

The Observer

The Official Publication of the Lehigh Valley Amateur Astronomical Society

<https://lvaas.org/>

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October 2024

Volume 64 Issue 11





Nominees for LVAAS Office for the 2025 Term

Nominations for LVAAS officers was closed at our September 8th membership meeting at our South Mountain Headquarters.

LVAAS full members in good standing (current dues paid) are entitled to vote at our October 13, 2024 General Meeting on Sunday at 7 p.m. Nominees are:

Director: **Benjamin Long** - second term

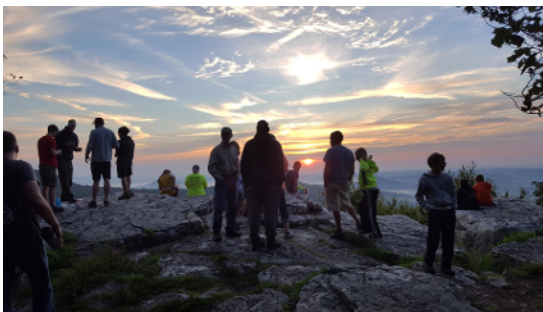
Assistant Director: **Kyle Kramm** - second term

Secretary: **Beth Julius** - first term

Treasurer: **Vo Maziarz** - second term

Installation of newly elected officers will take place at our December General Membership meeting.

Bill Dahlenburg - Nominating Committee Chairman
sm_maintenance@lvaas.org



Via Sandy Mesics, Programs Chairperson

Upcoming LVAAS General Meeting Speakers

October: Mario Motta will speak via Zoom on "Building a 32-inch Telescope and Observatory"

November: Dave Moll will speak on "Lore of the Ancient Skies"

December: Emma Page (Lehigh U) will speak on "Transits and Eclipsing Binary Stars"

- ▶ Please contact astrosandy@gmail.com if you have ideas for speakers, or would like to volunteer.

Via Bill Dahlenburg, Nominating Committee Chairman

Nominations are now closed and the slate of nominees will be formally voted upon by the LVAAS membership at our October 13 General Meeting at 7 p.m. at South Mountain Headquarters. Please try to attend and vote!

Director: Benjamin Long

Assistant Director: Kyle Kramm

Secretary: Beth Julius

Treasurer: Vo Maziarz

KUDOS! THANK YOU, LVAAS VOLUNTEERS!

Recently LVAAS Director **Ben Long** assembled a crew consisting of **Ron Kunkel**, **Mike Clark** and **Frank Lyter** to pick up a (very large) telescope that was generously donated to us by Mr. George Humber. Kudos to the crew and a big 'thank you' to Mr Humber!

A big 'thank you' also goes out to **Paul Tracy** who created and conducted a 3-hour training course on Astroimaging in coordination with Education Group Director **Blaine Eastwood** recently. LVAAS is very proud of its imagers, and is looking forward to seeing the work of some new faces. Kudos to Paul and Blaine for their efforts to move LVAAS imaging into the future!

via Peter Detterline, Night Sky Notebook Contributor

Peter sends along this video he took of the Aurora borealis in Iceland, where he and Gary Becker are currently visiting. Check it out: https://www.youtube.com/watch?v=_Ao-SU88-MM

Via Earl Pursell, UACNJ Liason

Public Program Nights have resumed at United Astronomy Clubs of New Jersey; please visit uacnj.org for info.

Via Earl Pursell,

Penn Museum will be hosting a 5 part virtual astronomy class - "Deep Dig: Celestial Skywatchers" starting on Oct. 3. For more information and to register please use [this link](#).



cover: M20 (the Trifid Nebula) and M21 (Webb's Cross) Imager: Gary Schuster

Telescope - New Askar 103 APO 700 f/1 at f/6.8 **Camera** - ASI294MC pro **Mount** - Losmandy GM8
Communication was done with ASIAir and a tablet. **Filter** - Duo Band filter Ha & OIII Processing - Siril
42 lights and 10 darks at 180 sec. exp., no flats or bias. Captured from Gary's backyard 9/2-9/3 2024.

LVAAS General Meeting

Sunday, October 13, 7 p.m. at SMHQ *Speaker is via Zoom*

"Construction of a Home Observatory and 32-inch F6 "Relay" Telescope"

presented by

Mario Motta, MD



"I have been constructing and building telescopes since I was a teenager. Over the years I have built 3 observatories, 2 separate 32-inch telescopes, and a trailer-mounted 16-inch F6.3 telescope. My latest, built into my home, is a 32-inch F 6.5 relay scope with a spherical primary, a Mangin secondary, and 4 corrector lenses, that gives me a usable 30 arc minute field of view, that has a flat field, no aberrations, and no color distortion as well. I enjoy doing astronomical research with this instrument as well as observing and general deep sky imaging. The 20-foot dome was also completely homemade. This telescope was featured in Sky and Telescope in May of 2011. It has also been featured in the New York Times, Boston Globe and other periodicals."

Dr. Motta had been in practice at North Shore Medical Center in Salem, Massachusetts since 1983, recently retiring in 2022. He is a graduate of Boston College, with a BS in physics and biology, and of Tufts Medical School. He is board certified in Internal Medicine and Cardiology, and is a fellow of the American College of Cardiology, and of the American Society of Nuclear Cardiology. He is an Associate Professor of Medicine at Tufts University School of Medicine. Dr. Motta has long been active in organized medicine, both in the American Medical

Association (AMA) and in the Massachusetts Medical Society (MMS), holding a number of posts through the years. He is a past President of the MMS. He was elected and served 8 years on the AMA Council of Science and Public Health, and then was elected to the Board of Trustees of the AMA in 2018, recently completing his term. In May of 2023 at its annual meeting, the MMS awarded Dr Motta its highest honor, the "Award for Distinguished Service."

Dr Motta also has a lifelong interest in astronomy, and has hand built a number of telescopes and observatories through the years to do astronomical research, including his entirely homemade 32-inch F6 relay telescope located in Gloucester, MA. He has been awarded several national awards in astronomy, including the Las Cumbras Award from the Astronomical Society of the Pacific in 2003, and also the Walter Scott Houston award from the northeast section of the Astronomical League, and in 2017 the Henry Olcott Award from the American Association of Variable Star Observers (AAVSO). He has served as a president of the ATM's of Boston, and has served as a council member of the AAVSO, and is a past president as well. He has also served on the Board of the IDA. He has worked on light pollution issues, and published several white papers on LP as a member of the AMA Council of Science and Public Health. He served on a UN committee (COPUOS) representing the AMA on light pollution for a worldwide effort to control LP and satellite proliferation. Finally, several years ago the International Astronomical Union awarded Dr Motta an asteroid in part for his work on light pollution as well as amateur research, asteroid 133537MarioMotta.

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



Minutes from the LVAAS General Meeting – September 8, 2024

The September 2024 LVAAS General Meeting was conducted electronically using an on-line service and at the South Mountain headquarters. Approximately 45 people were in attendance.

LVAAS Secretary Joe Zitarelli opened the meeting at 7:02 p.m.

Tonight's General Meeting's presentation is *Occultation Timing: New and Improved* Featuring Steve Conard. Steve Conard has been an amateur astronomer for more than 50 years. His love of telescope making as a teenager turned into a 42 year career working for the Johns Hopkins University developing optical systems as an optical engineer. Most of his career was spent working on NASA astrophysics and planetary missions. This includes being in the role of lead engineer for the LORRI camera on the New Horizons mission to Pluto for more than 20 years. Mostly retired and now living in Wellsboro, PA, Steve recently founded the Pennsylvania Wilds Astronomy Club. He regularly volunteers at several Pennsylvania State Parks and is working to control light pollution in the Wilds by working with several advocacy groups. His other interests include hiking, rail trail biking, and his antique motorcycle.

Occultation timing has been used for several decades to measure the size and shape of asteroids, producing chord accuracies in the 100 meter range from distances of several AU. Many amateurs have tried this, but given it up due to the difficulty in collecting data and the rarity of high probability events. In the past several years, a number of advances have been made which have greatly decreased the barriers to success. This talk will give the basics of occultation timing, with an emphasis on the tools that are responsible for generating nearly four times the data than five years ago. The latest hardware will be shown along with results of recent observations.

An occultation is when one object is hidden by another object that passes between it and the observer. Occultations can be lunar, planetary, or asteroid. There can be multiple observers as the path crosses the earth. We use the timing of occultations of asteroids as they pass in front of stars to measure the size and shape of the object. This requires many observers. It is also used to measure precisely the location of the object. This is a way for amateur astronomers to get involved in citizen science. It is relatively inexpensive and can be done part time. Your results may be part of a published paper for which you will be recognized.

Much is new and has been improved in recent years. There is greater ability to predict when occultations occur. The cost has been lowered, and the equipment is easier to use to collect data. There is also updated data analysis software. A big problem is the need for more observers. More observers leads to more data which is needed as we are now seeing smaller asteroids than before. By combining timing and light curve data, astronomers can get details of the object's shape.

Sometimes you can be involved in an unexpected discovery. Steve collected data on the asteroid Agamemnon when it occulted a star. He noted a second drop in the star's brightness. When the data was analyzed he had found a satellite of the asteroid between two and four kilometers across. Sometimes it is discovered that a star is actually a double star.

To date, professional-amateur campaigns have:

- Identified 2 rings around asteroids
- Studied planetary atmospheres
- Helped to improve on the accuracy of positions:
 - New Horizons mission for Arrokath flyby
 - LUCY mission for the asteroid Polymele
 - DART mission - from study of Didymos position could determine slowed rotation

The following is needed to observe occultations:

- Advance knowledge of when it will occur
- Prediction software such as *Occult Watcher*
- Accuracy of 0.1 Arcsec
- Can build your own system using a camera with added timing flashers that will cost \$60-100?
- Pre-built data collection hardware from IOTA for \$695
- For analysis and reporting will need to convert to AVI format
- Newer analysis software

The International Occultation Timing Association (IOTA) publishes a Journal and provides software. The cost of membership is \$25 annually and includes an annual Zoom conference. To get recognition from the Astronomical League Observing Program you must submit your data through IOTA.

When Steve checked the predictions for South Mountain he noted that between the night of this presentation and October 15, 2024 there will be three visible occultations. By traveling to different locations, he routinely gets the opportunity to observe 6-10 in an average month. There tend to be more in the winter months.

In summary:

1. The number of occultations has greatly increased
2. There are higher numbers with smaller size
3. More observers are need

If interested you can contact Steve Conard by email at astro@ptd.net

After questions were taken and answered, a break was taken at 8:26 p.m.

The informational meeting resumed at 8:40 p.m.

Membership: Rich Hogg

- The following member completed their second readings and is now a full member:
Leroy Kromis
- The following members completed their first reading:
Janine Bonham (family membership)
Garrett Tow
- The following members have previously completed a first reading and are still eligible to complete a second reading to become full members:
Stephen Huber
Theodore Opperman
Miretta Wadopian
Michael Williams

Nominating Committee:

The Nominating Committee has proposed the following slate of nominees for LVAAS officers for 2025

Director: Benjamin Long

Assistant Director: Kyle Kramm

Secretary: Beth Julius

Treasurer: Wojciech Maziarz

For those in attendance or viewing online, it was questioned whether there were any further nominations. There being no further nominations, the slate of nominees put forward by the nominating committee was accepted without changes.

Education – Blaine Easterwood

- We will be holding Astro-Imaging 101 on Saturday from 9 a.m. to noon at South Mountain. This is open to all members interested in getting started in astroimaging. Please send an email to education@lvaas.org if you would like to attend.
- Space Fest will be held at Lafayette College on the weekend of October 12 and 13. More information will be sent out via email on Outreach Groups.IO. Please contact Blaine if you would like to help out.

Pulpit Rock Observatories – Frank Lyter

- After tonight's meeting we will be testing of our newest donated telescope, an 18" Dobsonian telescope, that is here in the front of the planetarium.

Star Party - Earl Pursell

- The next Star Party is September 14 which is also International Observe the Moon Night.
- We are expecting a group from Northampton Community College to attend.

Stargazers - Mike Clark

- The next Stargazers group will meet at South Mountain on Friday September 13 at 7:00 p.m. This is like a Star Party that is geared towards new members to help them learn the night sky and how to use their own telescopes.

General Comments

- The next Astro-Imaging meeting will be Saturday October 5 at 7:00 p.m. at South Mountain. All are welcome.
- South Mountain is usually open for visitors on Saturday mornings from 9 a.m. until noon. This is an opportunity for you to get a tour, view the sun through a solarscope and be trained on the telescopes that are mounted or in the rental fleet. Contact Bill at sm_maintenance@lvaas.org

Library - Joe Zitarelli

- We are continuing to view Adventures in Astronomy, an online course in Astronomy, every Tuesday night at South Mountain at 7:30 p.m. through September 17, 2024. The topic for each night is listed on the calendar.

Next General Meeting:

- The next General Meeting will be held at South Mountain and over Zoom on Sunday October 13, 2024 at 7:00 p.m.

The September 2024 General Meeting was recorded.

The meeting was adjourned at approximately 9:07 p.m.

Submitted by Joe Zitarelli, Secretary

Education and Outreach News and Opportunities

These are exciting times! In addition to finishing up the “Adventures In Astronomy” course over the summer (thanks Joe Zitarelli), we have a beginners Astro-Imaging Course and great community event coming up over the next two months. I look forward to more cool and interesting things in the months to come!



Lehigh Valley Space Fest! (October 12 & 13)

We need your help!

LVAAS is participating in the Lehigh Valley Space Fest again this year and we need volunteers to help us. We are looking for people to:

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

The event is **Saturday and Sunday from 10 a.m. to 4 p.m.**

We would greatly appreciate any time that you can volunteer, even if it's for only an hour or two,.

This is a great opportunity to share your energy, experience and astronomy knowledge with the general public.

The event is at Lafayette College this year. More details are available at the Lehigh Valley Space Fest Website: <https://www.lvspacefest.org/home>

For more information, or to be an LVAAS volunteer, please contact any member of the Education committee (Linda, Joe, Mike, or Blaine) at education@lvaas.org.



The Veil Nebula NGC 6960

Imager: Andy Hernandez

20 hours integration time at 300 seconds, AM5,
ZWO 533MC Pro, ASIair, ZWO 220MM Guide,
EAF, Askar FRA500, Opt L-Pro, in Bortle 7.



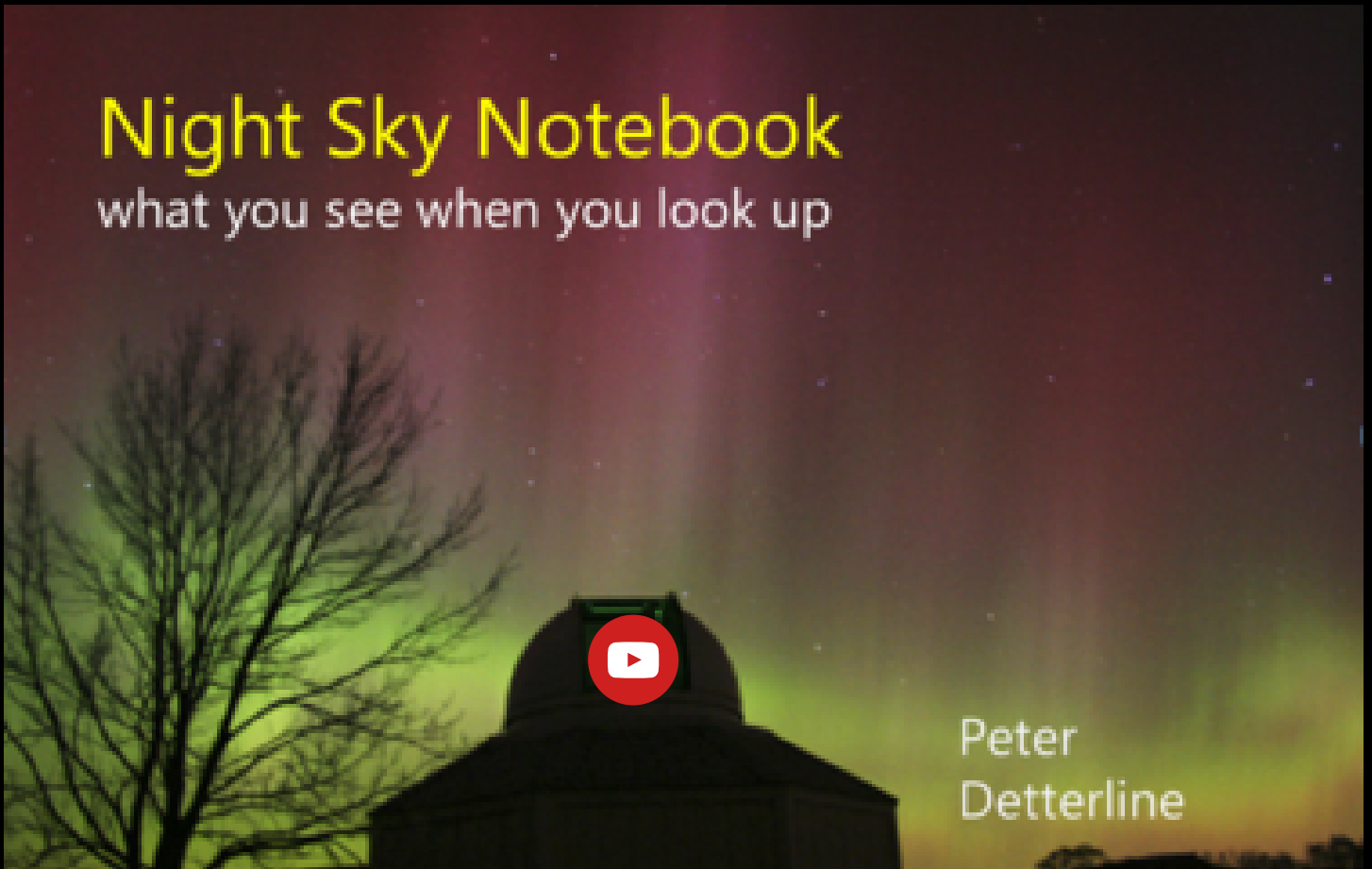
Price Dropped \$1000!

Astrophotography Rig - Only out under the stars twice. Rig consists of Redcat 51 Gen 3 250mm F4.9 scope, Celestron StarSense Autoguider, 9x50 finderscope, ZWO EAF electronic focuser, ZWO ASI533MC Pro cooled color camera, 2" filter drawer with Moon and UHC filters, telescope heater strap with manual PWM temperature controller, Celestron AVX equatorial mount, external GPS receiver, (3) 12vdc power supplies, powered USB hub and Windows 10 laptop for equipment interface and image processing. \$1800 bodhi.black@1791.com (267) 377-6229

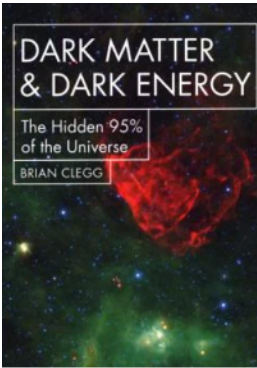




Peter Detterline's
Night Sky Notebook
October 2024



From the Library by Joe Zitarelli



“All the matter and light we can see in the universe makes up a trivial 5 per cent of everything. The rest is hidden. This could be the biggest puzzle that science has ever faced”

The topics of dark matter and dark energy are frequently discussed among the public together, but they are very different. One fact that they do have in common is that they are not well understood. I recently read Neil deGrasse Tyson’s book, *Astrophysics for People in a Hurry*, which devoted a chapter to each of these topics. While walking through the library, I saw the book *Dark Matter & Dark Energy; The Hidden 95% of the Universe* by Brian Clegg. It wasn’t a very big book, which makes sense since there is a lot more unknown than known on these topics.

The first half of the book is the dark matter half. The author starts with discussing where early astronomers thought mankind and earth belonged in the universe. He then discussed some of the discoveries of modern observers. He eventually gets to where observers in the 20th century discover that something, and a lot of something it is, seems to be missing. From there he goes into what this missing “stuff” might be. While there were initially a lot of proposals for dark matter, many of these possibilities have been ruled out. Are they WIMPs or are they MACHO? He discussed some of the experiments that have been done as well as some of the planned experiments. Spoiler alert: in 2019 they were still looking, and that has not changed in the last 5 years. By the way, why do we call it dark matter? It doesn’t seem to interact with electromagnetic forces so maybe we should call it transparent matter.

Keep in mind that dark matter is a theory, it isn’t a law. Being a theory, it must be testable. But wait, so far all tests have failed. Maybe the laws of Physics don’t hold everywhere in the universe. What heresy we speak! Maybe the “stuff” doesn’t really exist at all and we need to just modify some of the laws and equations of gravity. Yes, that’s right, add some fudge factors to what Newton and Einstein proposed. Now we are into Modified Newtonian Dynamics, or MOND for short. We don’t hear anywhere near as much about MOND as we do about dark matter. But in 2024 the debate rages in academic circles with most theorists favoring dark matter. And when you are waiting with baited breath to see which comes out on top, dark matter or MOND, throw in Professor Donald Saari who suggests that our data may not be that accurate and that dark matter could be only in the imagination of those who went looking for it. Got all that? The rest of the book is very straightforward.

Just kidding. There seems to be less knowledge about dark energy than about dark matter. First, the author walks us through how one group of physicists and another group of astrophysicists, working independently, came to the same conclusion. The expansion of the universe is accelerating, not slowing due to gravity. But neither group could say why. We are calling this dark energy. Is it the cosmological constant from general relativity or does it vary from place to place and at different times? Theorists call this second option quintessence. Or once again could it all be an error introduced by assumptions?

This book doesn’t give all the answers, because frankly, we don’t have all the answers. I felt this book presented a lot of information in a concise relatively easy to understand way. It added to my knowledge of cosmology. However, it also gave me things to think about such as: the quantum void is not empty. The early universe was all energy, and energy doesn’t take up space. Gravity can be considered a negative energy. Once you combine the mass of everything in the universe with the gravitational pull all that mass provides, they pretty much cancel each other out. Let those statements slosh around in your brain while you are trying to get to sleep. It beats counting sheep.

The author, Brian Clegg, is a science writer, not a physicist or astrophysicist. The translation of the last sentence means it is written in English mortals can understand, not equations that are limited to the very few. This book is a very readable 148 pages of information. It was written in 2019, so already the information may be slightly outdated. But in reality, there haven’t been any major breakthroughs in the last 5 years. Maybe the big breakthrough worthy of a Nobel Prize is just around the corner. I feel this book will bring a reader up to speed on the topics fairly quickly. Maybe the 2030 version of this book will have more answers.

Dedicating an Observatory

By Sandy Mesics

Fifty years ago, the Schlegel-McHugh Observatory at Pulpit Rock was dedicated. Now some readers are probably thinking, “What is the Schlegel-McHugh, and where is it?” The short answer is that the observatory is now commonly known as “The Tinsley.”

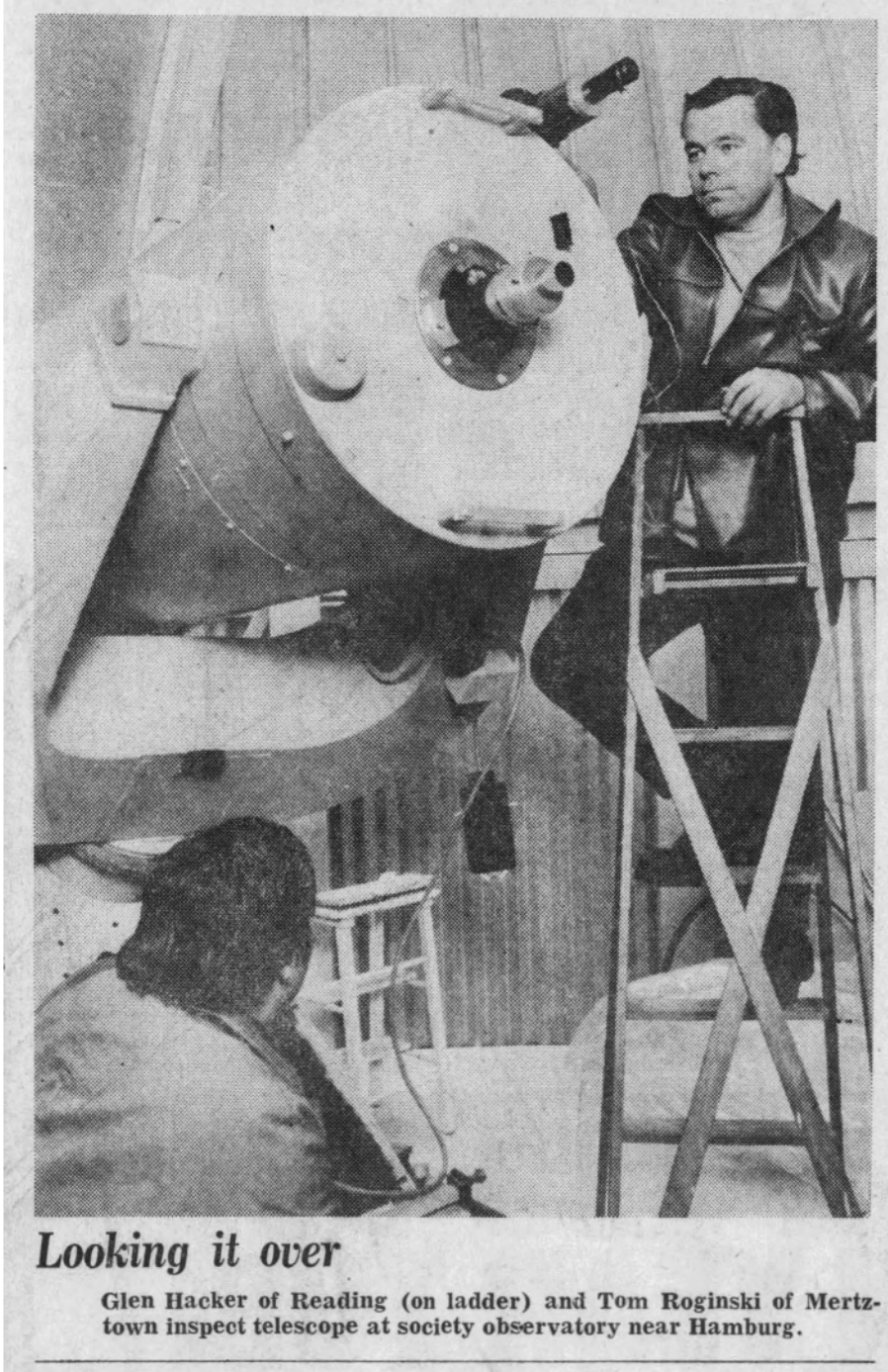
Now this is my pet peeve: The telescope inside the Schlegel-McHugh Observatory was manufactured by Tinsley, but the observatory itself is still appropriately named the Schlegel-McHugh Observatory, in honor of the two LVAAS members who built the original telescope and oversaw the construction of the observatory.



Bill McHugh, left, and Ralph Schlegel, right in a whimsical moment.

About 75 persons attended the dedication of the observatory and telescope on October 5, 1974, a day which was described as having “exceptionally beautiful Fall weather – clear blue skies and gentle warm breezes.” Ralph Schlegel, Paul Shenkle, and Ernie Robson spoke about the seven-year history of activities at Pulpit Rock. The telescope was slated to be used jointly by LVAAS and Villanova University as part of a photoelectric photometry program to measure the brightness of variable stars. Drs. Ed Guinan and George McCook of the Villanova astronomy department described the program to the attendees, and the Villanova staff mounted the photoelectric

photometer on the telescope and described its operation. Dr. James Markham, Dean of Sciences, and Father Jenkins, the former head of the Villanova Astronomy Department, also represented Villanova University.



At the time of its dedication, the 20-inch telescope housed in the observatory was the fifth or sixth largest amateur society-built telescope in the US. While the design of the scope was intended to be a Schmidt-Cassegrain, the corrector plate was never completed, and the scope was used as a classical Cassegrain for over 20 years. Despite several attempts to complete the optical set as a Schmidt-Cassegrain, when it became apparent that no one had the optical skills to complete the optics, the scope was mothballed and replaced by the 18-inch Tinsley Cassegrain scope that was donated by Kutztown University.

So, dear readers, please refer to the observatory as the Schlegel-McHugh, not the Tinsley, and you will make the author very happy while honoring the work of the two individuals who did so much great work for LVAAS in its first decades.

Allentown Morning Call, October 6, 1974

References

The Observer, November 1974

Allentown Morning Call, 1974 10 06.



StarWatch

That simple word always brings a feeling of sadness to my soul—a respite from summer's heat, a prelude to winter's shiver. Spring and summer are my favorite times of the year; however, my wife, Susan, is just the opposite, loving the fall through the New Year as her time and tolerating the summer months in an air conditioned environment. So why does the sun do its downward slide to cold and darkness? * The Earth's axial tilt causes the equator to be angled at 23.5 degrees to the plane of its orbit, the ecliptic, where the sun is always positioned. The sun glides along this path, a reflection of Earth's orbital motion reaching its high point above the equator in June, producing those endless days of summer, as well as Sol's low, shadowed, short days of winter. After the summer solstice, the sun slowly begins its downward trek, accelerating until the autumnal equinox, where its daily descending spiral reaches its most significant change. The transition from summer to fall happens when the sun crosses the equator, moving from favoring the Northern Hemisphere to shining more directly over the Southern Hemisphere. That occurs on Sunday, September 22, at 8:42 a.m. EDT, when the sun reaches its midpoint, the autumnal equinox, the mean between the extremes of the seasons. From the Latin, *equinox* means "equal nights," but conditions are not exactly the same. Day and night would be equal if the Earth had no atmosphere, but since it does, the Earth's ocean of air refracts the sun's disk upward by approximately 35 minutes of arc (35/60th of a degree) when the center of the sun should be on the horizon. This is called astronomical refraction. The effect of an artificially higher sun causes Sol to set just over three minutes later for us than it would if our planet

were airless, like the moon. Astronomical refraction also causes the sun to rise about three minutes earlier than if the Earth had no atmosphere. * Despite my gloominess over the colder weather that awaits, the few weeks surrounding the equinoxes, both autumnal and vernal, offer the best opportunity to witness some of the most rapid changes that can take place in the heavens. By October 5, two weeks after fall begins, the sun will be over five degrees lower in the sky at noon, and the sunlit day will be shorter by 35 minutes for people living at 40 degrees north latitude, like Moravian University's location. The effects are more pronounced northward and less noticeable southward. Reykjavik, Iceland at 64 degrees north latitude will lose about six minutes of sunlight each day surrounding the fall equinox, one hour, 24 minutes during the same two week interval. * One positive aspect of the autumnal months is the seasonal lag in temperatures. During the spring and summer, the northern hemisphere absorbs more energy than it radiates back into space, causing the land and oceans to heat. Temperatures along the East Coast reach their yearly maximums around the third week in July, which causes the effects of warmer conditions to spill over well into the autumn months. The big chill does not commence until sometime in November. Halloween can still be balmy, but by Thanksgiving, normally those pleasantly warm Indian summer days are gone and won't be returning until late April or early May. * Say goodbye to the sun. The time of the long shadows is rapidly approaching, and my wife is in a celebratory mood. *Winter people*, rejoice. Ad Astra!



2024

What are the Stats of your LVAAS Membership?

LVAAS PayPal link: https://www.paypal.com/donate/?hosted_button_id=FBP8Y5VX5QXNW

(remember to add a note with your name, and membership type)

If your information has changed:

Online information update form: <https://form.jotform.com/233314308714147>

Printable form:

https://lvaas.org/filemgmt_data/files/LVAAS_Membership_Renewal_Form.pdf

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

Questions? email membership@lvaas.org

New members who joined after October 1st are paid up for the following year.

Regular: \$45

Family: \$65

Junior/Student: \$15

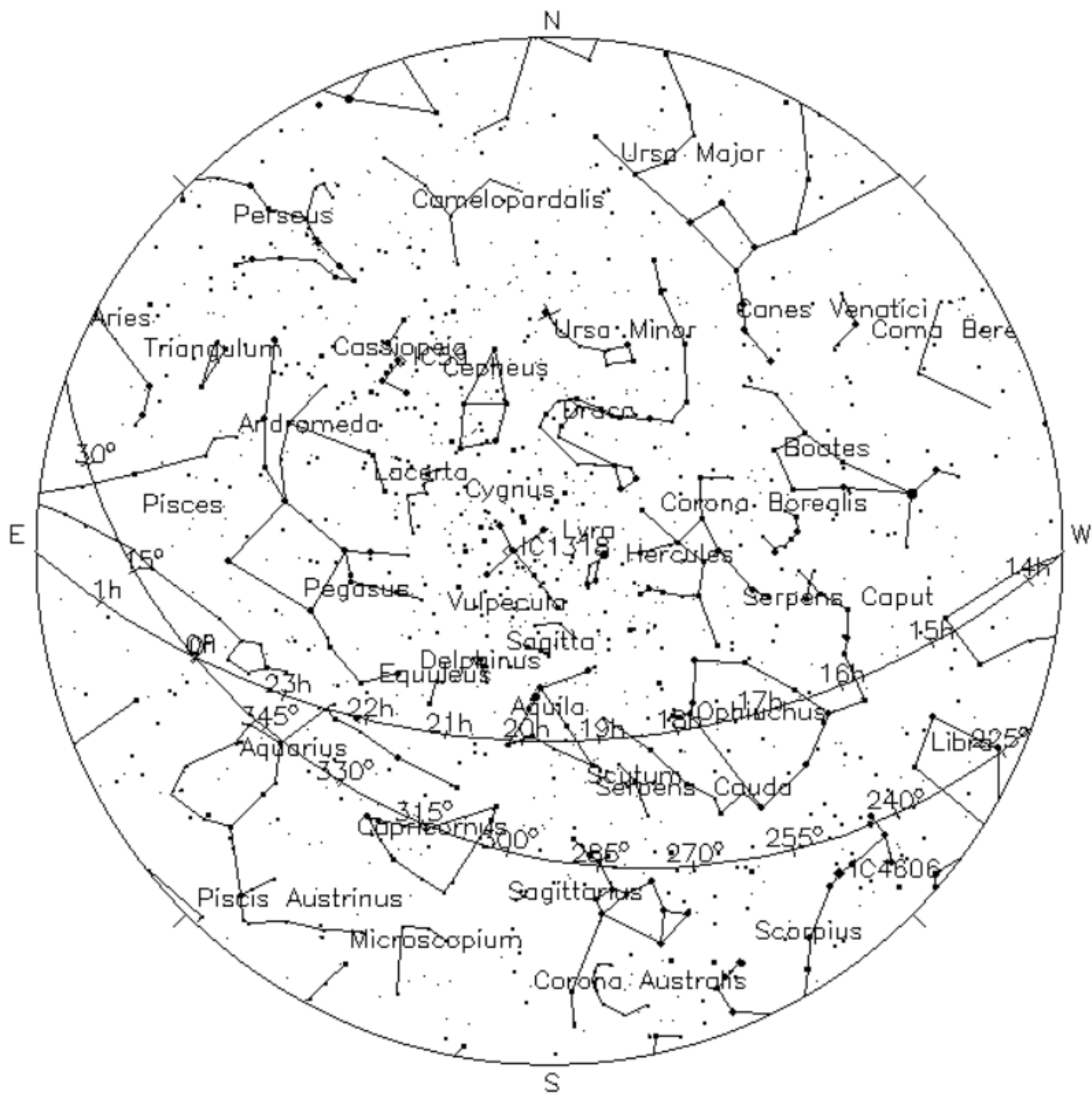
Sustaining: \$90

OCTOBER 2024

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

NOVEMBER 2024

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
					01	Astroimaging Meeting - 7:00 PM 02
Daylight Savings Time Ends 03	04	05	06	07	Stargazers Group Meeting 08	First Quarter Moon 09 Star Party
General Meeting 2:00 PM South Mountain 10	Veterans Day 11	12	13	14	Full Moon 15	16
Deadline for submissions to the Observer 17	18	19	20	21	Last Quarter Moon 22	23
LVAAS Board of Governors Meeting 24	25	26	27	Thanksgiving Day 28	29	30



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/>

2024 LVAAS EVENT CALENDAR

Contributed by Bill Dahlenburg

2024 LVAAS Event Calendar											
	Sundays		Board meeting	Saturday			Observer Submission Deadline	Moon Phase			
	General Meeting time	location		Astro-Imaging	Star Parties	Stargazers Group		New	1 st	Full	3 rd
January	14	3:00 PM Muhlenberg	28	no meeting	no meeting	no meeting	1/21/24	11	17	25	3
February	4	3:00 PM Muhlenberg	25	no meeting	no meeting	no meeting	2/18/24	9	16	24	2
March	10	3:00 PM Muhlenberg	24	no meeting	16	8	3/17/24	10	17	25	3
April	14	7:00 PM S.M.	28	6	13	12	4/21/24	8	15	23	1
May	5	7:00 PM S.M.	19	11	18	10	5/12/24	7	15	23	1 30
June	9	7:00 PM S.M.	30	1 29	15	14	6/23/24	6	14	21	28
July	13/14	5:00 PM S.M.	28	x	20	12	7/21/24	5	13	21	27
August	10/11	7:00 PM Pulpit	25	3 31	17	9	8/18/24	4	12	19	26
September	8	7:00 PM S.M.	29	x	14	13	9/22/24	2	11	17	24
October	13	7:00 PM S.M.	27	5	12	11	10/20/24	2	10	17	24
November	10	2:00 PM S.M.	24	2	9	8	11/17/24	1	9	15	22
December	8	2:00 PM ?	29	7	no meeting	no meeting	12/22/24	1 30	8	15	22

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 4/20 - 4/21
 Mega Meet 8/9 - 8/11
 CSSP 6/6 - 6/9
 Stellafane 8/1 - 8/4
 BFSP

October 4-5-6?

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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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.

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