

The Observer

The Official Publication of the Lehigh Valley Amateur Astronomical Society

<https://lvaas.org/>

610-797-3476

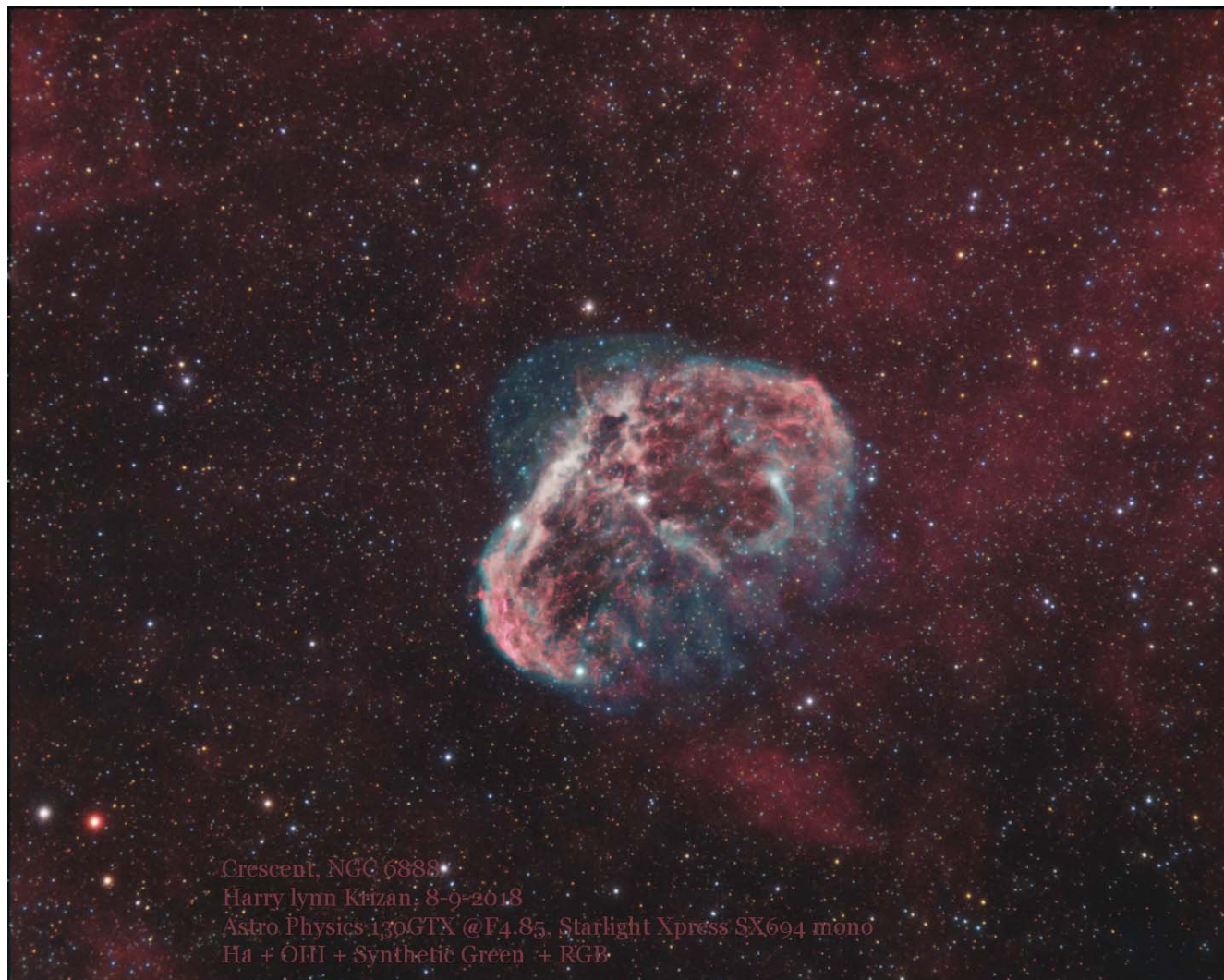
<https://www.facebook.com/lvaas.astro>

January, 2019

Volume 59 Issue 01



The Crescent Nebula (NGC 6888) in Cygnus



Astro Physics 130GTX @F4.85
Starlight Xpress SX694 mono
Ha + OIII + Synthetic Green + RGB
Photography by Lynn Krizan, August 9, 2018

Cover Image: The Orion Nebula (M42) imaged using an Astro Tech AT111ED refractor with a Starlight Xpress H9 CCD mono camera, True Tech filter Wheel. Astronomik LRGB filters, Astronomik 12nm Ha filter. Astro Physics Mach1 mount. HA + LRGB image totaling 122 mins.; acquisition with Maxim DL, post processing with Photoshop v. 5

Imaged by LVAAS member Lynn Krizan in 2012 from his backyard in west Allentown.



2018: A December Diary

Dec 1 9:15 — Coming to grips with the reality. I guess I'm Director of LVAAS again, and there is a ton of stuff to do. Need to get ready for the Holiday Party, and get the Trivia Contest together. The Member Services committee is vacant, so I'll have some slack to pick up there. We have no General Meeting programs scheduled for next year, so far! It would be nice if I could help Sandy fill in the calendar a bit. And I will need to write some stuff for the Observer.

Do I have everything under control for the party to be a success? Where are we going to find speakers for our 2019 meetings? Will the clouds ever go away so I can try to observe the comet? Will I have any time to work on the 40" this month? How can I get more people interested in working board-level position, so I can fill the Member Services position, and any others that become open? And what will I end up writing for Ad Astra?

Dec 3 21:10 — Sandy has managed to sign up speakers for January and May, and I've got tentative agreement from three astronomy grad students at Lehigh for February through March. A lot of progress since a few days ago! A breakthrough in the Programming department.

Dec 6 15:10 — Just looked at the latest email from Dave Moll, who volunteered to help me with generating questions and hosting the Trivia Contest. I made a few minor edits and then decided to mark the task complete. Thanks, Dave! I asked him to help and then let him do most of the work. Tremendous help in getting ready for the event.

Dec 8 23:10 — Well, the December General Meeting and Holiday Party is behind us, and I think it went OK. I found hosting the trivia contest to be a fairly intense experience, since it was my first time doing it, and I was really glad to have help from Dave and from Eric Loch as deejay for the background music. The hardest part was scoring the answer sheets, since it had to be done quickly and accurately! We had a few challenges from disgruntled contestants, but we only decided to rule in favor of one.

In the rush, I neglected to record the names of everybody on the winning teams. Sorry about that, but you know who you are! Congratulations to 3rd place winners, the Dwarf Stars, and 2nd place, the Sub-Orbital Pioneers. First place went to Pete's Dragon, led by LVAAS veteran Peter Detterline.

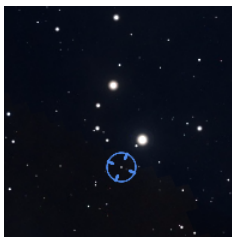
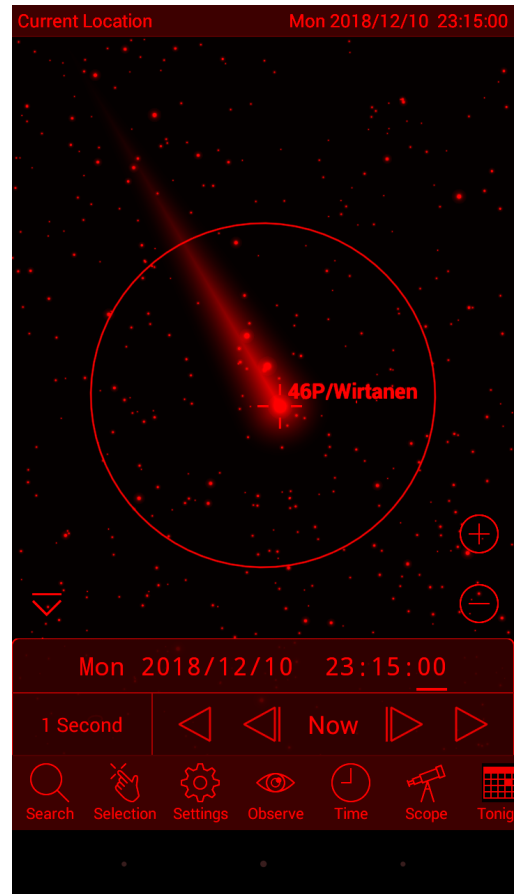
I would also like to thank Sandra Repash for her efforts, along with her niece Melissa Gallagher, in designing our unique First Place prizes. Inspired by outgoing Director and "certified lunatic" Carol Kiely, Sandra had the idea to design a 2019 calendar celebrating the 50th Anniversary of the Apollo 11 landing on the moon. Unfortunately, the usage rights for the NASA images that the calendar includes prohibit us from selling it, as we have with previous calendars that Sandra developed. So, instead, we only did a limited edition print run to use as a prize.

Dec 10 23:10 — Forgot to take out the garbage last week, but fortunately it's been cold, and I didn't make too much more this week so it all fits in the bin. Checked the calendar, the recycle bin needs to go out this week also, good thing I remembered since it is also getting kind of full. Placed them at the end of the driveway, got the mail, and looked up at all the pretty stars.

It's nice and clear! And wow, will you look at that, there's that darn comet. It's as bright as the Pleiades! No wait, that is the Pleiades. OK, let's look around a little more. Nope, I don't see it.

Fired up Sky Safari on my phone and brought up the comet. Configured it to show the FOV of my binoculars. Now I can see exactly how to find it. OK, starting from the Pleiades, there is a star about 1 field width away in the 5:00 direction, and from there another one about one field width away again in the 7:00 direction, then keep going down, a train of stars kind of like a Nike "swoosh" going a little left and then right, until you see the two stars that are about 1 degree apart, in the 11:00-5:00 orientation. From there drop straight down about 6 degrees (a little over one FOV) and find two dimmer stars a bit over 1/2 a degree apart. Should be star, star, comet, going down almost in a line.

Looking — looking — OK, I see something, but it's not quite in the right spot. Double-check, yep, Sky Safari is set to the correct date. Look some more. Darn, that has to be it, but it should match the chart. It's definitely not quite in the position shown in the app.



Dec 12 00:10 — Inside on my desktop PC, looking at <https://stellarium-web.org/>. That's more like it, their chart matches what I saw, comet down and to the left of the lower of the two stars. Funny, I would have expected Sky Safari to be spot on also.

Found a posting on the Sky Safari support forum. Looks like others have reported the issue; for some reason they do not have the most current ephemeris for the comet. Alrighty then, now that that's cleared up I can sleep.

Dec 11 22:00 — Comet probably looks about the same as last night. Didn't bother.

Dec 12 23:10 — When I went out for Wednesday night trivia at Callaghan's, it looked mostly clear. Decided to take another look at comet when I get home. Got home, cloudy; no chance to look at comet.

Dec 13 23:10 — Cloudy; no chance to look at comet.

Dec 14 15:20 — A visit to the Schlegel Observatory on a foggy, rainy afternoon, where I met a surprising number of hikers on the mountain, and two pickup trucks coming down the hill as I was going up! Had a nice chat with the guy responsible for maintaining the towers that we share the mountain top with. I just had a quick job to do, that I didn't get done earlier in the fall: to install a low-wattage heater in each of the electronics boxes, to help reduce the condensation and corrosion of the components and connections in the cold.

Since that is the only thing I got done on the project, The Schlegel Report will take a hiatus this month.

Dec 14 23:10 — Cloudy; no chance to look at comet.

Dec 15 23:10 — Cloudy; no chance to look at comet.

Dec 16 23:10 — Cloudy; no chance to look at comet.

Dec 17 23:10 — Comet gone now. Well, from the media, at least; now that it has officially hurtled past Earth, almost close enough to sweep clean the higher mountain peaks, and is receding back into the outer Solar System, it's no longer a story.

Dec 19 03:10 — It's clear, and I am parked by the side of the road near Milwaukee, PA, in something more like a shoulder than a ditch, though technically I think it would be called a ditch. Fortunately it is not icy because I am standing precariously on the slope, with all the lights turned off, leaning against the back of my Jeep and taking another look at the comet. It's big and dim and diffuse, and I am glad I went the extra mile or two to find this spot, which is nice and dark with the moon behind the trees to the West. Otherwise I probably would not have been able to see it. Good thing I have the "West Mountain" (Bald Mountain, according to USGS, but they don't live here) to shield me from the lights of Scranton. Good thing nobody else is on this road. Good thing I had the <https://adventofcode.com/> programming contest to keep me awake until the moon got low enough in the sky. Good thing that dense row of trees is there to hide it. Good thing I have a nice warm car to get into, to head back to my Mom's house in Scranton, because it's cold out and I've had enough.

Dec 24 23:10 — Well, it's about time I wrap this up and send it off to "editorlvaas." The calendar says that yesterday was the due date. I'm back at my Mom's, and my brother and his family are here, and Comet Santa is supposed to make a close approach in a few hours.

Ad Astra! Merry Christmas and a Happy New Year.

— *Rich Hogg*

Programmed to Renew

Your Membership

It's that time of year again, to update your membership with LVAAS! Don't even think about it. Just whip out the checkbook and get your dues in the mail

to:

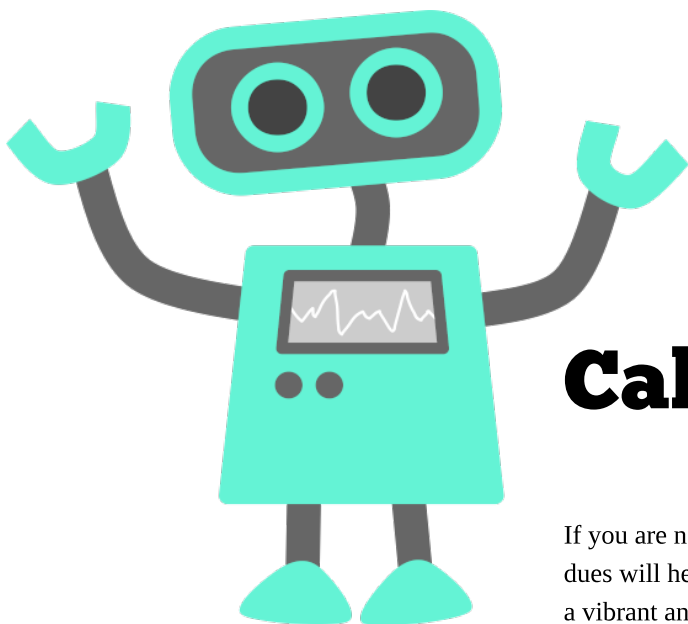
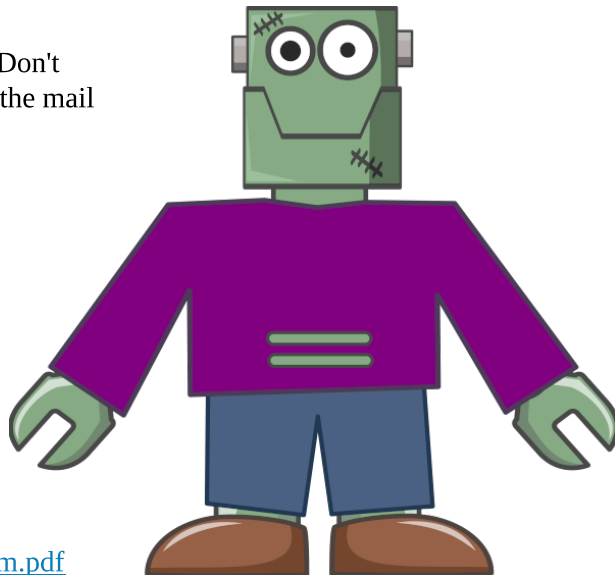
LVAAS MEMBERSHIP
c/o Gwyn Fowler
97 Yeager Rd
Lenhartsville, PA 19534-9798

<i>Regular/Associate</i>	\$45
<i>Junior</i>	\$15
<i>Family</i>	\$65
<i>Sustaining</i>	\$90

Please include the renewal form found at

http://lvaas.org/filemgmt_data/files/2019_Membership_Renewal_Form.pdf

And if you need to think about it, it should be an easy decision! Just consider not only the great benefits you receive (access to top-notch facilities and locations) but also the tremendous programs that you support (superb public events, Scouting programs, and educational outreach!)



Calculate the Benefits

Of Joining

If you are not already a member of LVAAS, please consider becoming one! Your dues will help to fund our highly beneficial programs, and you will become part of a vibrant and friendly community of great people who share your passion for the stars. Send your dues check, plus \$10 initiation, to

LVAAS MEMBERSHIP
c/o Gwyn Fowler
97 Yeager Rd
Lenhartsville, PA 19534-9798

Please include the the form at:

https://lvaas.org/filemgmt_data/files/2017_LVAAS_New_Member_Application_Form.pdf

LVAAS General Meeting - Open to the Public

Sunday, January 13, 2:00 p.m.

Trumbower Hall, Muhlenberg College
2400 Chew St., Allentown PA, 18104

"Searching for Exoplanets: NASA's Transiting Exoplanet Survey Satellite (TESS)"



Marty McGuire, NASA/JPL Solar System Ambassador

www.BackyardAstronomyGuy.com

Come learn about the NASA "TESS" mission to monitor more than 200,000 stars for temporary drops in brightness caused by planetary transits. This first-ever spaceborne all-sky transit survey will identify planets of all sizes. TESS is an MIT-led NASA mission to spend two years discovering transiting exoplanets.

Exciting New Live-Action Game!!!

RED SHIFT REVENUE

- **Operate an Astronomy Club Gift Shop!**
- **Optimize product lines!**
- **Purchase inventory!**
- **Manage production!**
- **Complete sales!**
- **Report revenue and expenses to the Board!**
- **Help a great organization do a valuable public service!**

**As LVAAS Member Services Director, you will enjoy
the challenge of operating the Red Shift
Gift Shop at Public Star Parties.**

The only way to lose is to not play!

Contact director@lvaas.org to sign up



Minutes for the LVAAS General Meeting - December 8, 2018

The December 2018 LVAAS General Meeting was held on December 8, 2018 at the Lower Macungie Community Center located in the Public Library building. The General Meeting was preceded by a brief Board of Governors Meeting, a potluck meal, and then an astronomical trivia contest. Rich Hogg and Dave Moll took care of creating all the questions and presiding over the contest. Attendance numbers were unrecorded, but they were sufficient to field a good number of trivia teams. There were some questions about the rules and at least one disagreement over the proper answer, but on the whole, the contest was amusing, informative, and for the winners, somewhat lucrative.

The General Meeting was opened by Rich Hogg, incoming Director, after the trivia contest.

Membership Director Scott Fowler reported that having had his second reading, Maurice Conner is now a full member, and that there were no first readings. Scott reminded everyone that renewals are due, and that they can be paid at the meetings or via mail, using the form on the website.

The next meeting will be Sunday, January 13, at 2:00 p.m. at Muhlenburg College, with a trip to the dining hall afterward. The speaker will be Marty McGuire, NASA JPL Solar System Ambassador.

Rich Hogg announced that the speakers for the next three meetings (Feb., Mar. and Apr.) will be Lehigh University graduate students; names and topics to be announced. In May, the speaker will be Ed Guinen from Villanova University. In addition, if possible, one meeting next year will be held at East Stroudsburg University's new planetarium.

Frances Kopy expressed thanks to Blaine Easterwood for organizing the Holiday Party at this new (for LVAAS) venue.

Treasurer Gwyn Fowler reported that there were two anonymous donations (\$200 and \$80) to help with the expenses for the holiday party costs.

The swearing-in of the new officers was dispensed with due to time considerations.

The meeting was adjourned at 5:06 p.m.

Submitted by Earl Pursell, Secretary

UACNJ Announcement:

Earl reports that there will be some items of interest to amateur astronomers at Rutgers's annual Geology Open House Jan. 26: a presentation on meteorites and tours of the historic Schank Observatory: https://geologymuseum.rutgers.edu/images/geology_museum/events/2019_Open_House_Flyer.pdf

StarWatch

by Gary A. Becker



Lee Butz: Star Salesman

I want to extend my congratulations to Mr. Lee Butz, chairman of the board of Alvin H. Butz, Inc., for his successful efforts to bring life back into the future reopening of the Allentown School District Planetarium. During 17 of my 38 years teaching in the planetarium, the Board of School Directors instructed me to raise the necessary funding to operate the facility or it would be closed. During those nearly two decades, I was able to accrue \$170,000 from evening programming and public donations, (all of it without District reimbursement for my time.) Lee raised over a quarter of a million dollars in just six weeks. I have to say that I'm just a little envious of his abilities, but both of us managed to keep the stars shining for the students in Allentown, for me in the past, for Lee and his friends, and now a brighter future for ASD pupils with the Learning Dome.

However, there is a warning that comes in tandem with this adulation, and Lee Butz seems to understand this. The excitement that will be a part of the new Learning Dome will eventually fade, and along with it the funding to keep it operational, so money must be put aside to keep the program viable for future generations. I salute that effort.

When the ASD Planetarium opened its doors in the fall of 1965 under the very capable leadership of Robert (Mike) Brown, the community excitement was so great that a second person, Richard Garger, was hired the following year. When Garger moved into administration in 1972, I came on board as the assistant director, then becoming director in 1978 when Mike Brown became an administrator at Allen High School. John Peterson then became the assistant director. By 1979 the District was already putting pressure on the planetarium even though John and I showed administration that a continued positive growth in program usage was occurring. After 1980, when John Peterson was released from service, it became one struggle after another as district officials slowly tried to erode the program until the only recourse that was afforded to me by the school board in 1993 was to raise the necessary operating expenses to keep the program sustainable. I did just that, but it wasn't all doom and gloom. It was an incredibly satisfying experience to be released from the purse strings of the District and to become independent of the many rules that guide a large public organization.

The planetarium continued to flourish due to hard work on my part and an incredibly supportive public, including *The Morning Call*, that came to my rescue whenever disaster threatened. Time and time again, it was truly a community effort that saved the ASD Planetarium, and I will always be grateful for that unwavering support. I had a wonderful career teaching the subject that I loved in Allentown, and continue to live that dream today as an astronomy educator at Moravian College.



However, less self-adulation...I need to return to Mr. Lee Butz. During the darkest days of my teaching career, when the District was aggressively trying to close the planetarium, a letter arrived from Alvin H. Butz, Inc. It was on a Friday as I recall. Inside was an unsolicited note of encouragement and a check for \$500 from Mr. Butz. In subsequent conversations, Lee said that if I ever needed financial support to keep the planetarium operational, he would get his “buddies” together to help. I pledged to myself that I would never let that happen, and I’m proud to say that it never did, but it was a wonderful safety net to have that extra support. When I told Lee about this story in early November, he had no recollection of the donation or of the inspiration that he had provided to me so long ago. I was one of so many, but to me it was a lifesaver, similar to the “Starfish in the Sea” parable. I was the starfish washed up along the shore, and Lee helped by throwing me back into the ocean to survive. Now he and his friends have done the same for this wonderful Allentown School District program.

Thank you, Lee Butz and friends for performing this small miracle which will benefit so many.

*(The preceding article appeared in the "Town Square" section of the December 5 issue of the **Morning Call**, NEWS 16)*

© Gary A. Becker – beckerg@moravian.edu or garyabecker@gmail.com
Moravian College Astronomy - astronomy.org

Now on Facebook at facebook.com/StarWatchAstro/



From the LVAAS Archives:

Paul Shenkle at the Helm in 1969

by Sandy Mesics

As 1969 started, LVAAS was holding their winter meetings on Sunday afternoons to assure safer daylight driving under unpredictable weather conditions. Prior to each general meeting, the Ursa Major Astronomical Society, the junior group, held their monthly meetings.

LVAAS officers in 1969 included Gary Becker as Secretary, William Kuhar as Treasurer, and Roland Lovejoy as Assistant director. The Director in 1969 was Paul Shenkle. A professional optician working for Questar, Paul was an avid and accomplished amateur telescope maker. Paul joined LVAAS in April 1965, and quickly became very active in the club. In 1966 and 1967 he served as Secretary. In 1968, he was Coordinator of Observations, responsible for allocating time on LVAAS observatories. He was a member of the labor committee for the Schlegel-McHugh Observatory and the 20 inch scope. He also was appointed the curator of the Planetarium and gave public shows with the Schlegel planetarium projector.

During his tenure as Director Paul undertook quantitative measurement of seeing and transparency conditions at Pulpit Rock with the University of Pennsylvania Astronomy Department. He oversaw the completion of the Schlegel-McHugh Observatory and facilitated electric service to Pulpit Rock.



Left to right: Gary Becker, Ernie Robson, and Paul Shenkle
Photo taken at the 1987 Holiday Party.

LVAAS hosted the 1969 Mid East Region of the Astronomical League Convention.

At the time, Shenkle was an employee of the Questar Corporation. He and several other Questar employees would later break away to form Optical Techniques, Inc. in 1976. OTI initially offered 4-inch and 6-inch Maksutov telescopes to compete with the Questar 3-1/2 inch and 7-inch models.

The marketing emphasis was on optical and mechanical quality. Quantum telescopes were sold for lower cost than the competing Questar telescopes, however the venture failed after four years.

The company could not produce the telescopes fast enough to meet the high demand, and the profit margin was too narrow for success. Among amateur astronomers, Quantum telescopes are highly prized even today for their optical and mechanical excellence, and fetch high prices in the antique telescope market.

Paul repeated his term as Director in 1970, and then was elected Assistant Director in 1971 and 1972. Paul remained active in LVAAS, and eventually in 1988, Paul became LVAAS's 5th Life Member. In later years, Shenkle would struggle to improve the optical set for the 20-inch telescope in the Schlegel-McHugh Observatory. In the March, 1998 Observer, an article commented that "The scope had a reputation as being one of the best guided telescopes for astrophotography, but not much to look through optically. On February 1, 1998 the optics were removed under guidance of Paul Shenkle, the project chairman. The primary mirror weighs in at just under 200 lbs. The work on the mirror will be done by Paul: His job will be to parabolize the mirror, which would shorten the focal length by 2 inches. The secondary mirror will need to be reground. Paul estimates that it will take about two years to make the necessary changes to complete the process."

Unfortunately, Paul would never complete the project. Failing health caused him to shelve the optical set. Paul passed away in 2014 at the age of 87, and the unfinished optical set was returned to LVAAS.

References

The Observer, various 1969 editions

by Gary A. Becker



Colorful Lunar Eclipse to Favor Americas

On August 21, 2017 the moon's central shadow, the umbra, swept across the continental US from coastal Oregon to coastal South Carolina producing a total solar eclipse that was specifically honed for Americans. In no other location other than the United States did the moon's shadow touch land. Just a year and a half later, there is another treat in store for us in the New Year, a total lunar eclipse, and the Americas, both North and South, are in the sweetest spots possible. In fact, northern hemispheric observers are favored, with the mid-Atlantic states in the most ideal position.

The time to pray most fervently for clear skies is the evening of Sunday, January 20 into the morning of Monday, the 21. Unlike solar eclipses where a narrow ribbon of darkness rapidly sweeps across the landscape and observers normally have to travel large distances to be immersed within it, lunar eclipses are leisurely affairs, with the full moon overtaking and slowly moving through the Earth's shadow which is projected into space. At any moment half of the world can view the eclipse, and since the Earth is spinning, some areas will rotate into the action, watching the moon rise while in eclipse, while other locales will move away from the encounter, seeing the moon set during the eclipse. The Americas, however, will see it in its entirety from start to finish, a duration of 5 hours, 15 minutes for all of the various sequences, with Earth's umbra falling on the moon for 3 hours, 17 minutes, and with the moon completely immersed in Earth's shadow for 63 minutes.

Whether you live in a large metropolitan area or in a rural location, as long as the weather cooperates, the eclipse should be visible, but more rural locales will still have the advantage. Prior to the start of the eclipse, you'll be able to witness a landscape or snowscape brightly illuminated by moonlight, with trees and other objects casting distinct shadows on the ground. Gradually, they will become subdued as the full moon "eats" its way deeper into the shadow of the Earth. In addition, the umbra is rarely totally black because sunlight shining along the circumference of the Earth is reddened (scattered) and bent (refracted) into the shadow by the atmosphere through which it must pass, creating various hues of browns, reds, oranges, and even yellows which blend across the lunar terrain. The cornucopia of colors is accented through the use of binoculars and telescopes which allows the eye to consume dozens to hundreds of times the amount of light it would see normally without any optical aid.

Finally, there are the heavens themselves, appearing greyish with only the brightest stars visible at the beginning of the eclipse, transforming into the beauty of a sky seen at new moon, rich with stars, against the backdrop of an orangey-red orb, the eclipsed moon. For East Coast observers (EST), Luna begins to appear strange by 10:10 p.m., and makes first contact with the Earth's primary shadow at 10:34 p.m. Totality spans the period between 11:41 p.m. to 12:44 a.m. By 1:51 a.m. Earth's shadow has released the moon, but a smudge of diminishing grey remains on the portion of the moon closest to the umbra until about 2:15 a.m. Add an hour for Atlantic Standard Time. Subtract one, two, or three hours for Central, Mountain, and Pacific time zones, respectively. More about this must see eclipse next week.



Lucky Shot: The total lunar eclipse of September 27, 2015 occurred over a mid-Atlantic cloud deck. Because of the moon's location from my yard, I set up my telescope under a tree without the ability to accurately polar align the scope. As the onset of totality approached, a few spotty holes in the clouds began to appear, widened, and then moved into the area of the moon just as it was completely immersed in Earth's shadow. About 90 seconds later the hole closed and no more of the eclipse was seen.

Gary A. Becker image.

© Gary A. Becker – beckerg@moravian.edu or garyabecker@gmail.com
Moravian College Astronomy - astronomy.org

Now on Facebook at [facebook.com/StarWatchAstro/](https://www.facebook.com/StarWatchAstro/)

2018 LVAAS Holiday Party and Astrotrivia Contest

Photography by Cindy Kunkel Photo-editing by Frank Lyter



Comet 46/P Wirtanen

Imager: Frank Lyter

"Hi All,

It was a fine evening at Pulpit Rock tonight. Winds were calm and skies were clear for a time to allow us to see Comet 46P/Wirtanen. We were able to see the comet via binoculars then tried to locate it in a telescope before clouds rolled in around 9 p.m. The only telescope we got a chance to see it with was Sandra's 8 inch Dob. I piggy-backed a Nikon DSLR on the Tinsley and took the attached photos. The exposures were only 15 seconds long as I was testing settings. I was planning longer exposures, but then the clouds arrived. Looking at the photos, you will see that there was a slow-moving object across the photos. Not sure if was a high altitude satellite given the slow movement. In attendance was Blaine Easterwood, Sandra Repash, Andy Heilman, Mike and Tara Leonard and me. Nice way to conclude the 2018 viewing season."



Comet 46/P Wirtanen

Imager: Frank Lyter



What's Up in the January Night Sky

by Pete Detterline

Home Must See Events Astronomy Basics Moon


MONDAY, DECEMBER 31, 2018

JANUARY MOON PHASES

Night Sky Notebook
Peter Detterline


MOON PHASES JANUARY 2019

Phase	Date	Time (EST)
New Moon	JANUARY 5	8:28 PM EST
First Quarter	JANUARY 14	1:46 AM EST
Full Moon	JANUARY 21	12:16 AM EST
Third Quarter	JANUARY 27	4:10 PM EST



Posted by Peter Detterline at 7:26 PM No comments: [M](#) [D](#) [f](#) [p](#) [G+](#)

ABOUT ME

 Peter Detterline
Follow 50
View my complete profile

CURRENT MOON PHASE

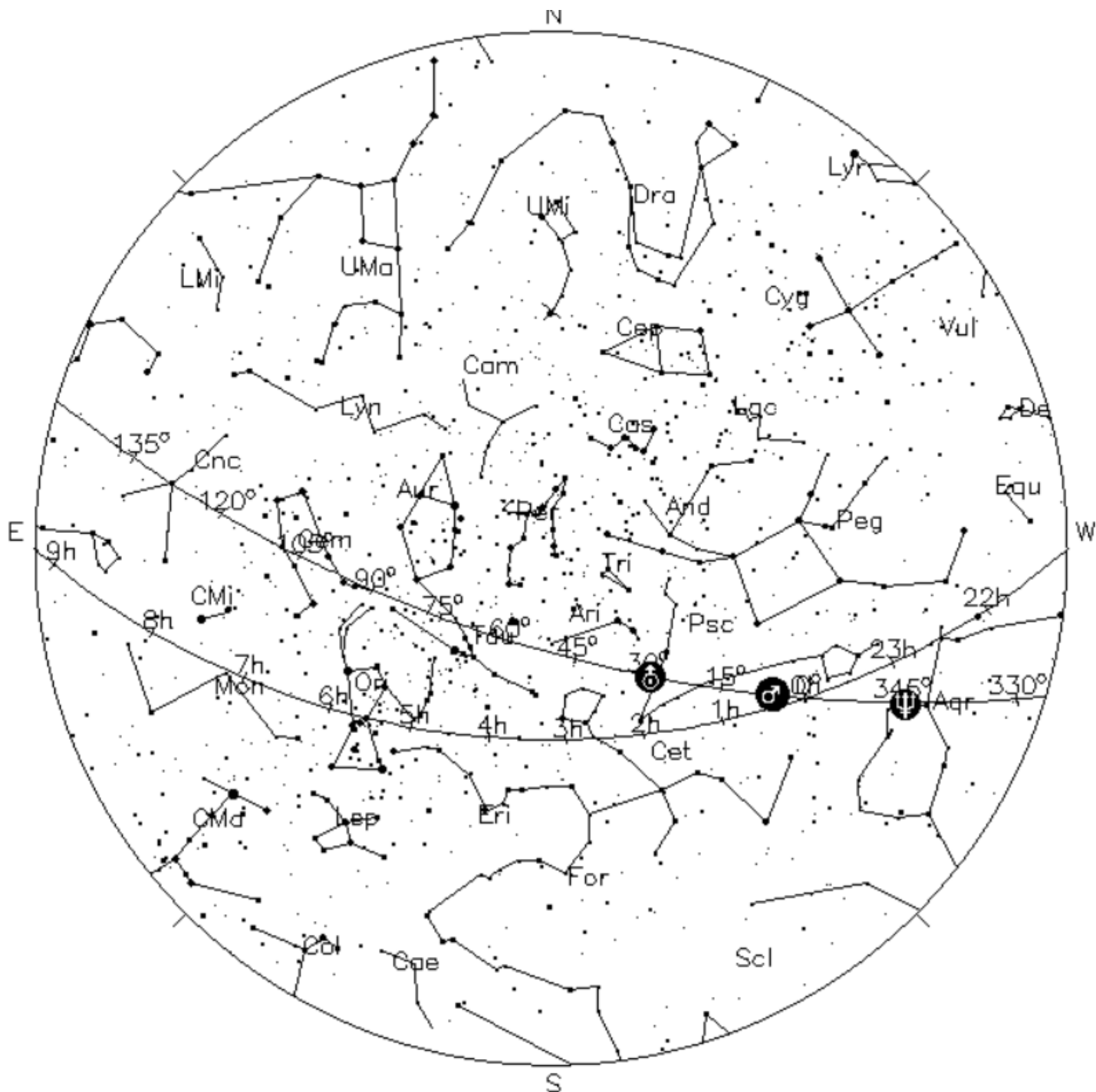
CURRENT MOON

RECEIVE EMAIL UPDATES

Email address...

[G+](#)

Sky above 40°33'58"N 75°26'5"W Wednesday 2019 Jan 9 1:00:00 UTC



Your Sky was implemented by John Walker in January and February of 1998. The calculation and display software was adapted from Home Planet for Windows.

The GIF output file generation is based upon the ppmtogif module of Jef Poskanzer's pbmplus toolkit, of which many other components were used in creating the images you see here.

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

Based on GIFENCOD by David Rowley

Lempel-Zim compression based on "compress"

Modified by Marcel Wijkstra

Copyright © 1989 by Jef Poskanzer.

[Customize Your Sky ->](#)

at : <http://www.fourmilab.ch/yoursky/>

JANUARY 2019

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		<u>01</u> New Years Day	<u>02</u>	<u>03</u>	<u>04</u>	<u>05</u> New Moon
<u>06</u>	<u>07</u>	<u>08</u> LVAAS Scout Program - South Mountain	<u>09</u>	<u>10</u>	<u>11</u>	<u>12</u>
<u>13</u> General Meeting - 2:00 PM Muhlenberg	<u>14</u> First Quarter Moon	<u>15</u>	<u>16</u>	<u>17</u>	<u>18</u>	<u>19</u>
<u>20</u> Deadline for submissions to the Observer	<u>21</u> Full Moon MLK Day	<u>22</u>	<u>23</u>	<u>24</u> Astro Imaging - 7:00 PM	<u>25</u>	<u>26</u>
<u>27</u> Last Quarter Moon LVAAS Board of Governors Meeting	<u>28</u>	<u>29</u>	<u>30</u>	<u>31</u>		

FEBRUARY 2019

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					<u>01</u>	<u>02</u>
<u>03</u>	<u>04</u> New Moon	<u>05</u>	<u>06</u>	<u>07</u>	<u>08</u>	<u>09</u>
<u>10</u> General Meeting - 2:00 PM Muhlenberg	<u>11</u>	<u>12</u> First Quarter Moon	<u>13</u>	<u>14</u>	<u>15</u>	<u>16</u>
<u>17</u> Deadline for submissions to the Observer	<u>18</u> President's Day	<u>19</u> Full Moon	<u>20</u>	<u>21</u> Astro Imaging - 7:00 PM	<u>22</u>	<u>23</u>
<u>24</u> LVAAS Board of Governors Meeting	<u>25</u>	<u>26</u> Last Quarter Moon	<u>27</u>	<u>28</u>		

2019 LVAAS Event Calendar

2019 LVAAS Event Calendar												
	Sundays				Thursday	Saturday	Mondays	Multi-Day Weekends	Moon Phase			
	General Meeting time	Date/location	Board meeting	Observer submission deadline	Astro Imaging	Star Parties	Scouts at S. Mountain	Scouts at Pulpit R.	New	First	Full	Last
January	2:00 PM	13 Muhlenberg	27	20	24	no mtg		no camping	5	14	21	27
February	2:00 PM	10 Muhlenberg	24	17	21	no mtg		no camping	4	12	19	26
March	2:00 PM	10 Muhlenberg	31	24	21	16		22-23-24	6	14	20	28
April	7:00 PM	14 S.M.	28	21	18	13		no camping	5	12	19	26
May	7:00 PM	5 S.M.	19	19	16	11		17-18-19	4	11	18	26
June	7:00 PM	9 S.M.	30	23	no mtg	8		14-15-16	3	10	17	25
July	5:00 PM	13 S.M.	28	21	no mtg	6		19-20-21	2 31	9	16	24
August	7:00 PM	10 Pulpit	25	18	no mtg	3		16-17-18	30	7	15	23
September	7:00 PM	8 S.M.	29	22	12	7		13-14-15	28	5	14	21
October	7:00 PM	13 S.M.	27	20	17	5		11-12-13	27	5	13	21
November	7:00 PM	10 S.M.	24	17	14	2		no camping	26	4	12	19
December	2:00 PM	15	29	22	12	no mtg		no camping	26	4	12	18

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 is at

NEAF
 Cherry Springs S.P.
 Stellafane
 Black Forest S.P.
 Mega Meet

April 6 – 7
 May 30-June 2
 Aug 1 – 4
 Sept 27 – 29
 May 4 – 5

Contributed by Bill Dahlenburg

Publishing images is a balancing act!

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

Put the quality in:

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

But watch the "waistline"!

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

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

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

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

Every effort is made to properly credit the sources of the material used in this publication. If additional credit is required, please notify editorlvaas@gmail.com.

No permission is required for non-profit educational use of the material in this publication. Please send a link to, or copy of the publication containing the reprinted material to the editor at the above address.

Some material in this publication may be copyrighted.

To become a member of LVAAS, please complete and submit an application form, which can be downloaded at https://lvaas.org/filemgmt_data/files/LVAASNewMemberForm.pdf

Existing members please update your LVAAS profile information by emailing the membership director at membership@lvaas.org

Copyright 2019 LVAAS, Inc.