

The Observer

The Official Publication of the Lehigh Valley Amateur Astronomical Society

<http://www.lvaas.org>

610-797-3476

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

September 2017

Volume 57 Issue 09



Inside this Issue:

Ad Astra 2

General Meeting Minutes 4

Schlegel Obs. Report 8

Ron's Ramblings 11

StarWatch 12

From LVAAS 's archives 14

Member Photos 17

Monthly Calendar 23

YourSky Map 24

Event Calendar 25

cover image: David M. Moll



ad astra*****

Our August meeting was held at Pulpit Rock, on Sunday (the rain date) rather than Saturday, which turned out to be a good choice. On Saturday the area was pounded by thunderstorms, while on Sunday it was pleasant and clear enough for decent observing later on, both of which were correctly predicted by the weather services.

The presentation, an update on the Schlegel Observatory and the 40" telescope project, was a big disappointment. The audience was advised to sit around the north side of the Spacek Observatory, to view slides, and then unfortunately learned that there would be no slides. While the presenter had spent a good deal of time preparing the slides, there was no projector. The only choice was to turn the whole thing into an ad-hoc guided tour of the instrument under construction, in the observatory itself.

So yeah, that was me, my fault. I swear that in my heart, I believed that we owned another projector that lived at Pulpit Rock. There always seemed to be one there when we needed it, and I had never grasped that someone needed to bring one, which could surely have been arranged with a bit of forethought. I hope everyone got a little something out of the session anyway, but I do apologize for the error.

Please check out The Schlegel Report in this issue for more on the state of the project, including some progress that was made in the form of learning and sharing information at the meeting.

Mission Accomplished

I am happy to report that, with one exception, every LVAAS member that I know of who attempted to see the Total Solar Eclipse succeeded. I know I felt an amazing sense of relief, in the parking lot of a Flying J Travel Center in Crossville, TN, when I realized that the last of the cards had fallen in my favor! The cloud that had obscured First Contact had moved on and there was not another around as totality approached. There were so many things that could have gone wrong, besides clouds: the projected volume of traffic, or some mishap, could have prevented reaching the totality zone; there could have been no place to park, resulting in being asked to leave by the authorities, or unable to leave our vehicle, for the big event; or someone could have waylaid us to steal our rare and precious Eclipse Glasses. I admit to being a worst-case thinker, and I'll defend it by claiming that anticipating the worst allows me to avoid it. But, certainly a lot of folks with less elaborate mission plans than mine also succeeded, which is wonderful. (At least, I didn't forget to bring any key equipment to that event.)



I do feel bad for our eminent astro-imager Mike Morgan, who had to celebrate his birthday on August 21 under the clouds along the South Carolina coast. I guess you can't have your cake and see a Total Solar Eclipse too.

The Thrill of a Lifetime

I really think that I got everything that I was looking for out of the experience, and more. I saw all of the well-known phenomena during the different phases, and they were just as wonderful as I expected. I also knew about shadow bands, and had laid out a sheet to look for them, and they obliged by being obvious and very satisfying.

Two impressions surprised me. One was the quality of the sunlight during the final quarter-hour before totality: the sun was still shining down through a crystal-clear sky, but by that time it was dimming to the point where visual adaptation could no longer compensate. Though it was sunlight, it was obviously and viscerally not the usual sun — instead, it was like being on a different planet, under a smaller or more distant star. It was a feeling that I did not anticipate and that was unlike anything I've ever experienced.

In the same vein, the last few seconds before totality felt awesome and ominous. Then, the light was dimming in "real time," as if there was an huge knob somewhere and an enormous hand was turning it down, manifesting that something — umm, *astronomical*, was about to take place. Of course, this was the time to observe shadow bands, so my attention and amazement were split between the two phenomena, but it was still an aspect of the experience that came as an unexpected delight.

There are a lot of videos out there but [this one](#) captures both of them: the shadow bands, and the light-dimming effect, to a better degree than most. It doesn't have the same effect in the video as it does when it surrounds you in an outdoor setting.

It was totally amazing, totally cool, and it totally saturated my capacity for awe. Already everyone is talking about 2024, our next chance to see one in the continental U.S. I find myself wondering if I could place myself in the middle of the southern Pacific in two years' time, instead of waiting seven.

Save the Date

Don't forget, the LVAAS 60th Anniversary Banquet will be held on Friday, November 3 on the Lehigh University Mountaintop Campus! We have signed up Jet Propulsion Laboratory's Dr. Bonnie Buratti, a long-time LVAAS favorite at our Star Parties, to be our guest of honor. By the time you read this, hopefully we will have established ticket prices, and you will be able to reserve your seats at one of the most *astronomical* events of the coming Fall season. Don't miss it!

Until then, enjoy the warm, clear days and crisp, beautiful nights when we get them. Ad Astra!

— *Rich Hogg*

General Meeting Minutes of August 13, 2017 held at Pulpit Rock Astronomical Park

The General Meeting held Sunday, August 13th was the annual meeting held at our Pulpit Rock site near Hamburg. It was rescheduled from Saturday to Sunday due to rain. The gate was manned from 5 p.m. to 7 p.m. for members and guests who did not have access keys. Slightly more than 30 members and guests attended.

Before the meeting began, Director Rich Hogg showed the crowd the baffle, the motorized focuser, and a 3" eyepiece, all for the 40" telescope. Then after a slight delay, at about 7:15 Rich began the meeting with the announcement of the schedule for the evening: the usual information session, a short break, and finishing up once it's dark with a slide presentation on the 40" project.

The information session included the following items:

Bill Dahlenburg presented a report of the nominating committee for 2018 officers. First he thanked the four current elected officers for their service: Rich Hogg, Director; Sandra Mesics, Assistant Director; Ron Kunkel, Secretary; and Gwyn Fowler, Treasurer. With the exception of Gwyn, all of these officers have already served a two year term and thus are not eligible to run for another term. To date the candidates nominated for offices for 2018 are Carol Kiely for Director, Rich Hogg for Assistant Director, Tom Duff and Earl Pursell for Secretary, and Gwyn Fowler for Treasurer. Nominations for office will still be open at the September General Meeting but then they close. The election will be then be held at the October meeting and the newly elected officers will begin their term on December 1, 2017.

As regards Public Relations, September 20th there is an event planned at the Allentown Public Library. Earl Pursell, Rich Hogg, and Warren Landis will be attending. Also that same night there will be a private star party at South Mountain for a local sailing club.

Rich updated the membership on the status of the 60th Anniversary Banquet to be held on Friday, November 3rd. The Woods Dining Room at the mountain top campus of Lehigh University has been reserved. The speaker for the evening will be long term LVAAS supporter Bonnie Buratti who has worked on the Cassini, New Horizons, and Rosetta missions. Rich is still working out details with the caterers to set up the menu and then we can determine the pricing.

A Membership report was conducted by Scott Fowler. Current membership stands at 212 members. Aaron Dotson held his second reading. First readings were conducted for Greg and Marianne Scott.

Rich also updated the membership on two recent donations to the Society. A large volume of items from the former Spacek Optical Company were removed from that property. Included in the haul were: two 9 or 10" folded refractors, a 10" Maksutov telescope, numerous mirror blanks, two spectroheliographs, about 20 optical tubes, three telescope mounts and piers, and possibly a thousand various lenses. The other donation, actually delivered to the meeting by the donor, Pam Reber, was a complete 10" LX200GPS telescope, complete with a full set of Meade 2" eyepieces,

CCD camera, control software, and numerous adaptors. Rich Hogg will be sending letters acknowledging these donations.

Carol Kiely noted that she will be conducting an eclipse watch at South Mountain for LVAAS members and guests on August 21st from about 12:30 to 4:00. The event will include a live feed of the totality. She also mentioned that the next public star party would be August 26th. She will be doing the 6:00 planetarium show and Fred Bomberger the 8:00 show.

Sandra Mesics iterated the upcoming programs for General Meetings. September 10th will be Peter Detterline and Gary Becker on follow-up to the eclipse. October 8th will likely be Brooks Thomas from Lafayette College on Dark Matter. November 12th will be Agnes Kim from Penn State on White Dwarf Stars, and December 9th will be Paul Halpern on his newly published book, The Quantum Labyrinth. September 15-17 is the 3rd rescheduled date for MegaMeet. Kyle Kramm also noted that this would coincide with the next Field Meet. For it and future Field Meets he will post details on the website Forum.

This completed the information session and began a short break, while things were to be set up for the slide presentation on the 40" project. But, it was quickly realized that we did not have a projector so instead of the slide presentation we instead adjourned to the 40" building for a thorough description of the 40" project conducted by Rich Hogg.

The mirror is now fully finished, including coatings, and is back at Lockwood Optics to now do the secondary mirror. The mirror has a usable diameter of 39.8 inches and a focal length of 146.6 inches. Completed the telescope is expected to be F/13.7 so 21mm eyepiece will yield about 600x magnification and a 100 mm eyepiece about 140x magnification. We do need to supply Lockwood with some measurements however before he can make the secondary.

Rich has been working an extensive update of the telescope and dome control and he demonstrated the 40' telescope slewing in both RA and DEC. Also the dome was rotated. Besides work on the telescope itself, much work on rehabbing the building is planned. This includes a new electrical service, rewiring the building, and a new layer of flooring on the observation deck. A new roof on the building and a remodeled bathroom are already complete. Completed the telescope will be a fully computerized GOTO.

Rich acknowledged the help of many people on the project thus far.

Lastly, the next General Meeting will be September 10th at South Mountain. The program will be a follow up to the August 21st total solar eclipse.

The meeting adjourned at 8:45 p.m.

Minutes were prepared and submitted by Secretary, Ron Kunkel.

September General Meeting At South Mountain Hdqrs

Sunday, September 10, 7:00 p.m
620B East Rock Road, Allentown PA 18103

ECLIPSE STORIES

led by

Ron Kunkel

Enjoy stories and photos of the experiences of members who traveled to view the Total Solar Eclipse, and share your own!

If you'd like to share any photos at the meeting, please send them to eclipse@lvaas.org by Friday, Sept. 8.



Ron watches the eclipse from Princeton, Kentucky

Ron Kunkel, presently LVAAS secretary, lives in Mohrsville, PA. He has been an active observer for 30+ years, and an armchair astronomer for 55+ years. Ron maintains the grounds at the Society's Pulpit Rock site. He will describe his trip to Princeton, Kentucky with fellow society member Bill Dahlenburg to observe and photograph the August Solar Eclipse.

View Ron's eclipse photos at <https://1drv.ms/f/s!AmzJouDFevBGgoMakTAZ4yaNf2qQ>

MegaMeet take 3 (or is it 4?) is scheduled for September 15-17th at Pulpit Rock Astronomical Park. Please monitor the website for updates.

Nomination Of Officers Of LVAAS For 2018 Term

NOTICE -- A Business Meeting will be convened for Election of the 2018 Society Officers at the October General Meeting

The LVAAS October General Meeting will be held on its regularly scheduled date – October 8, 2017, 7:00 p.m. at South Mountain - during which a Business Meeting will convene for the purpose of election of our 2018 LVAAS Officers.

LVAAS Full Members in good standing (current dues paid) are entitled to vote and/or be considered for office. Any society member in good standing may nominate qualified individuals until nominations are closed during the September General Meeting on September 10, 2017. At the time of nomination, nominees need to agree to accept the nomination in person, or in writing and signed by the nominee (should the nominee not be able to be present when nominated.) Except as provided for, no nomination shall be accepted by the Nominations Committee, nor shall additional nominations be placed on the ballot after the close of nominations during the September 10, 2017 General Meeting.

In the event no qualified candidate is listed for one or more positions at the time of election (October 8, 2017) the election shall go forward for the remaining offices. After the election results are verified, the nominations committee shall open the floor for the nomination of any qualified candidate to a vacant position. Any LVAAS member (in good standing and not elected to an office in the just-completed election) may be nominated for an open position, if said person has not held that position for the immediate past two consecutive terms of office.

The newly elected officers' terms begin at midnight November 30, 2017—and continue until midnight on November 30, 2018.

Nominees to date include:

<u>Director:</u>	Carol Kiely
<u>Assistant Director:</u>	Rich Hogg
<u>Secretary:</u>	Earl Pursell Tom Duff
<u>Treasurer:</u>	Gwyn Fowler

Regards,

Bill Dahlenburg -Nominating Committee Chairman

Schlegel Observatory Report

by Rich Hogg

September, 2017

This month's report will be fairly short, since we spent most of our time making plans for our eclipse expeditions, and then executing them.

Slew motors running again - we have reinstalled the slew motor driver boards and connected them to the new power supplies, and installed a crude temporary hand-paddle to control the boards. We also found that a mounting bolt was missing from the DEC motor, causing it to disengage and noisily grind its gear more and more frequently as the remaining bolt loosened up. But, we managed to replace the missing bolt, after inspecting the drive train and determining that there was no damage.

As a result, we are now once again able to position the telescope as we would like, allowing us to move forward with such things as polar alignment and tube flexure testing, as well as more mundane (but equally important) work such as cleaning up old, peeling paint in preparation for refinishing.

I have to say, I am really impressed by the mechanical design and fabrication work that has gone into this telescope, in the years before I got involved, mostly by Pete Brooks and Ralph Schlegel himself. The precision machining in the gear train delights the eyes, and to see it in action is a multi-sensory pleasure.

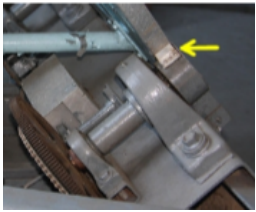
The RA drive is just fast enough to be useful operationally, slowly turning the DEC fork and the telescope tube through up to about 2 complete revolutions before we run out of cable. It does so quite smoothly, with a soft, not unpleasant whirring noise, much quieter than the much smaller amateur go-to mounts that I am familiar with. The DEC drive is significantly quicker, and eerily silent, at least until the remaining problem that we haven't yet fixed, a bit of misalignment of the chain drive, causes a bit of (mostly harmless) knocking and grinding. Seeing the telescope moving so quickly and quietly on the DEC axis is really cool, and it makes me want to improve the RA drive at some point to try to match it, although I wonder if it would actually be safer if the DEC axis made a bit more noise to match the RA.

In messing around with this, we also discovered that there is a "slip clutch" built-in to the DEC drive that we did not know about. The giant chain wheel is not actually a sprocket, it's more like a pulley, and the telescope can slip on it as needed; it can even be positioned manually in DEC if you have the reach to

grasp it with enough leverage. This is really good, because it should not effect using the scope as long as it's correctly balanced, but it should prevent damage in case we try to move it beyond its limits, or have some other motion-related issue.



DEC chain wheel



RA roller (1 of 2)

The RA drive is similar in that the big RA wheel that forms the base of the fork is driven by two rollers, again with an interface that relies on friction rather than meshed teeth. These also support the weight of the OTA and the fork, so there is a lot more friction and they are not nearly as free to slip as the DEC system.

Learnings from August meeting - we had also noticed that the OTA can be pointed down to an altitude of minus 10 degrees or so, at least to the north, which makes it easy to access the secondary housing and the front of the OTA. At our August meeting, Membership Director Scott Fowler pointed out that there was nothing but the ends of the bolts tightened into the edge of the "concrete mirror" to prevent all 500 pounds of it from tipping out of the mirror cell. Apparently it is enough, but it would be noisy and likely destructive to find out that it isn't, so we'll take some additional precautions before we do this again.

Also, Kyle Kramm, who has been helping us figure out what's needed to achieve polar alignment, pointed out that it is more than just the mounting hole on the east side of the pier that's a problem. The bracket on the west side also appears to be up against its limit, and probably will require some work with an angle grinder and a welder to make it possible to get it aligned.

Finally, I did some checking before the meeting, and determined that it is possible to bump the telescope into the lift bar that is across the dome shutter. There is not much extra room when the scope is pointed north. The lift bar, which is there to allow hoisting the mirror (and will be removed after the mirror is installed) is the only thing that really seems to interfere at this time, but this is something we'll need to keep an eye on.

Alignment Optics - in previous installments of this column I mentioned that we need some optics, for measurement of the flexure of the OTA and for the polar alignment. Well, I was rummaging around in the back room at South Mountain and I found some sort of alignment or collimation tool, which as Librarian Dave Raker pointed out, resembles a World War I German potato-masher hand grenade. So this is now officially the Potato Masher Hand Grenade Telescope (PMHGT) and so far, I have only disassembled it and cleaned the cemented doublet that forms its objective. Soon I will do some testing, but it seems to have about the right characteristics for both of these tasks.



PMHGT

Current Status and Activities: The slew motors are restored to operation and the mounting of the DEC slew motor has been repaired. Preparations are under way to evaluate the polar alignment so that required modifications to the alignment adjustments can be completed.

Christmas Tree cluster / Cone Nebula / Hubble's Variable nebula



A wide-field image (approx. 1.83 X 2.43 degrees) in Monoceros showing NGC 2264 Hubble's Variable Nebula (top left) and NGC 2264 which includes the Cone Nebula (dark, upper center), the bright nebula surrounding the Christmas Tree Cluster, and the Christmas Tree Cluster itself (lower center.) This is a 3 hour, 15 minute total exposure consisting of 39 5-minute sub exposures. Taken with an SBIG STF-8300C camera, Astro-Tech AT65EDQ quad apo scope, iOptron iEQ45 mount, and SX Lodestar X2 guider. Nebulosity4 capture, PDH2 guiding, PhotoShop CC process. Imaged February 20, 2017 from Neffs, PA. Copyright D.M. Moll.

Ron's Ramblings

Ron's Ramblings is a monthly series of articles describing some recent or otherwise important event in astronomy. The ramblings will attempt to describe both the astronomical event and its significance. Obviously, the description will be that of a rambling amateur astronomer.



Evidence for an Intermediate Mass Black Hole

There are numerous evidences for the existence of both stellar-mass black holes and super-massive black holes. Stellar-mass black holes have masses in the range of a few times the mass of the Sun. They are the end of life stage for stars that weigh more than 20 times the mass of the Sun, and many have been observed. Super-massive black holes, those weighing millions to billions of solar masses, are observed in the cores of most galaxies. But the evidence for intermediate-mass black holes is at best weak, both from an observation basis, and even from a theoretical basis, as there is no solid theory that explains how intermediate-mass black holes could form. Some astronomers doubt they even exist.

Now astronomers led by Bülent Kiziltan, from the Harvard-Smithsonian Center for Astrophysics, has proposed that a 2,200 solar mass black hole resides in the center of the globular star cluster 47 Tucanae. This claim is proposed to be the best evidence for an intermediate-mass black hole to date.

Globular star clusters are congested environments with hundreds of thousands of stars, and their centers are essentially hidden from view. But Kiziltan used a software tool, developed by two mathematicians and cryptanalysts at the National Security Agency, that attempts to extract information from an incomplete data set. Kiziltan's team first built a realistic model of the motions of the visible stars in 47 Tucanae. Then they used the motions of 25 pulsars located in the globular cluster to probe deeper into the normally invisible depths of the globular cluster. Pulsars emit radio waves as opposed to visible light.

Then using their new tool they compared the movements of the pulsars with their model of the globular cluster, and they discovered that the pulsars orbit the center of the cluster too rapidly given the number of central stars. From this they determined that an intermediate-mass black hole of some 2,200 solar masses must be lurking in the cluster's center. This claim is not likely to convince skeptical astronomers that intermediate-mass black holes exist, but it should certainly rejuvenated the theorists to revisit their theories as to how such objects might form.

References:

B. Kiziltan et al. (February 9, 2017) An Intermediate-Mass Black Hole in the Centre of the Globular Cluster 47 Tucanae. Retrieved from <http://www.nature.com/articles/doi:10.1038/nature21361>.



The end of my ramblings until next month. Ron Kunkel

by Gary A. Becker



Total Eclipse of the Heart

I had waited for this moment at least 50 years and had been teaching about it for a quarter century, and here I was on a high, windy bluff in Guernsey State Park in SE Wyoming under perfectly clear skies. Cars had been streaming into the park all morning and kicked up a continuous stream of dust that blew across the grasslands below us, but now all was quiet and expectant.

Laramie Peak, 33 miles distant, was a steel grey, and behind it and all around us the sky was becoming darker, like some ominous but gossamer thunderstorm was approaching from the west. It was the moon's shadow. The landscape around us was surreal, still sun-drenched, but as if a giant rheostat in the heavens was rapidly diminishing the sun's light. Moment by moment, the landscape dimmed. Shadows on the ground paled against the muted, greying sunlit sky. The moon's darkness grew nearer. Sol on my camera's screen was now a razor thin crescent as I imaged my last sequence before totality. In the background, I heard Moravian graduate, Sarabeth Brockley (2010) and friends cueing Bonnie Tyler's, "Total Eclipse of the Heart," one of my all-time favorite songs.

I sat by my telescope in anticipation, knowing exactly what was going to happen next, yet still feeling the same flush of wonder that had accompanied my first eclipse in 1970. The sun was still shining, but it was providing no heat. I shivered. The wind quieted in the cooling air. Vibrations of changing light rippled in the sky as shadow bands pulsated across the darkening ground. Removing my filter, I gazed skyward and looked at the sun, a point source of safe luminescence, but still too bright to see the dark disk of the moon and its surrounding crown, the corona. Totality was upon the face of the deep.

Returning to my telescope, I witnessed two giant lavender prominences dotting the upper limb of the sun. I carefully went through my series of planned images, set my camera for the egress diamond ring, then simply looked up. The prominences sparkled to the unaided eye, the delicate corona elongated near the lower limb of the sun, with the sky now a dark lapis blue surrounded by a peach-colored horizon. Binoculars revealed both faint Mars to the left of the sun and the extension of subtle coronal streamers sculpted by the sun's magnetic field.

Stunning, magnificent, glorious, and humbling was the view. The upper right limb of the eclipsed sun grew brighter, signaling the nearness of the end of totality. I returned to my camera and began imaging. The pink chromosphere returned; bright Baily's beads punching through the lunar valleys on the moon's limb gleamed and amalgamated into a spectacular diamond ring of growing brilliance, with pulsations of light as Sol returned.

Totality was over. This was my sixth total solar eclipse and the best one yet. My pictures will be online at astronomy.org in about a week, but here is one for starters.



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



From the LVAAS Archives:

“The Finest Talk” and a Report from Stellafane

by Sandy Mesics

At the September, 1967 general meeting, Dr. Igor Jurkevitch from the Space Sciences laboratory of the GE Company at Valley Forge gave a talk on stellar evolution. At the Space Sciences laboratory, Jurkevitch worked on the LST (Large Space Telescope), the OAO (Orbiting Astronomical Observatory), and the Nimbus, Ranger, Mariner, Explorer and Voyager programs. At the same time, according to the Observer, “For the last four years [1963-1967], Dr. Jurkevich has been engaged in research on planetary physics and physics of double and multiple stars. A special lecturer in the department of astronomy at the University of Pennsylvania, he is reputed to be an excellent speaker.”

Jurkevich was born in Czechoslovakia in 1928 and came to the U.S. after World War II where he received his BS at Dennison and his graduate degrees in Physics and Astronomy from the University of Pennsylvania. He was a founding editor of the AIAA Journal, a publication of the American Institute of Aeronautics and Astronautics. By 1963, he had developed a computer program to analyze light curves of eclipsing variable stars. He subsequently used this program to analyze the brightness of the Seyfert galaxy EC 120 over a 50 year period, using plates from Harvard Observatory archives. He found that IC 120 has a brightness period of 350 days.

As it turns out, later research shows that there is a massive black hole at the center of this galaxy, and matter from the accretion disk surrounding it is being drawn into the hole. About every 10 months, there is a disturbance in the accretion disk, and while some matter is drawn into the black hole, a jet of particles shoots away from the black hole. Jurkevitch’s findings closely correlate with this disturbance.



The members attending his presentation at LVAAS were obviously impressed. A comment from the October, 1967 Observer stated that his presentation was “... described by many as the finest talk ever heard in the planetarium”

Dr. Roland Lovejoy went on to report, “At a well-attended meeting, the members and guests of the society heard an excellent lecture by Dr. Igor Jurkevich on a theory of evolution of close double stars. Approximately the first third of the talk was given over to a detailed description of the evolution of a single typical Population I star.

1. Igor Jurkevich (Courtesy AAS)

In the remainder of the lecture this theory was compared with the evolutionary process of a binary star system. Using two different examples, Dr. Jurkevich explained how it was possible for one component of this system to become a helium burning star or to evolve into a white dwarf, a process that could be demonstrated by selecting suitable initial values for the masses of the components and the rate at which they exchange matter. Certain consequences of this theory were pointed out, such as the increased luminosity of the system, which exceeds that predicted by the mass luminosity law. It was pointed out that violation of this law is observed frequently in double star systems.”

Jurkevitch went on to have a long tenure at the Naval Research Laboratory, serving there from 1972 to 1992. His publications in the area of space sciences far exceeded his publications in astronomy. He was described as an “insightful scientist and a hearty and congenial personality, with a trenchant insight into the motives and accomplishments of a considerable number of Soviet space scientists.” (Koch, 1997) Jurkevich died of a heart attack on October 10, 1996, at the age of 68.

August 1937: The LVAS at Stellafane

Eighty years ago, several members of the Lehigh Valley Astronomical Society (LVAS) attended the twelfth annual convention of The Springfield Telescope Makers on Saturday August the 14th, 1937 at their Springfield, Vermont site “Stellafane.” The following are excerpts from a report written by LVAS Secretary Eugene Carl.

“...At about two or three o’clock in the afternoon many telescopes from many sections of the country were set up at “Stellafane,” and all those who were interested were examining their favorite scopes. Many persons brought their cameras with them and spent most of the afternoon taking pictures of these splendid pieces of work.

“This was followed by the supper which was held this year about 6:30 p.m. at which time everyone enjoyed the famous “bean hole beans” baked by old Mr. Redfield who is also an originator of astronomical poetry and is eight-six years of age.

“Then the meeting was held, starting at about 8:30 p.m. It was again conducted by one of the originators of the Springfield Telescope Makers, Mr. John Pierce of Springfield. The main portions of the meeting included speeches by persons representing other clubs and societies at which time Eugene Carl spoke for the Allentown group and the LVAS.

“Two well-known speakers of the evening included Mr. James Stokley from the Franklin Institute in Philadelphia and Mr. Russell Porter, the organizer of the Springfield Telescope Makers and a designer of the 200 inch telescope to be erected on top of Mt. Palomar in California for the Mt. Wilson Observatory. Mr. Porter brought movies of the great mechanism with him which showed the giant mirror’s travel across the continent from Corning N.Y. to Mt. Palomar.

“After the meeting, however, everyone seemed to turn all eyes toward the splendid heavens. The evening was perfect, the sky being literally studded with stars. The heavens itself was an inspiring sight. The Milky Way streamed from one horizon to another, the moon was low in the western sky, Mars, Jupiter and Saturn were visible and, greatest of all, many saw the much talked of “Finsler Comet” with the naked eye and needless to say it was wonderful in a telescope.

“So after a full evening of this magnificent celestial entertainment we headed down the trail again, the next morning to be homeward bound.”



Left to right: Unidentified man with pipe, Eugene Carl, Dr. George Knecht, two unidentified women, one unidentified man, LH Cutten, President of the LVAS, and Ralph Schlegel. (Photo courtesy of Springfield Telescope Makers.)

Sources

Observer, October 1967.

Koch, R.H. Igor Jurkevich Obituary. Bulletin of the American Astronomical Society; vol. 29, no. 4, pp. 1474-1475.

Minutes of the LVAS: August and September, 1937.

Solar Eclipse 2017



Kaitie Smith, photographer, from Cane Creek Park, Cookeville, TN using 80mm Stellervue, Thousands Oaks solar filter, 24mm Panoptic eyepiece and a Galaxy S8 smartphone.



Sandra Repash, photographer, viewing from South Mountain's Brooks Observatory, imaged Pete Brooks and photographer Lisabeth Hughes at the LVAAS Eclipse party, hosted by Carol Kiely, with assistance from Chris Kiely and Pete Brooks.



https://www.youtube.com/watch?v=E2P_mU--0k4

For a different take, photographer **Frank Lyter** shot video and images of the crowd reaction to the celestial event, above and (R) from Baker City, Oregon.



The Eclipse Party at South Mountain



Photographs were kindly taken by one our guests, Lisabeth Hughes

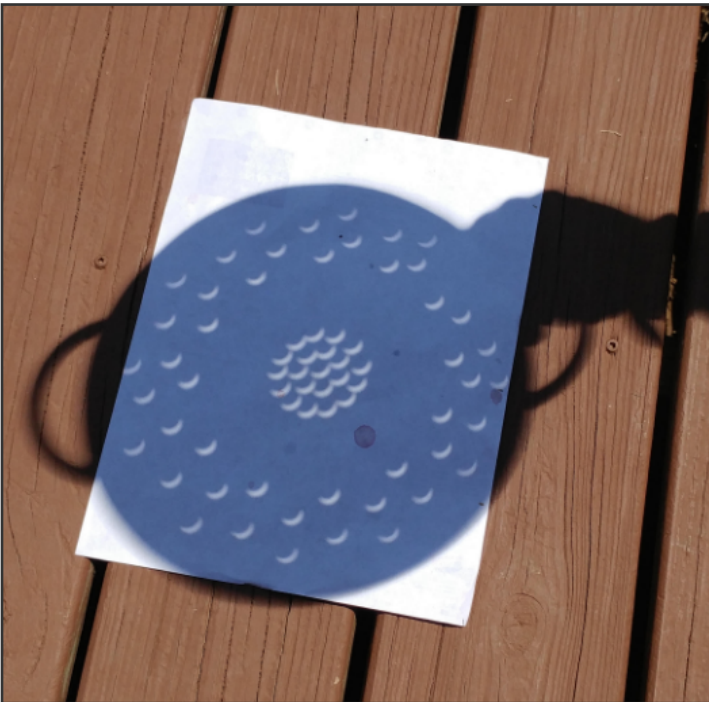


Photographer **Bill Dahlenburg** shot these images from Princeton, KY

View **Ron Kunkel's** eclipse photos on his online platform:
<https://1drv.ms/f/s!AmzJouDFevBGgoMakTAZ4yaNaNf2qQ>



Photographer **Rich Hogg's** view from Crossville, TN shows the partial eclipse projected in the "Super Solar Viewer" made from this kit: <http://www.surplussed.com/pages/item/114766.html> and also Rich's binoculars with filters made from Seymour Solar film. The Hogg setup, with Rich's brother Blair and his nephew Jeff, who is adjusting the SSV.

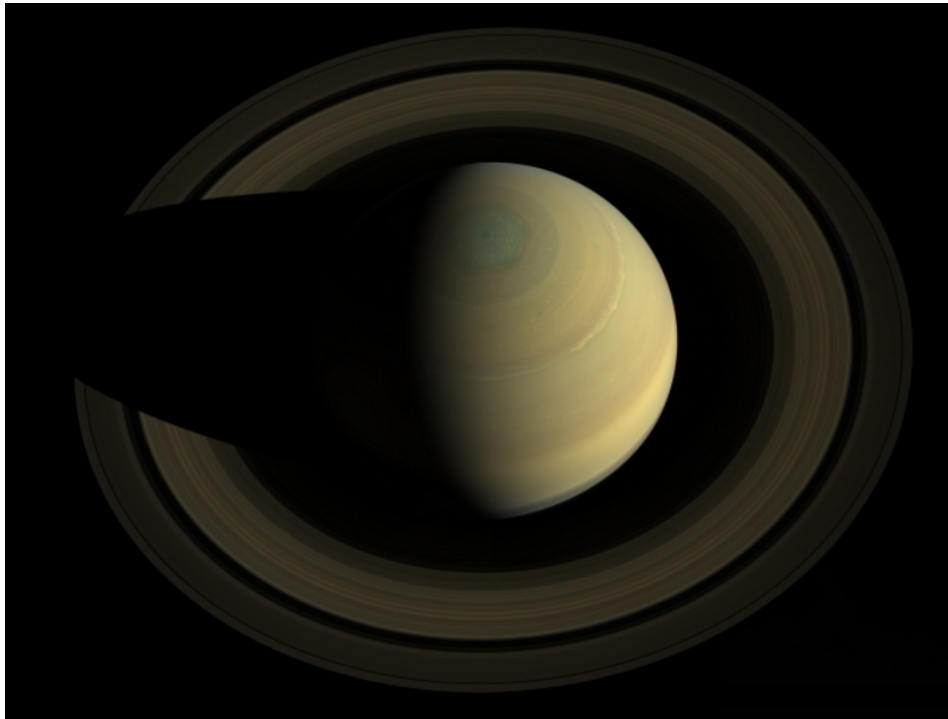


Photographer **Earl Pursell** captured these images from Alcoa, TN, including the last one of the partial eclipse through a colander. (Hopefully he didn't strain his eyes.)

Thanks to all who submitted photos and here's looking forward to 2024 everyone!



a tribute...



A swing high above Saturn by NASA's Cassini spacecraft revealed this stately view of the golden-hued planet and its main rings. *Image Credit: NASA/JPL-Caltech/SSI/Cornell*

https://www.nasa.gov/mission_pages/cassini/multimedia/pia17474.html#.Wat_5hmGPrd

CASSINI'S TWILIGHT

Earth has whirled thirteen times around the sun
Since I arrived, shiny and clean,
Gleaming in the rings' icy light
And in my Mayfly life I have seen ten thousand wonders:
Garden hose geysers spraying from Enceladus' pole,
Through Tiger Stripe scars carved into its frozen face;
Titan's cinnamon-hued tholin lakes, dark as tar
To my snooping radar, their syrupy waves lapping
In slow motion beneath racing methane clouds, and more...

But I am done soaring above this planet's swarm
Of moons. Soon its quicksand atmosphere will grab at me,
Clutch at me with skeletal hands, dragging
Me down to my doom - my life will soon be over.
When I am gone dusty rovers will still roam rusted Barsoom,
Paparazzi probes will still shout "over here!" at the Moon,
New Horizons will speed on towards MU69... but I
Will be just a memory.

For I have been sentenced to death by fire,
Condemned to die as a bolide
Streaking through Saturn's sky trailing streamers of flame.
But I swear I will scream in defiance as I leave,
As the shrieking winds rip and tear pieces from me,
Cartwheeling away to burn up in a flurry of shooting stars,
The Cassini Meteor Shower reaching its first and only peak -
And then... silence, my once-beautiful cameras, boom and HGA
Reduced to a haze of soot drifting through the clouds,
And proud Saturn will be alone once more...

(c) Stuart Atkinson 2017

Reproduced with permission from the author

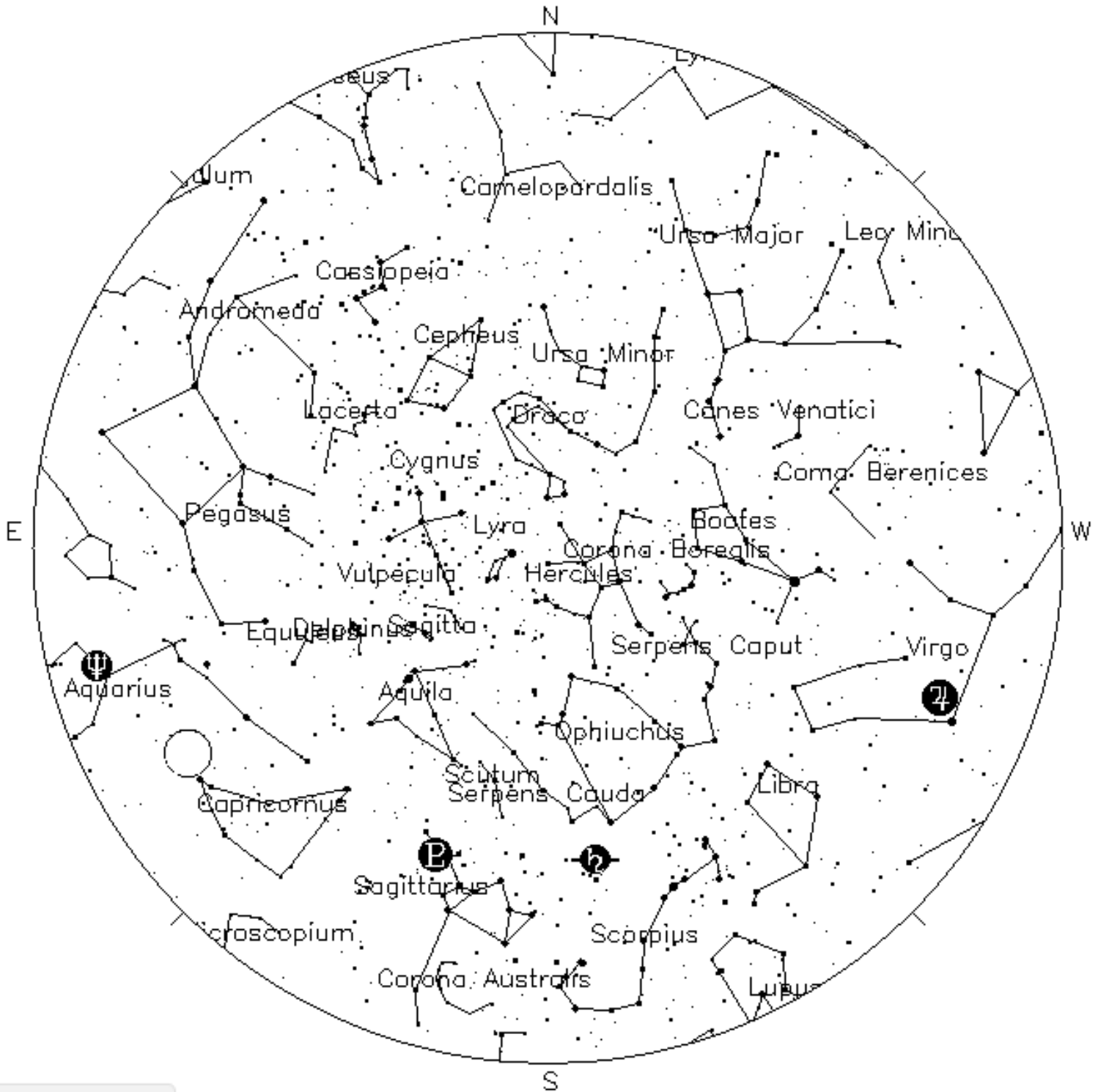
SEPTEMBER 2017

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					01	02
03	04	05	06 Full Moon	07 Astro Imaging 7:00 PM	08	09
10 General Meeting - South Mountain 7:00 PM	11	12	13 Last Quarter Moon	14	15	16
17 Deadline for submissions to the Observer	18	19	20 New Moon Star Party for the Windward Sailing Club	21	22	23
24 LVAAS Board of Governors Meeting	25	26	27 First Quarter Moon	28	29	30 Star Party

OCTOBER 2017

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

Sky above 40°33'58"N 75°26'5"W at Tues 2017 Sept 5 0:00 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 [mgardi@watdscu.waterloo.edu].

Lempel-Zim compression based on "compress"

Modified by Marcel Wijkstra [wijkstra@fwi.uva.nl]

Copyright © 1989 by Jef Poskanzer.

Check out additional features of **Your Sky** at : <http://www.fourmilab.ch/yoursky/>

2017 LVAAS Event Calendar

* Lunatics and Stargazers has been discontinued until further notice

2017 LVAAS Event Calendar

	Sundays		Board meeting	Thursday	Friday	Saturday	Mondays	Multi-Day Weekends Scouts at Pulpit R.	Moon Phase			
	General Meeting time	location		Astro-Imaging	Lunatics and Stargazers	Star Parties	Scouts at S. Mountain		New	First	Full	Last
January	2:00 PM 8	Muhlenberg	29	12	no mtg	no mtg		no camping	27	5	12	19
February	2:00 PM 12	Muhlenberg	26	9	no mtg	no mtg		no camping	26	3	10	18
March	2:00 PM 12	Muhlenberg	26	9	3 & 31	4		no camping	27	5	12	20
April	9	S.M.	30	13	no mtg	1		7 - 9	26	3	11	19
May	7	S.M.	21	11	5	6		19 - 21	25	2	10	18
June	11	S.M.	25	no mtg	2	3		9 - 11	23	1 30	9	17
July	05:00 PM 8	S.M.	30	no mtg	28	29		14 - 16	23	30	9	16
August	12	Pulpit	27	no mtg	25	26		4 - 6	21	29	7	14
September	10	S.M.	24	7	29	30		8 - 10	20	27	6	13
October	8	S.M.	29	5	27	28		6 - 8	19	27	5	12
November	2:00 PM 12	S.M.	26	2	no mtg	25		3 - 5	18	26	4	10
December	2:00 PM 9	Grace Community	17	7	no mtg	no mtg		no camping	18	26	3	10

Megameet is currently scheduled for September 15-17. A new rain date will be announced.

July, Aug & Dec are Saturday meetings with rain date on Sunday

Jan., Feb., and March meetings are at Muhlenberg College

August meeting is at Pulpit Rock

December meeting / Holiday Party is at at Grace Community Church

All meetings 7 P.M. unless otherwise noted

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

<http://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 (LVAAS) Inc., 620-B East Rock Road, Allentown, PA, 18103 and as of June 2016, is available for public viewing. Contact the editor at editorlvaas@gmail.com.

Members please use above email address for submissions.

Society members who would like to submit articles or images for publication should kindly do so by the Sunday before the monthly meeting of the BOG (please see calendar on website) for the article to appear in the upcoming month's issue. PDF format is preferred. Early submissions are greatly appreciated. Articles may be edited for publication. Your 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 for a timely correction.

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 follow the directions on the application form, which can be downloaded at: http://lvaas.org/filemgmt_data/files/LVAAS2017MembershipRenewalForm.pdf.

For existing members to update LVAAS information, or to make member contact changes or corrections, please email the membership director membership@lvaas.org.

Copyright 2017 LVAAS, Inc.