everything is weather permitting. Reservations are suggested, but not required. Please visit www.uacnj.org for more information.

Via Earl Pursell: Lockheed-Martin Spacemakers Podcast

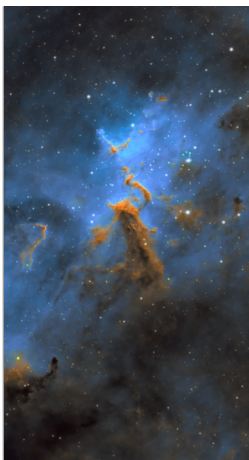
[Launched Sept 1]...go behind the scenes of some of the greatest space exploration missions of our time, and... chat with our experts about how these missions are shaping the future of space..." [here](#)

Also, **Dark Skies** Talk by Douglas Arion: <https://www.youtube.com/watch?v=zf9Lj5bymd4>

Benefit from giving to LVAAS through your IRA

If you are 70 1/2 or older, you can make a charitable gift directly from your IRA to LVAAS without paying income tax on the withdrawal. State laws about Qualified Charitable Deductions (QCDs) and how QCDs are handled vary. If interested, please consult an adviser so you can help LVAAS today!

https://lvaas.org/page.php?page=using_rmd_to_support_lvaas



Cover image: Melotte 15 – The Heart of the Heart Nebula Imager: John Kmetz

Melotte 15 is a collection of interstellar clouds and young massive hot stars located about 1.5 million light years from earth. Plentiful radiation from these stars causes emission radiation from the ample hydrogen, oxygen and sulfur atoms located within this gaseous nebula. This region is often called the Heart of the Heart, as it centrally located within IC 1805, the well know Heart Nebula in Cassiopea.

Telescope : Sky-Watcher Esprit 100ED

Camera: ZWO ASI2600MM Pro

Filters: Astronomik 2" SII 12nm, 2" OIII 6nm, 2" Ha 6nm

Location: Upper Providence, PA

Date: December 23, 2021

S O L A R P A R T Y !!

Volunteers Needed!



*Bill Dahlenburg helps a visitor
with solar viewing.
(November 2021)*

Do you have an interest in our closest star? Do you want to use that interest to help the science-minded public view and learn about our sun?

We are in need of a few volunteers to help with a "Solar Party" at the Da Vinci Science Center.

Here are the details:

Event: Solar Party

Location: Da Vinci Science Center,
Allentown

Date: 14 May 2022

Time: 10a - 5p

You don't need a solar scope to come out and help (but you can certainly bring one if you do!). We need members to come out

and share your interest in the sun and help us represent LVAAS in the community.

If you are interested, please let Blaine Easterwood know as soon as possible by sending an email to education@lvaas.org and including "Da Vinci Solar Party Volunteer" in the subject line of your email.

And if you want an up-to-date look at what our star is doing right now, head on over to the NASA SOHO project at:

<https://soho.nascom.nasa.gov/data/realtime-images.html>

Thank you!

Blaine Easterwood
Director, LVAAS Education Committee



*Sunspots in Active
Regions AR2993, 2994,
and 2995. Captured 24
April 2022 with a
Celestron C8, white light
filter and an iPhone.*



*Earl Pursell shows a visitor
how a solar projection viewer
works (November 2021)*

Lehigh Valley Amateur Astronomical Society (LVAAS)

MEGAMEET

Pulpit Rock Astronomical Park

May 27-29, 2022

(We may re-schedule depending on the weather conditions or Covid circumstances.
Please check the Website lvaas.org for updates.)

EVENT INFORMATION

MegaMeet is LVAAS's annual bare bones star party, without vendors, speakers, or registration fees. Members in good standing of regional amateur astronomy clubs are invited to attend.

MegaMeet attendees can either come for the evening observing sessions or tent camp for the weekend. Access to the site, behind a locked gate, is via 2 miles of some rather steep gravel mountain road. The road is in good shape and is readily accessible for cars and light trucks. Trailers should not attempt to access the site. Camping is encouraged, but space is limited.

Due to limited capacity at the site Non LVAAS members will be required to register for this event. You can register for the event by emailing director@lvaas.org with your name, number of people in your party and indicate if you plan to camp or just observe.

SITE INFORMATION

Pulpit Rock Astronomical Park, or as it is commonly called, "The Rock," is a 4.3-acre mountaintop site near Hamburg, Pa that sits 1,600 feet above sea level on the Appalachian Trail. The installations and equipment at Pulpit Rock offer the serious amateur or the novice an opportunity to contribute meaningful scientific information to the astronomical community or to simply view the splendors of the heavens from our several acres of landscaped grounds. The site was founded in the 1960's by Henry Kawecki, an industrialist from Berks County, who built the first observatory.

DIRECTIONS AND SITE ACCESS

Directions to the site can be viewed at LVAAS. For non LVAAS members or members without keys **the locked gate will be attended on Friday May 27 from 4:00 PM to 7:00 PM and Saturday May 28 from 4:00 PM to 7:00 PM**. Upon access to the site, you will receive the combination to the special gate lock used for this event and will be free to come and go until 12:00 noon on Sunday.

FOOD SERVICE

There is **no food service and no potable water** so please plan on bringing your own food and water. If you do plan on bringing your own food and cook it yourself, you must use either a charcoal or gas grill for cooking as no open fires are permitted on site.

FACILITIES

There are **no shower facilities**; however, there is electricity and a flush toilet available on site. Please visit our web site at LVAAS for information on the site.

QUESTIONS

Questions can be directed to our Director, Tom Duff at director@lvaas.org



Pulpit Rock Astronomical Park

Lat: 40° 35' 78" N

Lon: 75° 55' 57" W

Alt: 1,584 feet

Mag Dev: 11° 57' W

LVAAS General Meeting at *Grady Planetarium and via ZOOM*

Sunday, May 1, 7:00 p.m.

"NASA'S Infrared Platforms"

presented by

John Conrad, NASA Ambassador

**via ZOOM*



John will tell us about what we can learn from infrared astronomy, and discuss current and upcoming infrared telescopes in the air and in space, including SOFIA, Spitzer, Hubble, and the James Webb Space Telescope.

John Conrad followed his childhood interest in space and spaceflight through Astronautical Engineering degrees at the US Air Force Academy and Purdue University straight into leadership in unmanned space programs for the Air Force and NASA. Now retired, his extensive career experiences never wandered far from technology development and application, in Aerospace and Defense as well as IT and Energy and Security programs. His life-long learning (formal and informal) and accumulated tools, have enabled him to make frequent presentations to orient and promote science applications and solutions to a variety of audiences. His most recently used platforms include telescopes and binoculars to share his knowledge and love of astronomy and cosmology. John is eager to speak to your group as a NASA/JPL Ambassador - bringing you the expertise of NASA scientists and engineers, providing insights into US progress in exploring space.

****LVAAS Members will receive an email with meeting invitation/link. Prospective new members who wish to attend the online meeting please email membership@lvaas.org***

LVAAS Meteor All Sky Camera Project!

LVAAS is looking for volunteer members to participate in a first ever, winter project to assemble Meteor All Sky Cameras for use at our South Mountain & Pulpit Rock Observatory Sites.

The project is intended to involve volunteers of all experience levels to build Meteor All Sky Cameras based on the Raspberry PI platform that will be installed at LVAAS observatory sites.



LVAAS is picking up the material costs for the units and will be facilitating the build via remote Zoom sessions and in-person events for field testing and deployment.

We are encouraging members with little to no experience in these types of systems to actively participate with demonstrations, coaching and troubleshooting assistance from more experienced members. Using Zoom for most of the activities will minimize travel and encourage active participation or simply observing the process. Volunteers are welcome to purchase their own parts and participate in that manner if they wanted their own for home. The unit cost expected to be approximately \$200.

Activities include:

- Setup & Configuration of Raspberry Pi with suggested applications
- Networking of Raspberry Pi for downloading images & remote access
- 3d Part / Enclosure design & printing (e.g. via Fusion 360)

Reference: Make Magazine Article:

<https://makezine.com/projects/raspberry-pi-meteor-camera/>

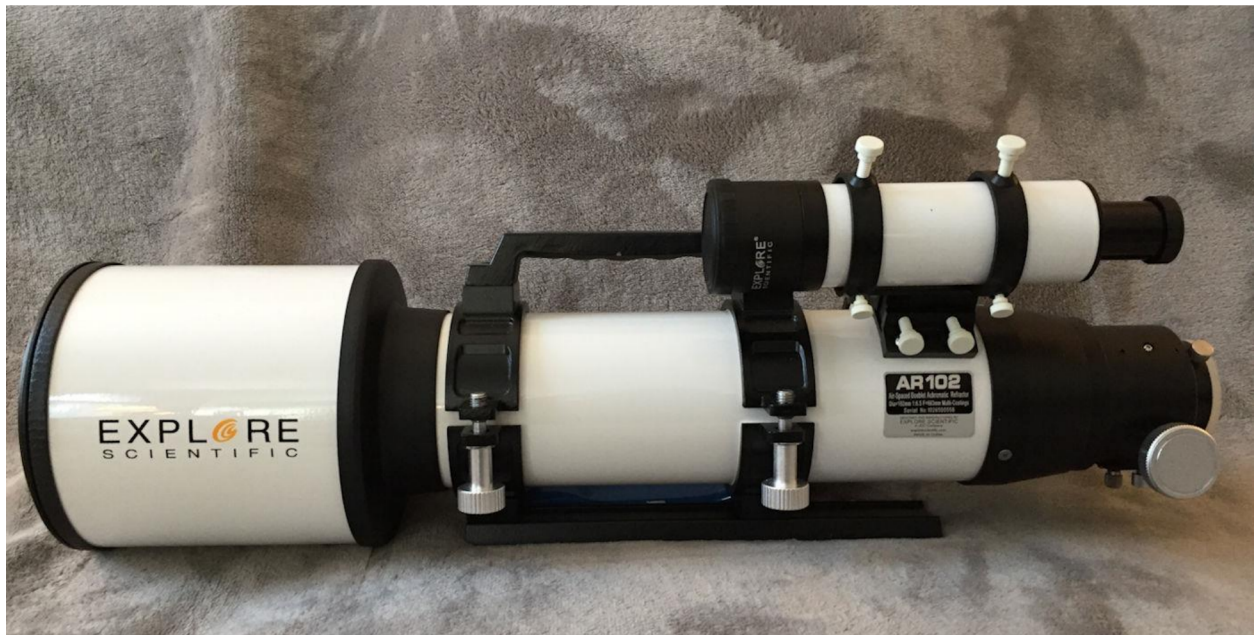
Contact us if you would like to participate or have any questions!

Blaine Easterwood-Education Director - blaine@ieee.org

Frank Lyter-Pulpit Rock Observatory Director - flyter@ptd.net

For Sale: \$300

**Explore Scientific - AR102 f/6.5
Air-Spaced Doublet AR Series
Achromat Refractor Telescope**



Virtually new in box. Includes dual speed 2" focuser, cradle rings with handle, 8x50mm finder, and all packing materials. This same model scope is currently selling for \$600 if you can find it. The reason I am offering so cheap is that I am keeping the 2" diagonal. I have a 1.25" diagonal and 2" adapter that I will sell with the scope for an additional \$25 if needed.

Contact: Bob LaFleur at BLF999@Gmail.com



Night Sky Notebook
for
MAY
by
Peter Detterline

Night Sky Notebook

what you see when you look up



Peter
Detterline

Get cooking...

In LVAAS style!



Start by shopping for your ingredients using our eco-friendly reusable shopping bag. Made of 100% recycled materials, 12" x 13". Spot clean with damp cloth. Only \$17.99



And when you start cooking, stay neat and clean with our own LVAAS apron. Choose our current logo (left) or our retro 1959 logo (below). 100% cotton twill, 31" long x 29" wide, two large pockets. Machine wash cold, tumble dry low. Only \$20.99



For this and many other items, visit our online LVAAS Redshift Store:

<https://www.cafepress.com/lvaasredshiftonlinestore>

From the LVAAS Archives: George Calver, Master Mirror Maker

By Sandy Mesics

This month I digress a bit from LVAAS history to talk about a mirror maker I had never known of. We've all heard about classic telescope opticians such as Alvan Clark and John Brashear, but how many of us have heard of George Calver? I admit that I had not until I ran across an article in the March/April 1962 issue of *Review of Popular Astronomy* about Calver written by noted American optician and telescope maker Tom Cave.

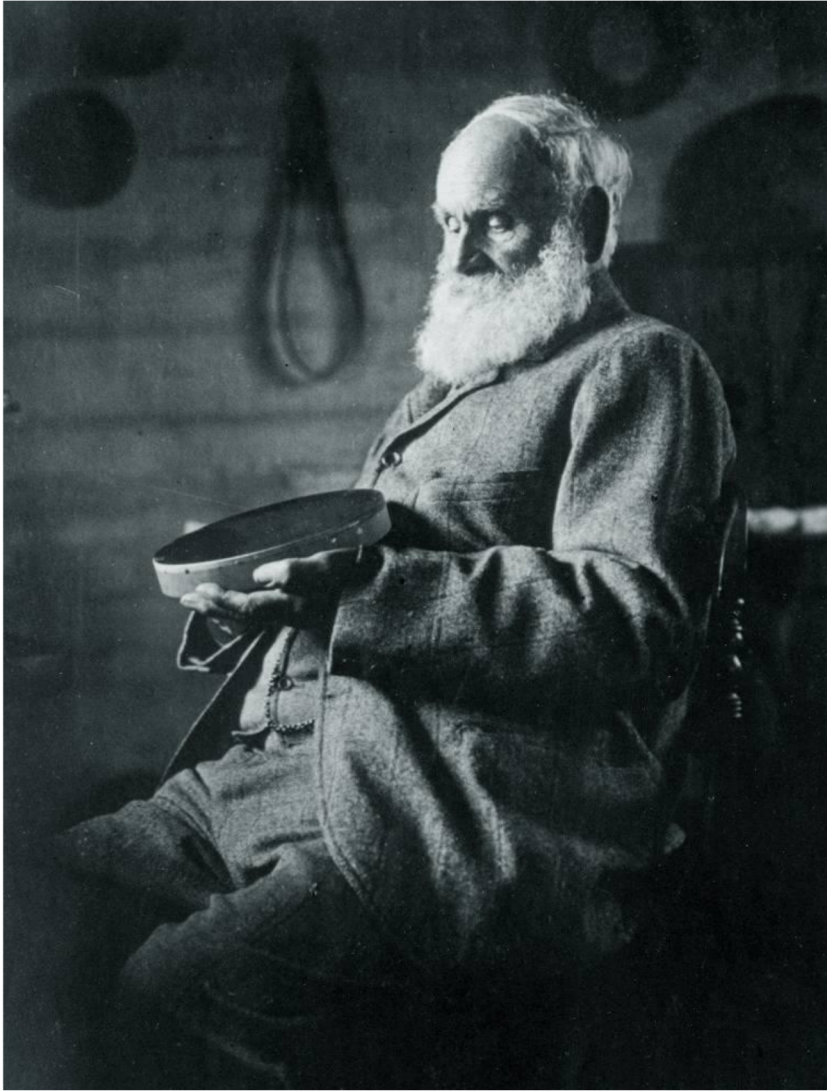


Mr. George Calver was born in 1834 in Yarmouth, England. By 1862 he was starting to apply silver to speculum mirrors, and it was likely around that time that he started making his own glass telescope mirrors. He struggled along for some time, getting help and advice from Rev. Cooper Key, a noted telescope maker of that time. By 1874 Calver emerged as a maker of excellent mirrors and finished Newtonian telescopes. His early instruments were mostly in the 5-1/4 to 8-1/2 inch aperture range with focal lengths ranging from f-9 to f-12. He quickly established a reputation for fine mirrors.

The noted British astronomer and astrophotography pioneer Dr. A.A. Common, ordered an 18-inch mirror from Calver in 1876. He was reportedly so delighted in its performance that a few years later he subsequently ordered a 36-inch mirror from Calver. After Common used it for a while, this mirror and telescope was sold to Mr. Edward Crossley, who used it for some years, and eventually donated it to Lick Observatory, where it was in active use from 1885 to 2009. According to Tom Cave, "Tests were conducted many years ago at Lick on the Crossley reflector's visual performance by Dr. E.S. Holden, and the mirror's resolution of close double stars when 'seeing' was excellent was truly amazing, attesting to the excellence of Calver's mirror figuring."

In the early 1880s Calver moved his telescope making operation to the country in a small barn-like structure far from where moving vehicles and trains would interfere with his testing. He began using machines and glass tools to do much of the rough grinding. He also used machines for polishing and tested his optics using spherometers and Foucault-type testing during figuring. As a last test, after silvering his mirrors, he star tested them before shipping to his customers.

Calver made about 4000 mirrors in his lifetime. While the majority were of small aperture, he made many 12-to-15-inch diameter mirrors and a few 18–20-inch mirrors. Aside from the 36-inch mirror he made for Common, it appears the largest mirror he ever made was a 50-inch for Sir Henry Bessemer. Bessemer wanted Calver to try to make the mirror by applying suction to a thin glass spherical mirror and polishing it over a pressure cup. The method apparently failed, and the scope was never built. The ultimate fate of the mirror is unknown. According to Calver, "I do not know where the 50-inch mirror I made for Sir Henry Bessemer is. He gave me the power to offer it as a gift to any institution or Society who would mount it and equip it in an observatory suitable for it. I tried to find a place for it, but could not on account of funds." (Hollis, 1914) Calver also submitted a quote for producing a 100-inch mirror for Lick Observatory, but did not make the mirror.



In 1894, Calver published *Hints on the Silvered Glass Telescopes*, and wrote several articles on the making and testing of mirrors.

Interestingly, despite the superb figures of Calver mirrors, they were considered very thin for the time. They were reported to be slightly under-corrected, to allow for the effect of night-time cooling. According to Tom Cave, “The result was to throw a bit more light into the central spurious disc of the diffraction pattern and a little less into the rings, thus making for better definition on the stars and planets.”

Calver was described as “... a man of artistic temperament and a great lover of music; while living at Chelmsford, he was a member of the local musical society.” (RAA, 1928) Calver died in 1927 within weeks of his 93rd birthday. He and his wife had no children. “The tombstone in Walpole Churchyard does not refer to his life’s work, but says ‘Kind to the poor and little children.’” (Dall, 1975)

1. George Calver. Image credit: <https://britastro.org/iandi/instrument-93.htm>

References

Cave, Thomas R. Mirrors by Calver, Review of Popular Astronomy Vol LVI No. 516, March-April 1962, p. 4-6.

Dall, H.E. George Calver – East Anglian Telescope Maker, Journal of the British Astronomical Association 1975 Vol. 86, p. 49-52.

Hollis, H.P., Large Telescopes, The Observatory, 1914, June Vol. 37 p. 247.

Obituary Notices: Fellows: Calver, George. Royal Astronomical Society Notices, 1928, Vol. 88 p. 251-252.

Image credit: <https://britastro.org/iandi/instrument-93.htm>



StarWatch

Call me an Umbraphile

“Call me Ishmael,” is probably a little more dramatic of a beginning than calling me an umbraphile, coronaphile, eclipsoholic, ecliptomaniac or just a plain eclipse-chaser. After all, I’m not the maniacal Captain Ahab trying to hunt down a white whale, but I am attempting to pursue the darkness created by a solar or lunar eclipse. • I’m not even sure that most of these eclipse words are officially in the dictionary, but they represent a mindset about an astronomy enthusiast who enjoys living in the shadows, that is the shadows of the moon falling onto the Earth’s surface, more commonly known as a solar eclipse, or witnessing the colorful splendor of the Earth’s shadows falling upon the full moon, darkening the landscape and reddening Luna to produce a lunar eclipse. • In the case of a total solar eclipse, you virtually have to chase it down, travel to a different part of the country or even the world to see two sunsets and two sunrises in one day. That’s because the moon’s shadow cone starts as the diameter of the moon, 2159 miles across, then narrows appreciably, reaching the Earth’s surface, with a breadth for a total solar eclipse between technically zero and a maximum girth of about 150 miles. The average width of the moon’s shadow falling onto the Earth’s surface, the umbra, is between 60 to 100 miles across. Most umbraphiles don’t chase down lunar eclipses because in a real sense they come to you. If the full moon is going to pass through the main shadow of the Earth, called the umbra, and the moon happens to be visible in your area of the world, you will have the opportunity of viewing it if weather conditions are cooperative. In fact, during the approximately 3.5-hour duration of a total lunar eclipse, parts of the Earth will rotate

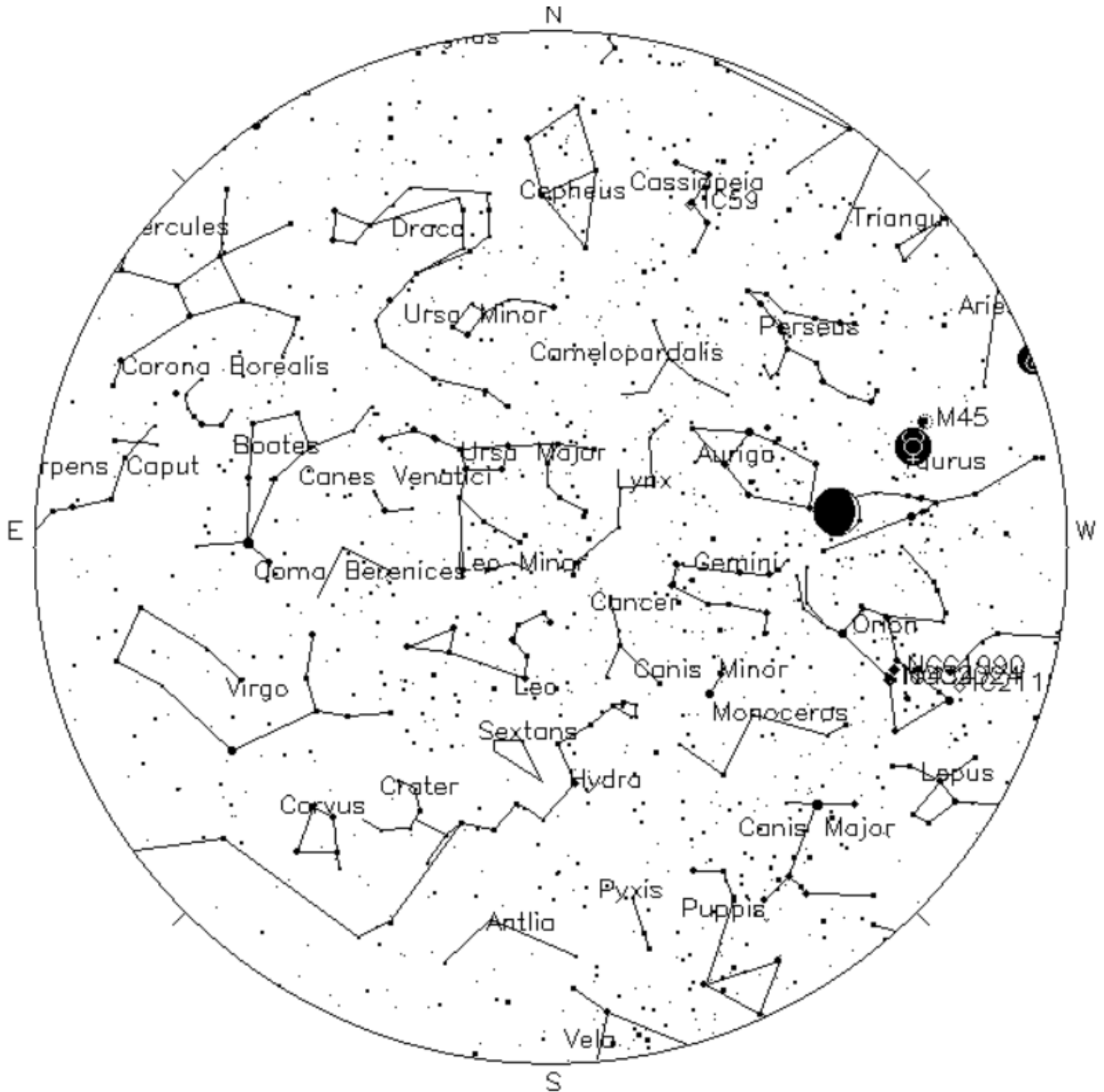
into and out of the eclipse zone increasing the chances of viewing at least part of the event. • The precision of the alignments is what always has intrigued me. My former teaching assistant, Peyton Zankel, in 2020 recorded a short video of my Moravian University class creating a scale model of a solar and lunar eclipse in the hallway outside of my classroom. The moon which I used was six inches in diameter, while a large inflatable Earth ball measured exactly two feet across. That ratio of sizes was perfect because the moon is approximately 2000 miles in diameter (2159 miles) while the Earth is about 8000 miles across (7917 miles). The moon had to be moved to a distance of 30 Earth diameters (240,000 miles) or 60 feet from the Earth. On average, the sun is roughly 400 times more distant than the moon is from the Earth. Its placement would be just under five miles from Moravian’s north campus where we were creating the scale model. A link to the video is [here](#). Why am I once again getting excited about eclipses? Simply, it’s because a total lunar eclipse is coming to the Americas, western Europe, and Africa starting on the evening of May 15 and continuing through the early morning hours of the 16th. We had a wonderful partial solar eclipse at sunrise on the morning of June 10, 2021, and a very deep partial lunar eclipse in the post midnight hours of November 19. • Now the stage is set for the first of two total lunar eclipses this year, May 15/16 and November 8. The partial phases of the May eclipse begin on the 15th at 10:27 p.m. EDT, totality at 11:29 p.m. through 12:54 a.m. on May 16, with the partial phases of the eclipse ending at 1:55 a.m. More about the May total lunar eclipse over the next two *StarWatch* blogs. Ad Astra!

Gary A. Becker -- beckerg@moravian.edu or garyabecker@gmail.com

Moravian University Astronomy - astronomy.org also facebook.com/StarWatchAstro/

Forward this *StarWatch* to a friend by clicking [Join](#)

Sky Above 40°33'58"N 75°26'5" Wednesday, May 4, 2022 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/>

MAY 2022

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

JUNE 2022

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
			01	02	03	Star Party 04
05	06	First Quarter Moon 07	08	09	Scout Camping at Pulpit Rock 10	Scout Camping at Pulpit Rock 11
Scout Camping at Pulpit Rock 12	13	Full Moon 14	15	16	17	18
General Meeting - 7:00 PM						
Fathers Day 19	20	Last Quarter Moon 21	22	23	24	Astro Imaging at SM 7pm 25
Deadline for submissions to the Observer						
LVAAS Board of Governors Meeting 26	27	28	New Moon 29	30		

2022 LVAAS EVENT CALENDAR

Contributed by Bill Dahlenburg

2022 LVAAS Event Calendar												
	Sundays				Saturday	Saturday	Mondays	Multi-Day Weekends	Moon Phase			
	General Meeting time	Date/location	Board meeting	Observer submission deadline	7:00 PM Astro Imaging	Star Parties	Scouts at S. Mountain	Scouts at Pulpit R.	New	First	Full	Last
January	3:00 PM	9 Muhlenberg/Zoom	30	23	no mtg	no mtg		no camping	2	9	17	25
February	3:00 PM	6 * Muhlenberg/Zoom	27	20	no mtg	no mtg		no camping	1	8	16	23
March	3:00 PM	13 Muhlenberg/Zoom	27	20	26	12			2	10	18	25
April	7:00 PM	10	24	17	23	9			1 30	9	16	23
May	7:00 PM	1 *	22 *	15	21	7			30	9	16	22
June	7:00 PM	12	26	19	25	4			29	7	14	21
July	5:00 PM	9/10 Picnic – S.M.	31	24	23	2			28	7	13	20
August	7:00 PM	13/14 Pulpit	28	21	20	6			27	5	12	19
September	7:00 PM	11	25	18	17	3			25	3	10	17
October	7:00 PM	9	30	23	15	1			25	3	9	17
November	7:00 PM	13	27	20	19	5			23	1 30	8	16
December	**	10/11	18 *	11	17	no mtg		no camping	23	30	8	16

* early due to conflicts

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

NEAF
 Cherry Springs S.P.
 Stellafane
 Black Forest S.P.
 MegaMeet

April 9-10
 June 2-5
 July 28-31
 May 27-29

Publishing images is a balancing act!

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

Put the quality in:

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

But watch the "waistline"!

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

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

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

The Observer is the official monthly publication of the Lehigh Valley Amateur Astronomical Society, Inc. (LVAAS), 620-B East Rock Road, Allentown, PA, 18103, and as of June 2016 is available for public viewing. Society members who would like to submit articles or images for publication should kindly do so by emailing *The Observer* editor, France Kopy, at editorlvaas@gmail.com. Articles submitted prior to the Sunday before the monthly meeting of the board of governors (please see calendar on website) will appear in the upcoming month's issue. PDF format is preferred. Early submissions are greatly appreciated. Articles may be edited for publication. Comments and suggestions are always welcome.

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

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