The Observer

The Official Publication of the Lehigh Valley Amateur Astronomical Society
https://lvaas.org/
https://www.facebook.com/lvaas.astro
June 2025
Volume 65 Issue 06

LVAAS General Meeting

Sunday, June 8, 2025, at 7 p.m. at South Mountain Headquarters

Heart of the Aurora

Experience the ethereal beauty of the aurora borealis in Iceland, where science meets spectacle. This program delves into the natural phenomenon of the northern lights, exploring their formation, scientific significance, and cultural importance. From Iceland's pristine landscapes to the vivid dances of light in the Arctic sky, uncover the mysteries of one of Earth's most mesmerizing displays. Join Gary Becker and Peter Detterline for an illuminating journey into the heart of the aurora.

presented by

Gary A Becker & Peter Detterline

Gary A. Becker has had a lifelong passion for astronomy, photography, and sky watching. As the director for 38 years of the award winning Allentown, PA School District Planetarium, and currently, Adjunct Professor of Astronomy at Moravian University in Bethlehem, PA, Gary has taught astronomy from the preschool to the graduate level under the electronic as well as the natural sky. An ardent traveler, Gary has hosted tours to observe and photograph comets and eclipses and has taken urban students to the Southwest to view the heavens from some of the darkest locales in the United States. He and his pupils volunteered as Night Sky Interpreters at Chaco Culture National Historical Park, NM and Bryce Canyon National Park, UT between 1999 and 2006. In 2012, he joined the Astronomy Team of the Mars Society where he helps to maintain and enhance the Elon Musk Solar Observatory and the MDRS Robotic Observatory at the Mars Desert Research Station near Hanksville, Utah, the latter of which supports the astronomy program at Moravian University. Gary A. Becker's half-century of amateur and professional interests in astronomy have provided him with a unique perspective for writing and teaching. He has authored the book that his Moravian astronomy students use, edited the national newsletter of the Astronomical League,*The Reflector*, founded (1996) and continues to maintain as an educational outreach the very visual website astronomy.org, and has for over a quarter century written a homespun, informative weekly column called *StarWatch* which is distributed to the Moravian College community and appears in 25 newspapers nationwide. Gary resides in Pennsylvania's beautiful Lehigh Valley with his wife, Susan, a retired English teacher who also enjoys writing, and their three spunky Dutch rabbits, "cerebral" Sagan, "T-Rex" Stella, and "princely little" Fynn.

Peter Detterline is an avid astronomer whose interests cover a wide range of the astronomical spectrum. For thirty-five years he was the Director of the Boyertown Planetarium, where he gave programs to over half a million people. He is a recipient of the Thomas Brennan award from the Astronomical Society of the Pacific for exceptional achievement related to teaching high school astronomy. He teaches an astronomy course at Montgomery County Community College, and for teachers through the Montana Learning Center.

In research he has coauthored numerous papers on eclipsing binaries and contributes data to the AAVSO, ALPO, IMO, and IOTA. He is the Observatory Director for the Mars Society where he heads up an astronomy team providing a solar and a robotic telescope for their members at the Mars Desert Research Station in Utah. He also provides training for a robotic telescope in New Mexico as the Lead Astronomer for the Montana Learning Center. Both robotic telescopes are used remotely by students around the world.

Peter was selected to be part of the "Astronomy in Chile Educator Ambassador Program" where he visited the largest American observatories in that country. As an amateur astronomer he has traveled the globe to view solar eclipses, built his own observatory, and has completed over 45 observing programs including the Astronomical League's "Master Observer". He is an honorary life member of the Lehigh Valley Amateur Astronomical Society (LVAAS).

When he's not staring at the heavens, Peter is preaching about them as a lay minister for the United Church of Christ. Astronomy for him is a deeply enriching experience that connects the heavens to the Earth.

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

Minutes from the LVAAS General Meeting – May 4, 2025

The May 2025 LVAAS general meeting was conducted electronically using an online service and in person at our South Mountain headquarters. Approximately 42 people were in attendance. Assistant Director Kyle Kramm opened the meeting at 7:00 p.m. Tonight's presentation was "Citizen Science, Variable Stars, and the AAVSO" featuring Dr. Brian Kloppenborg.

"Citizen Science, Variable Stars, and the AAVSO" introduced the exciting world of citizen science in astronomy, focusing on how you can actively contribute to scientific discovery. The talk covered engaging citizen science projects, such as those on Zooniverse, and collaborations like JunoCAM, IOTA, and SAS. It included a detailed look at variable stars, featuring examples such as SS Cyg, T CrB, and Cepheid variables, and highlighted recent discoveries, such as the Great Dimming of Betelgeuse and the newly discovered Iota Del. Finally, the talk introduced the AAVSO, its resources, and how you can start observing variable stars either visually or digitally.

Dr. Kloppenborg is an astrophysicist and entrepreneur currently serving as the executive director of the AAVSO. He earned a Ph.D. in physics with an astrophysics specialization from the University of Denver, and a B.A. in physics from Hastings College. Before joining the AAVSO, Dr. Kloppenborg worked as a research scientist at the Georgia Tech Research Institute, where he led multidisciplinary teams as a subject matter expert, lead engineer, product owner, and project director.

Dr. Kloppenborg's research focuses on combining photometry, spectroscopy, astrometry, and long-baseline optical interferometry to deepen our understanding of eclipsing binaries, novae, and young stellar objects. His work has been published in esteemed journals, including *Nature*, *The Astrophysical Journal*, and the *Journal of the AAVSO*.

Throughout his career, Dr. Kloppenborg has been dedicated to fostering collaboration between amateur and professional astronomers, advancing scientific discovery, and promoting educational outreach in astronomy.

After a short break, the meeting resumed.

Membership: Rich Hogg

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

  Girt Allerton

  Anku Aravind

  Janet Heimbach

  Zach Lentz

- The following members completed their first readings:

  Devon Smith (family membership with Jessica Zuber)

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

  Jennifer Klinger (family membership with Jody Klinger)

  Weston Kurtz (family membership with Ashley Medernach)

  Patrick Mackewicz

  Njklas Mueller

  Cooper Mulderry

General Comments:

- It was brought to the attention of the membership that a TV was purchased to replace the current projector being used at South Mountain.

South Mountain Maintenance – Bill Dahlenburg

- We are always looking for help. We are usually here on Saturday mornings to assist with your telescopes or to give you a tour of our facilities. Please contact Bill to confirm that someone will be there before arriving.

AstroImaging- Tom Duff

- Our next meeting will be on Saturday May 17, 2025 at South Mountain at 7:00 p.m.

StarGazers- Kyle Kramm

- Our next meeting will be on Friday May 9, 2025 at South Mountain at 7:00 p.m. Our meeting topic is not yet determined.

Next General Meeting:

- The meeting was adjourned at approximately 8:40 p.m.
- The next general meeting will be held at South Mountain on Sunday June 8th, 2025 at 7 p.m.
- The May general meeting was recorded.

Submitted by Beth Julius, Secretary

South Mountain Maintenance Director Bill Dahlenburg takes a short break from mowing

Via Sandy Mesics, Programs Chairperson

Upcoming LVAAS General Meeting Speakers

June: **Gary A. Becker** and **Peter Detterline** will speak in person, on "The Heart of the Aurora"

July: **Linda Prince** will speak in person; topic TBA.

August: **Brett Fadem** and **Jonathan Cuadra** will speak in person; topic TBA.

September: **Joe Zitarelli** will speak in person on "The Expanding Universe."

October: **Mike Huber** will be back in person to do "1913 Astronomy, Part 2"

November: **Ray Harris** will speak on "Meteorites."

December: **available**

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

THANK YOU, LVAAS VOLUNTEERS!

LVAAS Star Party Director **Aidan Berger** thanks the following for their help with the May Star Party and Scout Planetarium Show: **Earl Pursell, Bill Dahlenburg, Linda Prince, Girt Allerton, Bill and Ruth Lodder, Kyle Kramm, Tom Duff** and **Phillip Doherty**. **Mike Clark** thanks **Earl Pursell** for helping with rentals. LVAAS also thanks **Beth Julius** for her work as LVAAS secretary,and **Tom Julius** for his help with MegaMeet. Kudos!

Via France Kopy, Newsletter Editor

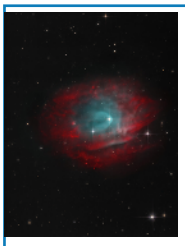
Please welcome our new Astroimaging Editor, **Tom Duff!** Tom is the director of the LVAAS Astroimaging group, and will be accepting astroimage submissions, and/or recommending them for our newsletter. If you're a member of the astroimaging group, or an imager who is an LVAAS member and would like to share your work in our newsletter, please contact Tom at duffmeister@rcn.com, or just click his name on our website's Contacts page.

Via Benjamin Long, LVAAS Director

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

Via Earl Pursell, UACNJ Liason

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



cover: **Abell 35**

Imager: **Dan Stern**

Planewave CDK-24

Planewave L-600 mount

Moravian C5-100 camera

Chroma 3nm Ha and Olll, RGB

Data capture – NINA

Processing – Pixinsight

Ha Olll RGB (422,357,16,15,14) x 300 sec

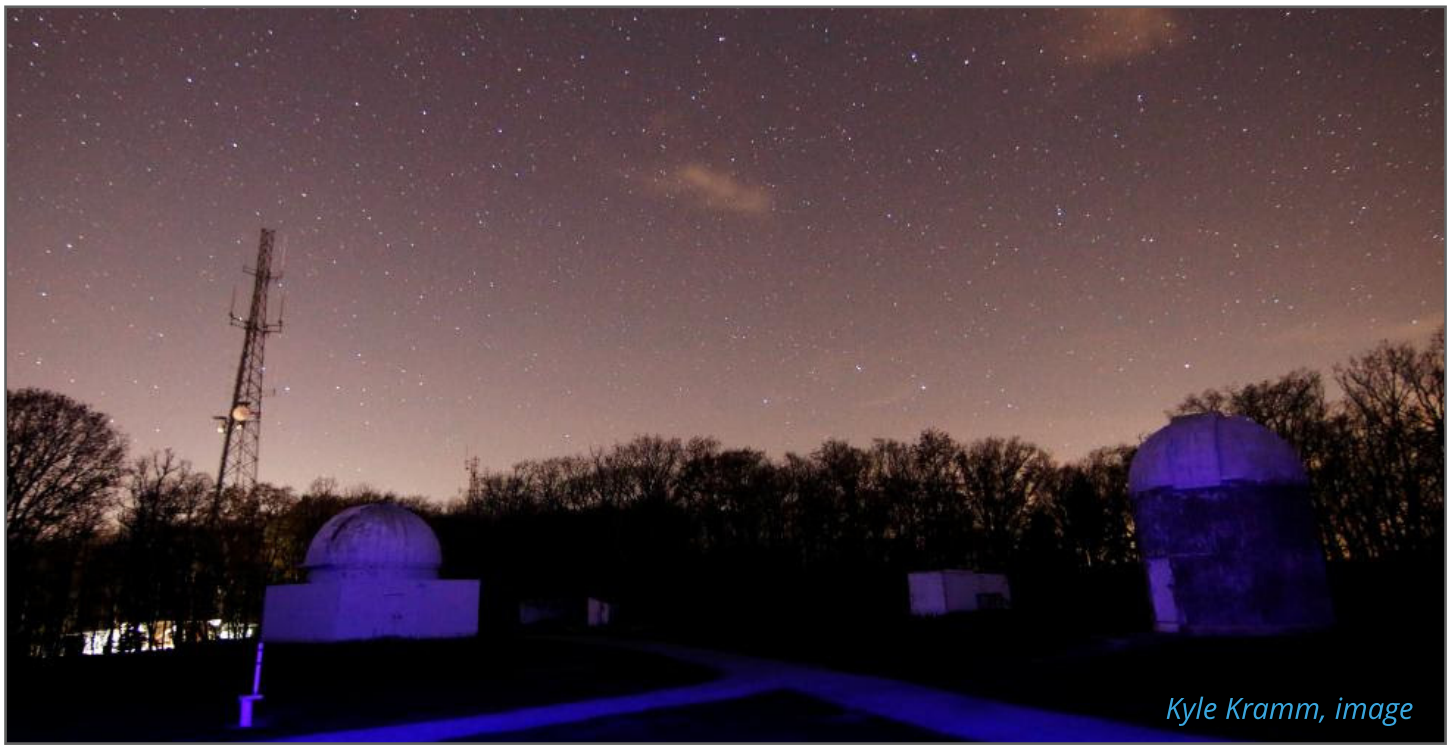
Total integration time 68.7 hours

Rio Hurtado, Chile

This is Abell 35 which, up until 2010, was thought to be a planetary nebula. It has some unusual properties that called into question its planetary nebula classification. In the center of the image there is a teal-colored parabolic bow-shock wave structure with a bright star at its tip. Scientists determined that that star was of a type that was not hot enough to ionize the nebula (that's what would make it a planetary nebula). It was eventually determined that Abell 35 was formed from a binary pair of stars and that the wind from those stars formed the bow-shock feature. Abell 35 is moving through space at 10 times the speed of sound giving rise to a shock wave that created the red (Ha) linear structures shown in the image. The 2010 study revealed that Abell 35 is actually a Stromgren sphere. A Stromgren sphere is a region of ionized hydrogen gas (H_2) surrounding a hot, young star, typically an O- or B-type star. The intense ultraviolet radiation from the star ionizes the surrounding interstellar hydrogen, creating a roughly spherical zone of plasma. - Dan Stern

LVAAS MegaMeet 2025 Announcement

June 27-29, 2025



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

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

Telescope Training: **Frank Lyter** and **Ron Kunkel** will be on hand to train members on our club's telescopes June 27 and June 28.
Rain Date August 8-10; please check lvaas.org
Location: Pulpit Rock Astronomical Park
Contact: 610-797-3476

Scan the QR code ➡
to add this event to your calendar.

Hope to see you there!

LVAAS Congratulates Adam Binder for Achieving the Rank of Eagle Scout

What an absolutely wonderful day Sunday, May 18, 2025, was! It was the day that LVAAS Life Member Matthew and Susan Binder's son, Adam was formally acknowledged in the presence of his family, friends, and Scouting America troop for his achievement of the Eagle Scout rank.

Troop leadership positions Adam has served in during his walk along the trail toward Eagle Scout include Patrol Leader, Assistant Patrol Leader, Troop Librarian, Assistant Senior Patrol Leader, Order of the Arrow Representative, and two terms as his troop's Senior Patrol Leader. Adam was selected to serve in the Order of the Arrow, Scouting America's Honor Society, by his Scout peers. Adam was given deserving praise for all the work he had done to reach the highest rank in Scouting America, and was additionally honored with the presentation to him of a Bronze Palm and a Gold Palm to pin onto his Eagle Scout medal to indicate the additional merit badges he has earned over the 21 merit badges required for Eagle Scout. To date Adam has earned 35 merit badges.

For Adam's Eagle Scout Project, he gave back to his middle school by reopening and improving a nature trail that runs from the school's parking lot down to a creek. It is his hope that the students of the school will use the trail to learn about nature and the environment. After his final Scoutmaster's Conference, Adam completed his Eagle Scout Board of Review on February 24, 2025.

As Adam traveled along the upward trail toward Eagle Scout, he crossed the several bridges that transformed him from being a young boy into the outstanding young man of extraordinary character who stands among us now as an Eagle Scout. Adam is to be congratulated for reaching the highest peak of the trail to Eagle Scout though his diligence and hard work. May the qualities that inspired him to accomplish this great achievement continue to lead him on to even greater success in his life.

Article submitted by Adam's very proud grandfather,
LVAAS Life Member, Dave Binder.

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

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

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

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

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

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

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

Peter Detterline's

Night Sky Notebook

May 2025

While you're here,
why not subscribe?

Renaissance Man: Walter Leight, Part 2

By Sandy Mesics

This is part 2 of the story we began in the May 2025 Observer *about the remarkable Walter Weaver Light. We pick up his story in 1958, when he joined LVAAS.*

On July 12, 1958, Leight joined LVAAS. Jumping right in as an active member, Leight filmed the construction of the South Mountain headquarters. These films are available on our website. Leight even chartered a small plane and shot aerial photos of the construction.

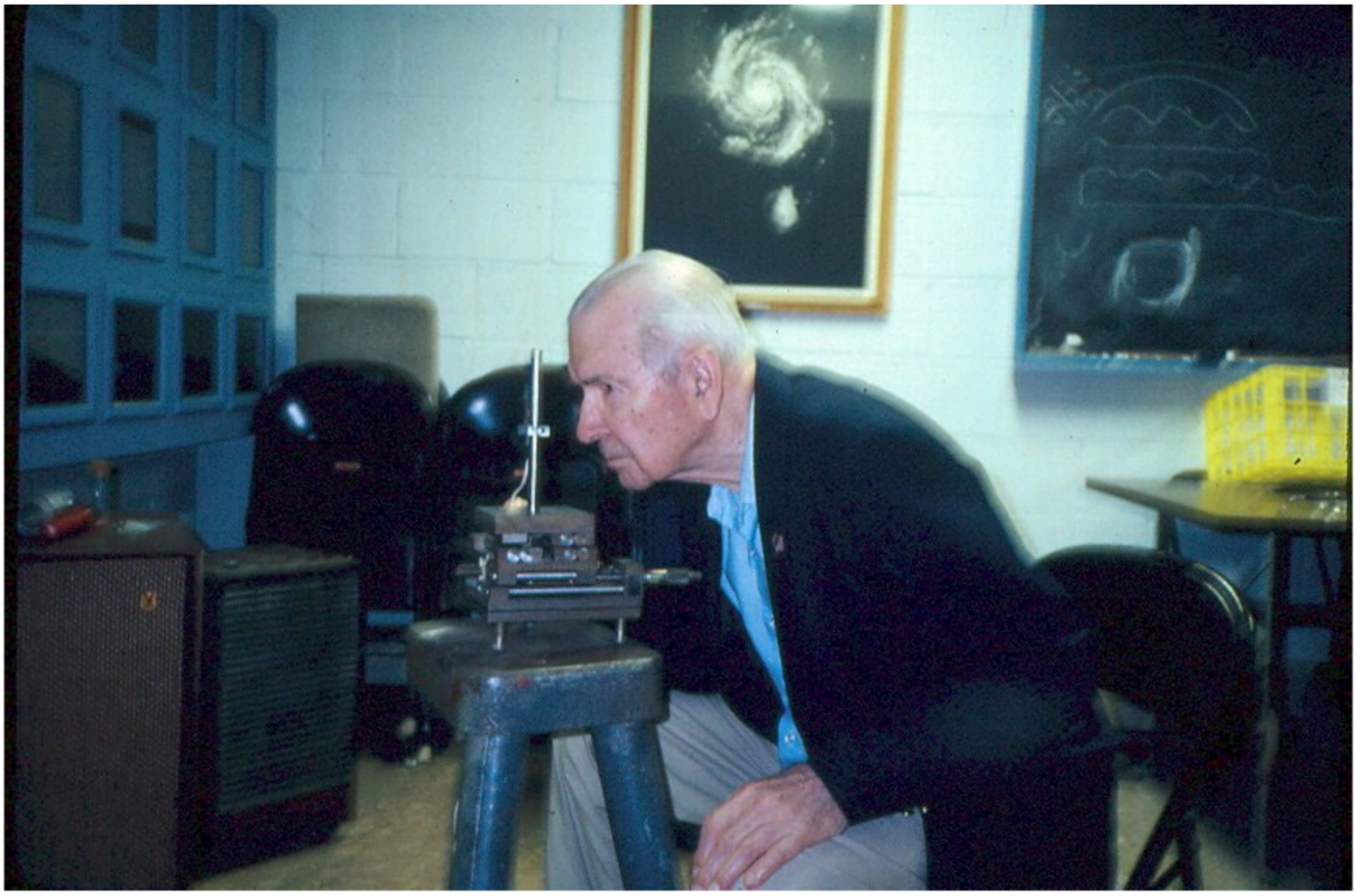
He hosted LVAAS members at his home twice. One of those meets made the cover of *Sky and Telescope* Magazine. Leight also produced *The Satellite*, the club's first newsletter. In September 1958, Leight gave a talk about American telescopes at the LVAAS meeting, and in January 1959 he showed the group films of the work being done to construct the LVAAS headquarters.

Leight's telescopes displayed outside his Saturn Observatory.

In April 1959, Leight broke ground in his back yard for Saturn Observatory. It had two rooms, each 12 feet square, and a 12-foot by 24-foot terrace onto which scopes could be rolled out. The observatory had a 12-foot dome with a slit 32-inches wide. LVAAS members participated in the construction and in 1960 had an all-night session there at which 18 LVAAS members attended.

Meanwhile, in 1959 Leight was named director of photoengraving research for the Sandura Company in Fullerton where he had worked since 1946, and in 1960 he became a research engineer with Sandura.

No doubt inspiring other LVAAS members, Leight presented "At the Eyepiece" at the June 1960 LVAAS meeting, during which he showed 300 slides of his observatory, as well as photos of the planets and the moon he had taken.

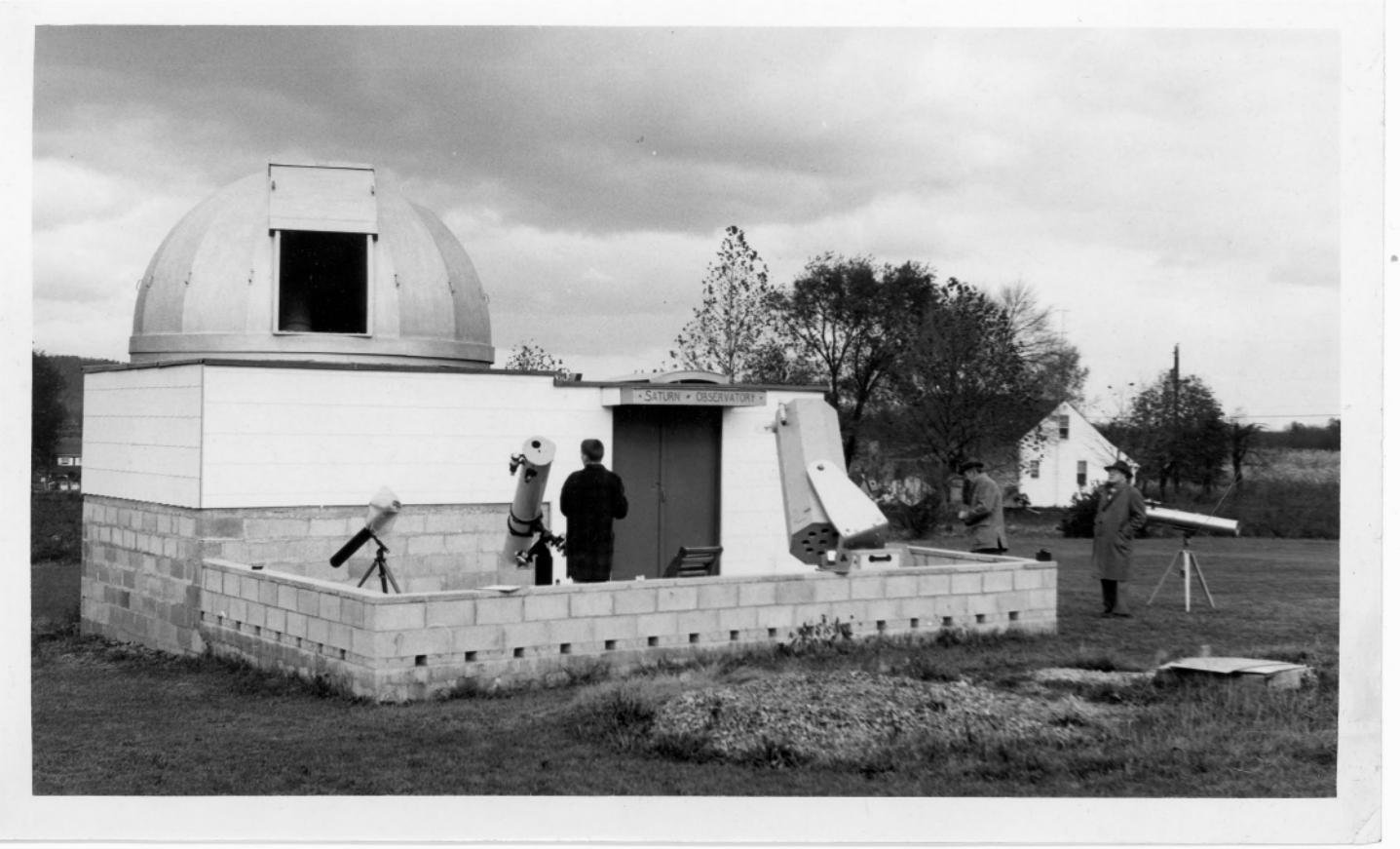


Leight testing a mirror at LVAAS South Mountain headquarters.

Leight observed often during 1960 and that year he attended his first Stellafane Convention in Vermont. That year, there was a transit of Mercury, and Leight hosted 12 LVAAS members and professor Ralph Van Arnam from Lehigh University to observe the event from his back yard. Again, in 1961 Leight hosted 35 LVAAS members for a star party. In those days Center Valley was not so light polluted, and his home offered amenities that the LVAAS headquarters lacked. As well as his observational activities, Leight was a prolific instrument maker. He discussed plans for a 50 to 60-inch Cassegrain telescope "with a lightweight, built-up metal mirror."

On November 27, 1965, Leight was observing near the Pleiades when he saw a UFO which he described as "… a medium bright, perfectly round disc about 1/3rd the apparent diameter of the full moon to the naked eye and of a pinkish-neon color, moved across the field in a north-south direction at moderate speed. It seemed to have a trace of limb shading." (*Observer,* June 1975)

In August 1972 Leight donated his 19-inch telescope to LVAAS, saying that "With a reworked primary it should be useful." Unfortunately, that scope has languished at South Mountain for more than 50 years. Meanwhile, Leight continued to make telescopes and revamp the ones he had already completed.



Observing at Leight's Saturn Observatory. Note the 19-inch reflector to the right of the doors.

In 1975 Leight retired from the GAF Corporation after 29 years. Immediately after retirement, no surprise, he constructed more telescopes, rebuilt the dome on his observatory and made six violins and one viola. In May 1983, Leight wrote an article for the *Observer* entitled "Practical Optics." In it he discussed making eyepieces, folding long-focus refractors, how to find quality optics at flea markets, and using projector lenses as eyepieces.

Leight's wife Clarissa died at the age of 77 June 9, 1992. In 1996, Leight suffered the first of a series of strokes. His daughter Gloria moved in with her father as a caregiver in 1998. "My father was an astronomer and a violinmaker. He built the house that we're in. To have such a wonderful dad not be able to tie his own shoes… it makes you angry because you're not the kid anymore." (Morning Call, 3/5/2000) Eventually, Leight was moved into a nursing home, and he died at the age of 90 on January 28, 2000. There is little doubt that his legacy was his contribution to the continued success of our Society.

References

LVAAS *Observer*, June 1975, May 1983, March 2000.
Allentown *Morning Call,* March 5, 2000.

The Whale Galaxy, NGC4631 (upper) and the Crowbar, or Hockey Stick Galaxy, NGC4656 (lower) in the constellation Canes Venatici. Above the Whale is a dwarf elliptical galaxy, the Puff, NGC4627. The Puff is whimsically seen as emerging from the Whale's blowhole. This image was acquired with a pier-mounted Seestar S50 smart telescope from North Whitehall Township, PA on April 27, 2025. It is composed of 180 10-second subframes for 30 minutes total exposure. Capture by David Moll. Processing by Paul Tracy (PixInsight) and David Moll (Photoshop).

StarWatch

Northern Lights: The Definitive Guide to Auroras

Northern Lights: The Definitive Guide to Auroras, written by Tom Kerss, HarperCollins Publishers, Dublin, 2021 (Amazon new, $15.95) is an excellent guide to understanding the history, causes, forecasting, chasing, and photography of the aurora borealis, the name that Galileo gave to a shimmering light display that he may have witnessed from northern Italy in 1607. I never considered that Galileo, Edmond Halley, Anders Celsius, and Anders Angstrom, among dozens of other less prominent scientists, influenced the advancement of auroral science long before the process was generally understood. For example, Angstrom was the first to isolate the spectral lines due to hydrogen in the sun. He also identified the wavelength of light that produced the lime green appearance of auroras seen predominantly at high latitudes. * The connection of the Earth-sun magnetic relationship in auroral activity is an underlying theme stressed throughout the book. If the movement or positioning of charged particles like electrons is regimented, a magnetic field results; however, strong magnetic fields cause charged particles to spiral around them and be carried away from the source that created them. This symbiotic relationship is the backbone for auroras. The sun and the Earth produce strong internal electrical currents, and their resultant magnetic fields play on one another. The problem is getting these particles to escape from the sun and then interact with the Earth's magnetosphere, the magnetic field surrounding our planet. * Enter solar flares, but more importantly, coronal mass ejections CMEs), which are often linked to each other. Magnetic field lines that normally loop energetic electrons and protons (plasma) back into the sun are suddenly broken, then reconnect, propelling vast amounts of plasma into space. The plasma, captured by the sun's magnetic field, pinwheel these charged particles outward into space, where they may eventually interact with Earth's magnetic environment. * Penetrating Earth's protective magnetosphere is tricky and not persuasively addressed in Kerss' *Northern Lights*, possibly because these mechanisms are still not fully understood. Once inside, however, the plasma rapidly migrates to Earth's intensely magnetic Van Allen Belts, where the electrons and protons race back and forth from magnetic pole to pole at relativistic speeds. This plasma eventually drops into Earth's ionosphere, where the electrons perform the lion's share of the work, causing primarily oxygen atoms to fluoresce (glow), creating the upper atmospheric reds and lower altitude greens that are so familiar to the observed colors of auroras. * Also addressed by *Northern Lights* are methods of predicting auroral events, including what latitudes can expect an active display. The local Kp (planetarische kennziffer) index, a numerical value between zero and nine, is created by compiling data from magnetometers in the US and Canada. They detect the direct flow of electrons from space into the ground and are probably the most reliable indicator of an auroral spectacle. Plasma speed, density, the interplanetary magnetic field strength, and the polarity of the incoming plasma also bear serious scrutiny. These factors contribute to creating a real-time forecast, but even this might not guarantee a display where you live. * I found Kerss' advice spot-on regarding traveling to specifically witness the northern lights. Stay focused, be patient, and be your own boss. Unless necessary, avoid group trips, which often have a carnival-type atmosphere created by less serious participants. Pete Detterline and I witnessed this on our last night in Iceland, and it was distracting, to say the least. Search for appropriate landscapes to enhance imagery, consider the lunar phase, and pray that the trifecta of Earth, sun, and weather will cooperate. * All in all, *Northern Lights* provides an excellent introduction to the auroral phenomenon and a primer for enthusiasts to enhance their odds of viewing one of nature's most awe-inspiring marvels. Ad Astra!

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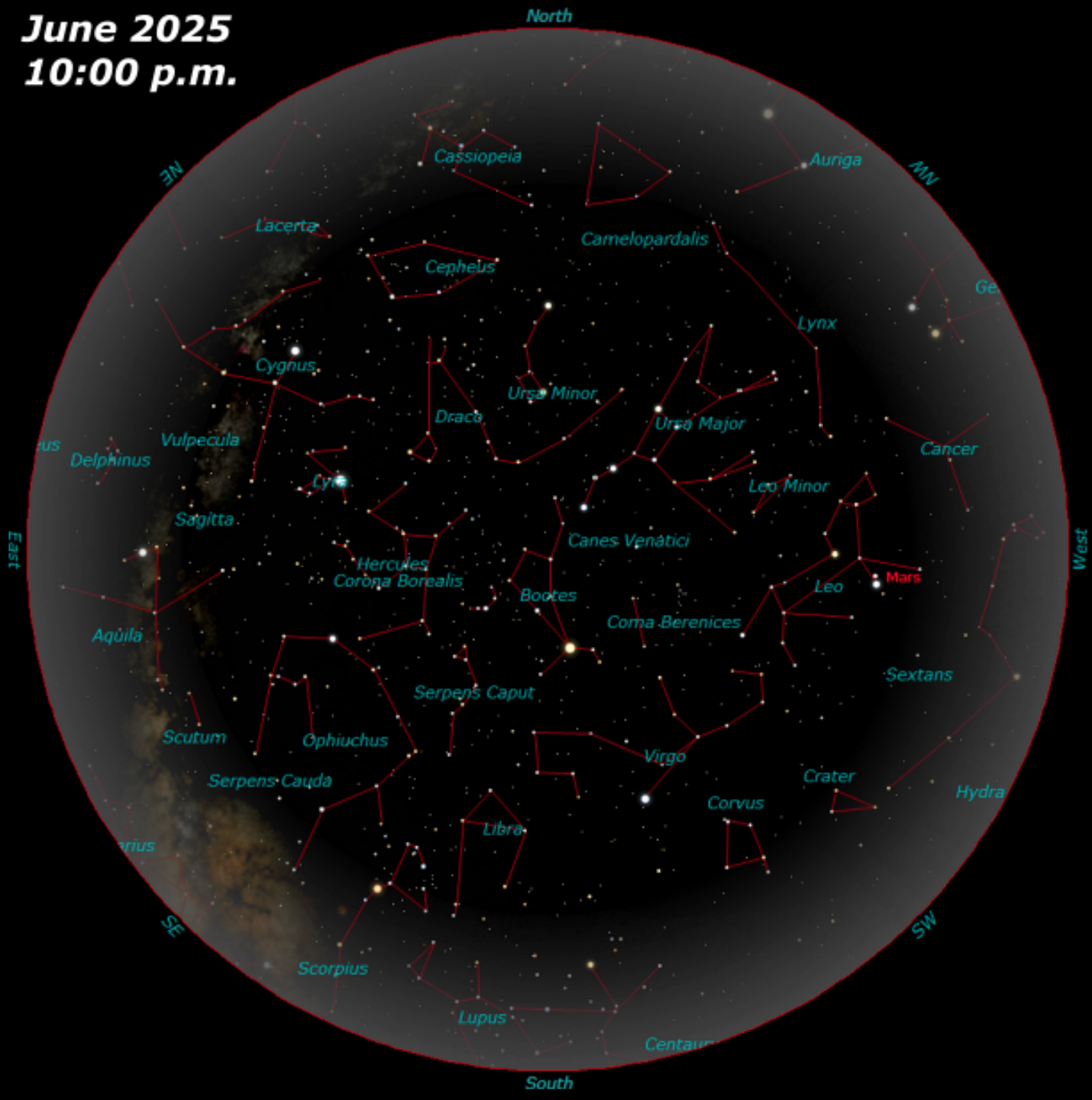
Moravian University Astronomy - astronomy.org



For access to more features, please click here
then click 'June' in the index

Contributed by Gary A. Becker

JUNE 2025

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

JULY 2025

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
		01	First Quarter Moon 02	03	Independence Day 04	Star Party 05
06	07	08	09	Full Moon 10	Stargazers Group Meeting 11	General Meeting/Picnic 5:00 PM South Mountain 12
General Meeting/Picnic 5:00 PM South Mountain (Rain date) 13	14	15	16	Last Quarter Moon 17	18	Astroimaging Meeting - 7:00 PM 19
Deadline for submissions to the Observer 20	21	22	23	Stellafane Convention 24	Stellafane Convention 25	Stellafane Convention 26
Stellafane Convention 27 LVAAS Board of Governors Meeting	28	29	30	31		

2025 LVAAS EVENT CALENDAR

Contributed by Bill Dahlenburg

2025 LVAAS Event Calendar

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

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

NEAF	4/5 – 4/6
Mega Meet	6/27-6/29
CSSP	6/19 – 6/22
Stellafane	7/24 – 7/27
BFSP	

Publishing images is a balancing act!

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

Put the quality in:

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

But watch the "waistline"!

- Don't go too much above 400 pixels/inch max.
- Use the lowest JPEG quality that still looks good!
- Shoot for 400kb for a 1/2 page image or 1MB for a full page.

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

https://imageresizer.com/resize/download/6779bd945d63ac1a3032f37d

It will also tell you the pixel size and file size of your original, even if you don't download the processed copy.

The Observer is the official monthly publication of the Lehigh Valley Amateur Astronomical Society, Inc. (LVAAS), 620-B East Rock Road, Allentown, PA, 18103, and as of June 2016 is available for public viewing. Society members who would like to submit articles or images for publication should kindly do so by emailing *The Observer* editor, France Kopy, at observer@lvaas.org**.**

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

Articles submitted prior to the Sunday before the monthly meeting of the board of governors (please see calendar on website) will appear in the upcoming month's issue. Early submissions are greatly appreciated. PDF format is preferred. Articles may be edited for publication. Comments and suggestions are always welcome.

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

Every effort will be made to properly credit the sources of the material used in this publication. If additional credit is required, please notify the editor.

If you are interested in becoming a member of LVAAS, please visit our membership page for information on applying. Existing members please update your LVAAS profile information by emailing the membership director at membership@lvaas.org .