

The Observer

The Official Publication of the Lehigh Valley Amateur Astronomical Society

<https://lvaas.org/>

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

April 2023

Volume 63 Issue 04





A stylized, handwritten signature that reads "Ad Astra". The letters are fluid and connected, with a long horizontal line extending from the end of the word "Astra".

Getting right into it: In club news, Phillip Doherty will be joining the LVAAS Board of Governors as the new Light Pollution Abatement Director. Thank you, Phil and we look forward to working with you!

I would also like to thank Jackie Olexa and Rich Hogg again regarding Astrospheric. We are now able to offer our members access to the Society Pro version which has many weather related features, including alerts, available at no cost just by being an LVAAS member. The Pro version normally costs \$29.99 per year. To join, simply download the app, create an account, find the LVAAS group within the app, then request to join the group. We are obligated to ensure those joining are actually members so you may receive an email asking you to verify your membership; just be on the lookout for that.

The Board of Governors voted to provide a long-term loan of the 10" Meade SCT for Claudio T. Stabile, a Life Scout with Troop 102, as part of his Eagle Scout project to establish an observatory for Polk Township for public outreach and education. The loan will be to Polk Township as they will be the beneficiary of this project. Great job, Claudio and congratulations!

There are many projects LVAAS is working on to add value and provide a better experience for our members. There are also some leadership positions available for anyone who would like to help out with those as well. Of course, all are welcome to join any of the committees we have too. You would be joining a team of talented individuals and helping to add value to the club, and to promote the science of astronomy to the public. Just get in touch with the director of the committee on the Contacts page of our website and let them know you are interested.

One particular project we are starting is restoration and renovations at South Mountain HQ. If you are, or know of, a quality roofer to replace the dome/roof of the headquarters, we would love to hear from you! Other projects may also include the need for a general contractor, HVAC technician, and others to help renovate and modernize the South Mountain HQ.

Some upcoming celestial events in April will be:

April 2 - LVAAS General Meeting - Anna Baum will be talking about Chromospheric Activity in Sun-like Stars and the Mystery of the Maunder Minimum. The Maunder Minimum was a period where there was almost no sunspot activity on the Sun for 80 years!

April 6 - Full moon

April 11 - Mercury will be at greatest elongation East (seen in the evening) with an altitude of 19 degrees. This is fairly high in the sky. For comparison, Polaris is only about 40 degrees from the horizon.

April 13 - Last quarter moon

April 15-16 - NEAF

April 20 - New moon and an annular solar eclipse in parts of Australia, Timor-Leste, and West Papua. An annular solar eclipse occurs when the moon is not quite able to block the entire disc of the sun, so instead of a total eclipse you'll see a bright ring around the moon.

April 22 - LVAAS Astro-imaging meeting

April 23 - Lyrids meteor shower peaks.

April 27 - First quarter moon

April 29 - LVAAS Star Party

Perseus is a good constellation to see this month as it is well placed early in the evening. Be sure to check out Algol, the star representing the head of Medusa. This is a variable star caused by eclipsing binary stars that orbit each other so closely that Algol goes through a complete cycle of brightest, then dimmest, and back to brightest over only 3 days!

On this day (March 27th) in 1989, the Soviet Union's Phobos 2 mission ended in failure. Phobos 2 was sent to Mars' moon Phobos to study it. It did this for 2 months and sent back 37 pictures. The final phase was for the probe to deploy 2 landers on the surface. As the probe made its way to the surface, mission control lost contact with the probe and so the mission was lost. It was determined that a computer error was the cause of the failure.

Lastly, a fun fact to consider: If the Earth was the size of a basketball, our atmosphere would be the thickness of a single coat of shellac. Continuing with this scale, the moon would be the size of a tennis ball orbiting an average of 24 feet away.

Ad Astra!

Mike Huber

Minutes from the LVAAS General Meeting – March 12, 2023

The March 2023 LVAAS General Meeting was conducted electronically using an on-line service and in Room 130 of Trumbower Science Building at Muhlenberg College. Approximately 60 people were in attendance. Director Michael Huber opened the meeting at 3:05 p.m.

This afternoon's General Meeting presentation was "Catching a Shadow from 12 Million Miles Away and Measuring Pluto's Atmosphere. Wait a Minute -- Pluto Has an Atmosphere?" by Roxanne Kamin. As an avid amateur astronomer and fly fisherman, Roxanne has viewed night skies from both the Northern and Southern hemispheres, including three trips to Australia with Southwest Research Institute (SwRI) / NASA. Recently retired from IBM and residing near Hershey, she is active in measuring asteroids with SwRI along with the International Occultation Timing Association (IOTA), and can be found most clear nights observing at Cherry Springs or at the Naylor Observatory, home of the Astronomical Society of Harrisburg.

Roxanne spoke about her experiences as a Citizen Scientist. She discussed that NASA sponsors multiple programs for Citizen Scientists as well as opportunities such as Zooniverse provided by the Citizen Science Alliance. Roxanne was involved in the New Horizons project using a 24" DFM Engineering SCT at Liberty University in Lynchburg, VA as well as traveling to Katherine, Northern Territory, Australia using a 16" Skywatcher Dobsonian. She was also involved in the LUCY Mission to study Jupiter's Trojan asteroids.

Roxanne stressed that there are many opportunities for amateur astronomers to get involved. NASA makes some of their data available for citizen use at <https://nightsky.jpl.nasa.gov>. In addition L'SPACE Academy is open to undergraduate STEM students interested in pursuing a career with NASA or other space organizations. L'SPACE consists of two Academies - the Mission Concept Academy, and the NASA Proposal Writing and Evaluation Experience Academy. Students may participate in one Academy per semester. Each 12-week Academy is designed to provide unique, hands-on learning and insight into the dynamic world of the space industry. You can access L'SPACE at <https://www.lspace.asu.edu>

"Find your niche... It's out there"

After many questions, there was a break taken at 4:23 p.m.

The Informational Meeting resumed at 4:35 p.m.

Director's Report: Mike Huber

- There are still vacancies open for anyone who would like to serve as Director of a standing committee. Please contact Mike Huber.
- If you would like to assist one of the existing Directors contact them directly.
- There is an outreach program this Friday evening, March 17, at Lehigh Valley Academy Regional Charter School in Bethlehem. If you are interested in helping out, please contact Mike Huber.

Membership: Rich Hogg

- We currently have almost 400 members.
- The following members completed their Second Readings and are now Full Members:
Jesse Bhagat
Haroon Dasti
Aimee Frasier (family membership with spouse Marcus and 3 children)
Andrew Matzelle Jr.
Linda Prince
- The following members completed their First Readings:
Robert Lehman
Curtis Mohn
Peter Puleo
- The following members have previously completed a First Reading and are still eligible to complete a Second Reading to become full members:
Pravin Chunduru and Deepthi Kallakuri (family membership)
Michael Vila

General Comments:

Jackie Olexa discussed Astrospheric which is both a website and an app for your smartphones. Because the Society has over 20 registered users, all LVAAS members can use the Pro Society version and we will be embedding links to their website on the LVAAS Weather Page. Further, the Pro Version will: (1) give members the benefit of seeing the cloud forecast that all 4 weather models predict for sites you choose, (2) will have access to blended maps, and (3) get weather alerts for favorite locations where the settings can be fine tuned to what you want to know. You will be emailed an access code that will allow you to access Astrospheric Pro. When in the app, navigate to Subspace then "Join Group". Type in the Subspace Code you received when prompted.

Education: Blaine Easterwood

- Lehigh Valley Space Fest is scheduled for May 6-7, 2023 at Paxinosa Middle School and Cottingham Stadium in Easton, PA. If you are interested in being involved you can contact Blaine by email.

Star Party and South Mountain Maintenance: Bill Dahlenburg

- Our first Star Party of the year is just two weeks away on March 25 at South Mountain. We are always looking for additional help.
- If you would like to see the facilities at South Mountain, get trained on the scopes or need help with your equipment, this is available on Saturday mornings. Send Bill an email ahead of time.

Astroimaging and Mega Meet: Tom Duff

- The first Astroimaging Meeting of the year will be held on Saturday April 22 at 7 p.m.
- Mega Meet is in May on the weekend of the 19th through the 21st at Pulpit Rock. Many members camp out and will be a good chance for newer members to see the facility and get involved.
- NEAF, Northeast Astronomy Forum and Expo is April 15-16, 2023 will be held at Rockland County Community College. This is a large meeting where there will be many presentations as well as vendors. Many Society members tend to attend. For more information you can go to: <https://www.neafexpo.com/>

Next General Meeting:

- The next meeting will be held on Sunday April 2, 2023 at 7 p.m. at South Mountain.

The meeting was adjourned at approximately 5:15 p.m.

Submitted by Joe Zitarelli, Secretary

Via Sandy Mesics, Programs Chairperson

Upcoming LVAAS General Meeting Speakers

April: Anna Baum, Lehigh University doctoral student: "Chromospheric Activity in Sun-like Stars and the Mystery of the Maunder Minimum"

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

June: LVAAS Secretary Joe Zitarelli will speak on Optics

July: Gary A. Becker and Peter Detterline will speak on the 2024 Eclipse.

September: Charles Bracken will speak on Astroimaging.

October: John Conrad will speak on the Osiris Mission.

November; author Dava Sobel will speak; topic TBA

Speakers are still needed for August at Pulpit Rock, and December at the Holiday Party.

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

Via Bill Dahlenburg, Star Party Coordinator

LVAAS needs help with **Star Party** activities. Anyone willing to help will be trained on running the telescopes. Training is easy! Planetarium shows are: 6 p.m. for kids, 7 p.m. Presentation, 8 p.m. Planetarium Show for adults. **Our next Star Party will be Saturday April 29, 2023.** Additionally, if anyone is interested in helping with or taking over the organization of LVAAS Star Parties, please contact Bill: sm_maintenance@lvaas.org

Via Earl Pursell, Planetarium Director

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

Via Dave Raker, Society Librarian

The following books are new:

Mars 37 Pocket Atlas by Henrik Hargital

Solar System by Marcus Chohan

Breakthrough! 100 Astronomical Images that Changed the World by Robert Gendler

The History of the Space Shuttle No author listed.

Please notify Dave if you have a suggestion for a book or DVD for the LVAAS Library.

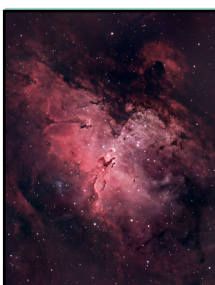
Dave will have library books for sale at our next general meeting April 2 at SMHQ

Via Sandy Mesics, Assistant Director

Our March speaker, Roxanne Kamin, shares this Citizen Science opportunity: Help out the Gaia Mission in sorting out and classifying stars! You'll work with the European Space Agency to help classify Gaia's collection of variable stars- a perfect activity for a cloudy night in! More [here](#)

Via Earl Pursell, UACNJ Liason:

UACNJ provides free public programs on-site at our Observatory in Jenny Jump State Forest, New Jersey from April through October on Saturday evenings. To view the program line-up please visit uacnj.org.



Cover: *The Eagle Nebula M16* by Imager **Mike Huber**

Imaging Telescope: Sky-Watcher Starlux 190MN / BK 190MN DS

Imaging Camera: ZWO ASI533MC Pro

Mount: Sky-Watcher AZ-EQ6 GT

Filter: Baader UV/IR Cut / Luminance 2"

Accessories: Bluetti EB70 portable power station · ZWO ASIAIR Pro · ZWO EAF

Software: Adobe Photoshop · Pleiades Astrophoto PixInsight

Guiding Telescope: Orion 50mm Mini Guide scope

Guiding Camera: ZWO ASI120MM Mini

Date: June 19, 2022

Location: Cherry Springs State Park

Frames: 19×300"(1h 35')

Moon phase: 67.61%

[more and more](#)

The CMB-S4 Saturday Science Series

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

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

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

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

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

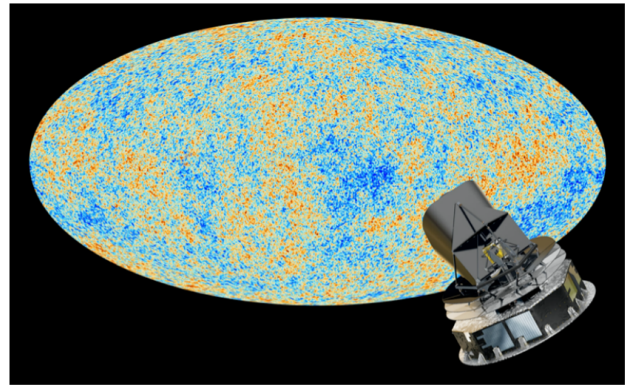


Figure 1: The cosmic microwave background with the Planck satellite in front. Credit: ESA and Planck

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

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

Article submitted by: Blaine Easterwood

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

We need your help!

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

We are looking for people to:

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

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

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

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

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

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

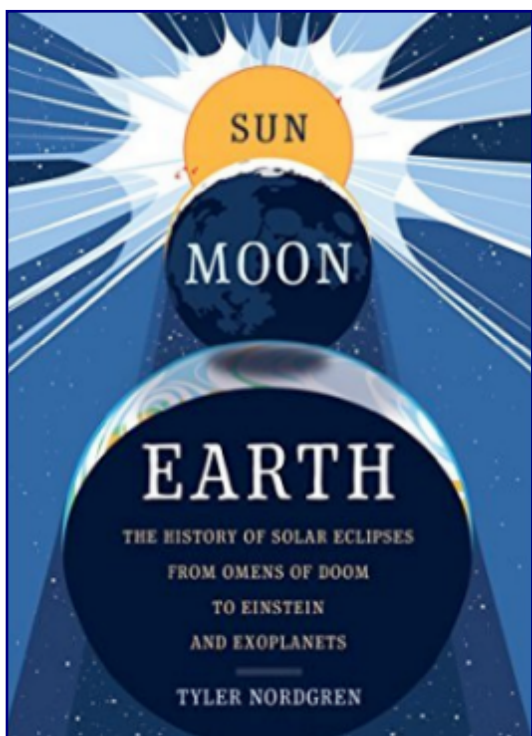
For more information, or to be an LVAAS volunteer, please contact Blaine Easterwood, at blaine@ieee.org

Submitted by Blaine Easterwood



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

LVAAS Book Club



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

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

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

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

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

Two Reviews:

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

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

Submitted by Blaine Easterwood, Education Director

LVAAS General Meeting ~ Public Welcome!
Sunday, April 2 at 7 p.m. Grady Planetarium
South Mountain Headquarters, and on *Zoom*

**Chromospheric Activity in Sun-like Stars and
the Mystery of the Maunder Minimum**

presented by

Anna Baum



The Sun's magnetic activity consistently fluctuates on an 11-year cycle. The only exception to this was the Maunder Minimum in the 1700's, when the Sun's cycle flatlined, and almost no sunspots were observed for 80 years. Activity cycles in other stars like the Sun have been observed for years, leading to the recent discovery of another star like our Sun, entering a mysterious Magnetic Maunder Minimum.

Anna Baum is a 3rd year Physics PhD student at Lehigh University. She graduated from Penn State University in 2020 with a Bachelor of Science in Astronomy & Astrophysics. In 2022, she published a paper on the chromospheric activity in Sun-like stars and the discovery of a star entering a Maunder Minimum. She is currently conducting research on eclipsing binary stars and asteroseismology, and is always excited to learn more about stars.

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



Peter Detterline's
Night Sky Notebook

APRIL 2023

Night Sky Notebook

what you see when you look up



Peter
Detterline

From the Archives: Remembering Robert Koch

By Sandy Mesics

Fifty years ago, a lot was happening at LVAAS. The 20-inch telescope was being moved into the Schlegel-McHugh Observatory at Pulpit Rock (sometimes now referred to erroneously as the Tinsley Observatory), the Junior Society, the Ursa Majors, were up and running again, the Astronomy Study Group was meeting monthly, and a mirror-making class was regularly gathering to “push glass.” At the April 1973 general meeting, the featured speaker was Dr. Robert Koch, the Chairman of the Astronomy department at the University of Pennsylvania. He spoke on the new role of general relativity in the study of binary stars, his special field of study.



Koch was born in York, PA in 1929, and attended the University of Pennsylvania on a senatorial scholarship, graduating in 1951 with a BSc in mathematics. He spent two years in the Army Quartermaster Corps, then returned to Penn to pursue his graduate studies. He earned his MA in astronomy from Penn in 1955, the MSc in astronomy from the University of Arizona in 1957, and the



PhD in astronomy from Penn in 1959. His research involved photoelectric photometry of R Canis Major, AO Cassiopeia, AS Eriadini, and XY Leo. He did this work at the Steward Observatory of the University of Arizona. Koch would continue his work on close binary stars, their atmospheres and interactions, intrinsic variables, transits and occultations for the rest of his career.

He taught at Mt. Holyoke College and Amherst until 1965, then taught at the University of Massachusetts and the University of New Mexico before returning to Penn in 1967. He served as Chair of Penn’s astronomy department from 1969-1973. He spent the next 29 years at Penn until retiring in 1996. He authored well over 200 refereed publications.

Koch was described as a “very careful, thoughtful, insightful, and innovative researcher with an inquisitive and open mind. ... As a teacher he had a special ability to explain clearly matters which are difficult and complicated to understand. His many students were amazed at the breadth as well as the depth of his knowledge. As a man he was a real gentleman with kindness, trust, and warm-hearted mind.” (Kim & Kang, 2010)

Koch did most of his work at the Flower and Cook Observatory in Malvern (see my column in the March 2019 *Observer*). Flower and Cook was in active use from 1956 until the mid-1990s. “The observatory was infrequently used after Dr. Koch retired [in 1996], since it was devoted to double-star research, which was his specialty,” said Benjamin Shen, Penn’s Reese Flower Professor of Astronomy and Astrophysics from 1972 to 1996.

In his retirement, Koch explored the development of large lightweight telescope mirrors. He also wrote a history of observational astronomy at the University of Pennsylvania. He was an avid gardener, traveler, and bird watcher, and learned to play the mandolin at the age of 77.

Bob once wrote that he long ago decided "to control my career so as to have as much fun as grief"; in this he was successful beyond his dreams. Koch died in October 2010 after a brief illness at the age of 80.



This picture of Robert Koch hard at work is typical of how many of his students and colleagues recall him. Koch liked to graph experimental measures in real-time and this provided immediate insight into the phenomena under study. Robert H. Koch's Work on Lightweight Medium-Aperture Mirrors - Scientific Figure on ResearchGate. Available from:

https://www.researchgate.net/figure/This-picture-of-Robert-Koch-hard-at-work-is-typical-of-how-many-of-his-students-and_fig14_259128650 [accessed 11 October, 2022]

References

Kim, Chun-Hwey & Kang, Young Woon, Robert Koch Obituary

<https://www.yumpu.com/en/document/read/17614651/robert-harry-koch-1929-2010-journal-of-astronomy-and-space->

Mesics, Sandy. A Visit to Flower and Cook Observatory, *The Observer*, March 2019.

The Observer, April 1973.



StarWatch

The Season of Brightness Begins

There is nothing more depressing to me than the autumnal equinox, followed about 40 days later by Halloween. The sun is on the downslide, and darkness is the byword. A few days later, we slip into standard time causing the sun to set an hour earlier, making driving times more difficult in the deepening twilight at the end of a working day. * Humans crave sunlight. Without it, we become depressed. During winter in the Scandinavian countries, suicide rates increase because the sun is embedded into our psyches. For daily rejuvenation during winter, Alaskans build sunrooms, then flood them with artificial light similar to the color temperature of the sun. They also enjoy taking two-week jaunts to Hawaii to ward off the negative effects of the darkness. Illnesses spike in the colder weather because we become sequestered indoors, breathing each other's air and transmitting diseases more readily. * However, there is good news. For the next six months the Northern Hemisphere will be basking in the light. The sun joyously dances across the equator on Monday, March 20 at 4:23 p.m., EDT, balancing for one day, light and darkness equally for the entire planet. Then Sol will rapidly move northward favoring the Northern Hemisphere, while its influence wanes south of the equator. It is finally springtime! * These seasonal changes are a result of the tilt of the Earth's axis, the imaginary line about

which our planet rotates (spins) to its orbital path around the sun (the ecliptic), as well as the condition that the pointing direction of the axis remains essentially stationary. This forces the sun to shine directly above and below the equator, which represents the rotational plane of the Earth. The deviation is the same amount that our axis is tilted. * Our Earth's equator is slanted by 23.5 degrees from its orbital plane which means that Sol will continue to move northward until it has reached 23.5 degrees north of the equator, a position called the Tropic of Cancer. On this day, Wednesday, June 21, the Lehigh Valley will be flooded with sunshine for nearly 15 hours, while for residents living just north of Fairbanks, Alaska on the Arctic Circle, which is 23.5 degrees south of the North Pole, the sun will not set at all. At the top of the world, Sol remains visible for a period of six months, causing Santa's toy production to spike during this period of continuous light. Rumor has it that he has gone completely solar. * Watch the sun's noontime altitude climb during the next three months and note how shadows will be shortening during the period of high sun. Watch its rising locations becoming more and more to the north of east as the sun moves northward towards the Tropic of Cancer. Sol's setting positions will also move to the north of west. This is indeed the start of the season of brightness. Happy Spring to all who favor the light. Ad Astra!

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

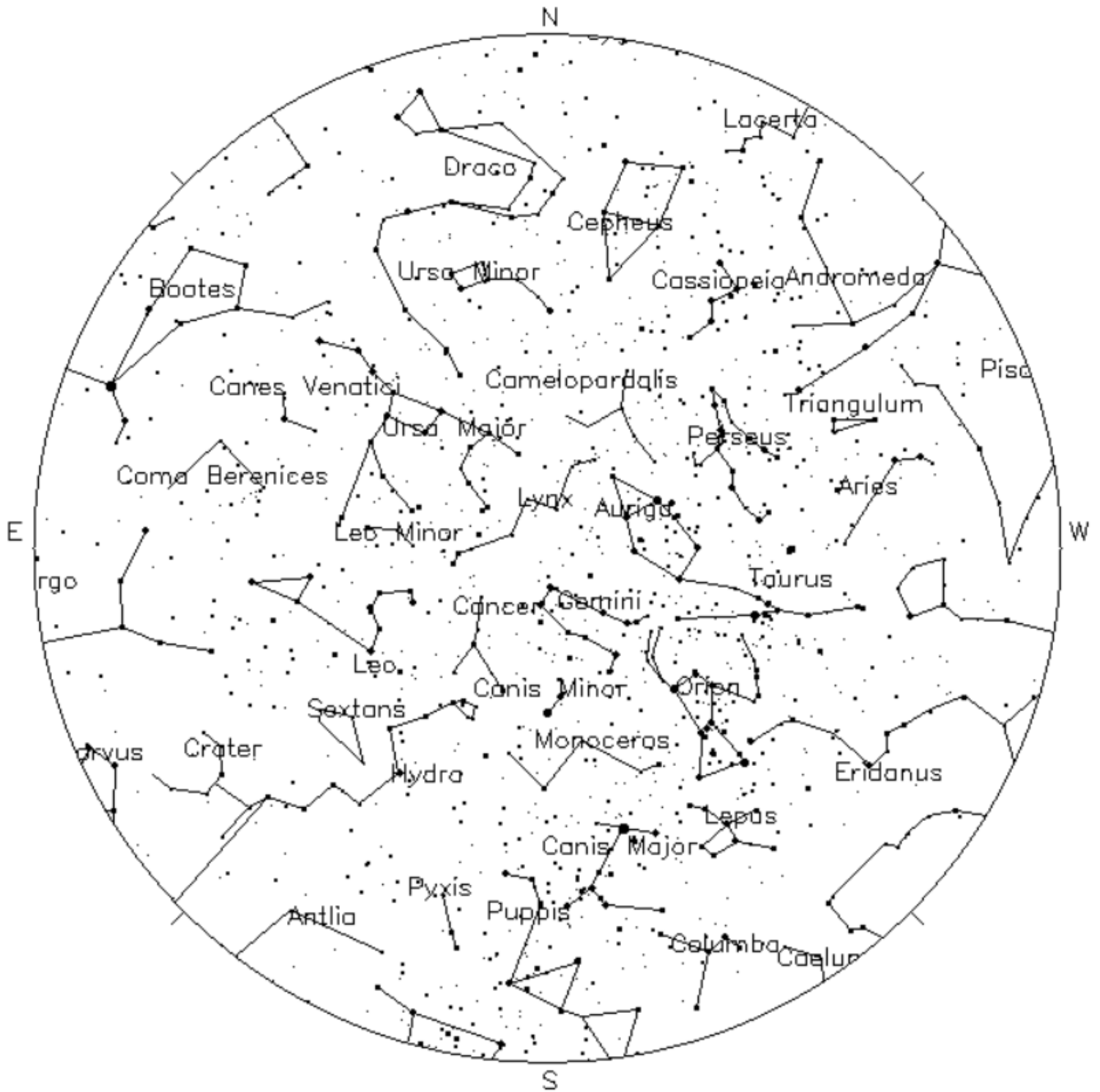
Forward this **StarWatch** to a friend by clicking [Join](#)

APRIL

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

MAY

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



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

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

Based on GIFENCOD by David Rowley

Lempel-Zim compression based on "compress"

Modified by Marcel Wijkstra

Copyright © 1989 by Jef Poskanzer.

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

2023 LVAAS EVENT CALENDAR

Contributed by Bill Dahlenburg

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

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

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

Publishing images is a balancing act!

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

Put the quality in:

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

But watch the "waistline"!

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

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

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

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