THE EVENT HORIZON

ST. LOUIS ASTRONOMICAL SOCIETY

Devoted to the Interest and Advancement of the Science of Astronomy

VOLUME 29, Issue 1
January, 2019

Comets after Rosetta and New Horizons -What Have We Learned from Space and Ground Based Observations

by

Dr. Erika Gibb
University of Missouri—St. Louis

Dr. Erika Gibb of The University of Missouri – Saint Louis was featured at the January meeting of the St. Louis Astronomical Society.

Until the seventeenth century, comets were thought to be omens of major future events and often warnings of approaching disasters. Now we understand them to be small bodies of ices and rock, orbiting the sun in, for most comets, very elongated paths. For a short time each orbit, some may come close enough to the sun to develop a fuzzy head and a long, streaming tail.

Dr. Gibb discussed a combination of recent ground and space based observations of comets and what we are learning about the early solar system.

Dr. Erika Gibb is an astrobiologist interested in studying comets and protoplanetary disks to learn more about how astrobiologically important molecules, like water, form and are distributed in young planetary systems. She earned a Ph.D. from Rensselaer Polytechnic Institute in 2001 and after post-doctoral positions at NASA Goddard Space Flight Center and the University of Notre Dame, she joined the faculty at the University of Missouri - St. Louis. She is currently a Professor and Chair of the Department of Physics and Astronomy. Dr. Gibb and her students perform high-resolution, near-infrared spectroscopic observations of comets from Keck II and the NASA Infrared Telescope Facility and have collaborators around the world who study comets from all wavelengths.

Presentations for 2019

Feb K Michael Malolepszy - Recent Radio Astronomy Developments from ALMA
March Bruce Stinchcomb, PhD Meteorites Flo-Valley
April Bob King "Astro Bob" (1)
May Craig O'Mara Flying SOFIA NASA
June Josiah Lewis, PhD Presolar Grains: Solids from Other Stars Wash U
July Ryan Clegg-Watkins, PhD Exploring the Moon from Orbit Wash U
August Angela Speck, PhD 2019 Solar Eclipse Results University of Missouri
September Don Hampton,PhD Aurora Borealis & Steve (1) UAF
October Claire Chandler, PhD Super-Earths and the Formation of the Solar System NRAO
December Duncan Lorimer, PhD Fast Radio Bursts: "Lorimer Bursts" (1) UWVA

Inside This Issue

President's Corner, Danville Observing Report	2
Total Lunar Eclipse Gallery	4
Gallery	5
MSRAL, Francis Park	6
Board minutes	7
Financials	9
Events	10
Contacts	11

Mark Your Calendars Now!

Homemade Fest!

Saturday, February 16 5-10 pm, Food Served at 6:00PM

Kirkwood Community Center, Kirkwood Park

Pot Luck, bring your favorite hot dish!

See Brad Waller if you wish to make a presentation!

Tell us about anything related to astronomy.
New item you bought, built, or learned how to use!

Presidents Corner *by* Jim Small

Apologies for the tardiness… well ok lateness…. Uh… dang, it's FEBRUARY…. Just a bit late for the January issue. I hear I'm taking a lot of heat for the tardiness, but I haven't read about it yet.

We had a terrific meeting for January with Dr. Erika Gibb FINALLY able to work out a month to host her talk! Thanks to Brad Waller for scheduling. She gave a great update to knowledge gained about the composition of comets from the latest research. We had more than half an hour of great questions to end the talk.

The February meeting will feature our own Mike Malolepszy talking about recent radio astronomy developments focusing on the Atacama Large Millimeter/ submillimeter Array (ALMA). Mike has worked at the VLA in the past so his talk should be great! If you haven't seen him do a presentation, you're in for a treat!

Homemade Fest is booked last week for February 16th, the day after our February meeting! Once again, Kirkwood Parks has generously donated their room at the community center. Just park and enter where the flagpole is! We look forward to learning about new items and ideas you might have about astronomy. Think about making a presentation of any aspect of astronomy you are interested in. It could be a new software package or app you are using, piece of equipment you bought or designed…. Photographs of the eclipse or other events… whatever you want! We would like to hear about it! Talk to Brad Waller to get on the presentation list.

Progress is being made with the Jefferson College Observatory and we expect to be able to make an official announcement soon.

MSRAL is coming up June 14-16 in Kansas City. Watch for registration information to be available soon.

ALCON 2019 will be very unique. The league has procured a good deal on a cruise to the Bahamas for the weekend leaving from Cape Kennedy. Tours of the Kennedy Space Center will be part of the convention. You will not be able to get a better deal on a cruise of this type. Dates are from July 25-29. Hope to see you there!

See you at the next meeting and Homemade Fest!

Danville Observing Report January 5, 2019 *by* Bill Breeden

DANVILLE, MO – Saturday, January 5, 2019. New Moon – check. Clear skies – check. Mild temperatures – check. Very light breeze – check. Weekend – check. Planned dark-sky event – check. Good seeing and transparency – check. Other members signed up too – check.

The checklist above does not come together easily, even in summer. But for this to occur in the dead of winter, in January nonetheless, is rather rare. For all practical purposes, this was the perfect night. 2018 was quite disappointing for stargazing, so this was a GREAT START for the 2019 astronomy year! Just hours before the event, I sent a last-call from Night Sky Network to get more people to join us. I could see the variables all culminating in our favor, and I wanted to be sure all members had the opportunity to gaze in wonder at the winter sky from our favorite dark-sky site. I will just say it once and get it out of the way: If you missed this one, it might be a decade until we have a night like this again.

It was dark by 5:30PM, and I arrived about 6:00. Cook Feldman was already there, and just about set up with his 8-inch Dobsonian telescope. I am used to setting up with some daylight remaining, so it was interesting to set up in nearly total darkness. Temperatures were unbelievably mild for January, in the mid-50s, and would stay that way for our whole evening stargazing session. Winds were negligible at 5MPH or less, and there was not a cloud in the sky. Orion was rising in the east in all its bright glory, with the Orion Nebula (M42) clearly visible to the unaided eye. This was going to be remarkable night!

In addition to Cook and me, Bill and Ben Winningham, Jim Twellman, and new member Paul Talaski also came out to enjoy some dark-sky observing.

Orion had risen completely, but was still somewhat low in the east. So, I wanted to save my wow-factor-viewing of the Orion Nebula for later, when Orion would be higher, and the view would be even more spectacular. So, I started out by heading for the Crab Nebula (M1) in Taurus. Usually a disappointing target, that would not be the case tonight. Wow – it was bright and obvious in my 8-inch Schmidt-Cassegrain telescope with 24mm TeleVue Panoptic eyepiece. The nebula was framed very nicely. It appeared as a somewhat bright oval thumbprint, surrounded by many bright background stars in Taurus. This was, by far, the best view of M1 I have had to date.

Before I could move to another target, excitement was building up among our group. Jim announced that he had a view of the Sculptor Galaxy (NGC253) in his large Dobsonian, and was offering to share the view. Yes! The constellation Sculptor was on the meridian, so this was the time to observe it. The view was nothing short of amazing. The galaxy is tilted about 45 degrees for earth-bound viewers, which is at the sweet-spot for giving a spiral galaxy that 3D -like appearance. And, it was much brighter than I expected! I had to see what it would look like through my "small" 8-inch SCT. Surprisingly, NGC253 was quite impressive through it as well. I will certainly revisit this galaxy should another winter dark-sky observing opportunity ever happen again!

Next, I slewed my SCT to the Flaming Star Nebula (IC405) in Auriga. This small sixth-magnitude nebula appears perfectly arranged surrounding a star, giving the star a "flaming" appearance. The view in my 24mm Panoptic was quite striking.

(Continued on page 3)

(Continued from page 2)

A highlight tonight was a chance to see the Horsehead Nebula in Orion. Ask any amateur astronomer – this is a bucket list target. Its shape and image are instantly recognized in pictures, but seeing it visually – in any telescope – is frustratingly difficult. Low surface brightness, large size, and low contrast, combined with the expectations from years of seeing pictures, make this object incredibly hard to just see at all. But with Jim's large Dobsonian, along with coaching while looking through the eyepiece, made it possible. The

Horsehead is larger than you expect, and the shape is illusive. It appears as a very, very faint thumb-shaped notch taken from very wispy nebulosity. Experience at the eyepiece is very helpful – experienced visual observers can see far fainter objects than someone expecting a bright, colorful object in the eyepiece. Thank you, Jim, for this treat!

Orion had finally risen high, not quite at meridian but upright, so it was time to observe the Great Orion Nebula. WOW – it was large and bright, even without any type of filter. With a quick twist of the focus knob, the Trapezium popped into pin-point sharpness. Off to the side, there are three stars that resemble a miniature Orion's belt, and the nebula itself spread its wings across the entire field of view. It was wonderful!

Time for a break. Hot cocoa and cookies gave me a nice sugar rush, just to add to the excitement of the night. I sat back in my lawn chair sipping hot cocoa, looking south at the bright stars of winter. Betelgeuse, Bellatrix, Saiph, Rigel, Sirius, Procyon, Pollux, Castor, Capella, the Belt stars, Aldebaran, the Hyades, Mars – the winter sky looks like a grand view of an open cluster through a wide-angle eyepiece. I just sat, sipped, stared, and smiled.

Back to my telescope! How about a carbon star? As red as Betelgeuse appears to the unaided eye, so does W Orionis through my 24mm Panoptic. Seeing color through the eyepiece is always a treat, and carbon stars give you a nice dose of color to spice things up a bit.

M50 has always been a favorite open cluster of mine, but I don't get to observe it very often while not shivering in the cold. Tonight, was different. Monoceros, positioned just northeast of Orion, is most certainly a winter constellation, and usually saves its treasures for the coldest of nights. What a treat to sit and observe M50 in relative comfort! Through the 24mm, the cluster's hundreds of diamonds sparkled, spread out evenly across the 49-arcminute true field of view.

The observing continued for me until about 10:30PM, giving me nearly 5 hours under the January sky. A thermos filled with hot cocoa is helpful during winter stargazing nights, but more helpful were the 50-degree temperatures. It was glorious!

Here are most of the objects I observed tonight:

W Orionis, a very red carbon star, magnitude 5.8.
M1, Crab Nebula in Taurus.
M36, M37, and M38, open clusters in Auriga, mag. 6.3, 6,2, and 7.4.
M42 and M43, The Great Orion Nebula.
M78, emission nebula in Orion, mag. 10.3.
M79, globular cluster in Lepus, mag. 8.4.
IC405, Flaming Star Nebula in Auriga, mag. 6.
The Hyades open cluster in Taurus, mag. 1.
NGC253, the Sculptor Galaxy, mag. 8.
NGC869 and NGC884, the Double Cluster in Perseus.
M103, open cluster in Cassiopeia, mag. 7.4.
M50, open cluster in Monoceros, mag. 5.9.
M34, open cluster in Perseus, mag. 5.5.
The Pleiades (M45) in Taurus, mag. 1.6.
M77, galaxy in Cetus, mag. 8.9.
IC434 / B33, the Horsehead Nebula in Orion.

I used just one eyepiece the entire night, my 24mm Tele-Vue Panoptic. This is a wonderful eyepiece for an 8-inch SCT. It has a 68-degree apparent field-of-view, a very comfortable 15mm of eye relief, and provides 83x of magnification in my scope. Positioning the eye for the best view is easy. It also produces the largest true field-of-view possible in a 1.25" eyepiece. I love everything about this eyepiece!

Members, I implore you to watch your email for dark-sky site observing event announcements. If you have not experienced observing at our dark-sky site with other SLAS members, you are missing a major benefit of membership. Come on out next time!

Clear Skies, ***Bill Breeden***

Total Lunar Eclipse January 20, 2019

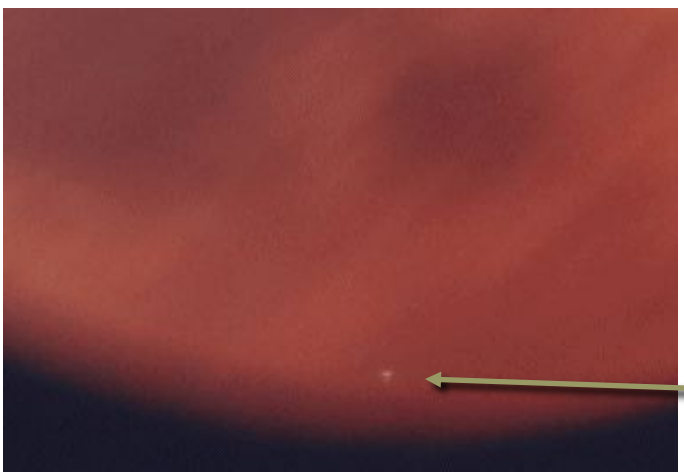
SLAS member John King's niece Erin captured these photos of the Total Lunar Eclipse from Massachusetts, where they had clear weather for the event in contrast to the local situation.

It turns out if you stayed up late enough, you could see some of the partial eclipse before totality peeking through the clouds. About halfway through totality, it cleared off at my location in Kirkwood and remained clear for the rest of the eclipse. Photos by Jim Small

After the eclipse was over, people evaluating video discovered an impact that occurred during totality. The word went out and amateurs began checking to see if they could see the impact at 4:41:38 UTC. Our own Grant Martin checked his video and sure enough, there it was! Below are a couple of images of the impact. The website will host a GIF blinking a before and after of the impact. The impact was equivalent to a ton of TNT. Here are links to an article and a paper about the parameters of the impact.

Article: https://www.cnet.com/news/asteroid-impact-during-the-blood-moon-was-equal-to-a-ton-of-tnt/

Paper: https://arxiv.org/abs/1901.09573 The full paper is available as a pdf download



Top left: Telescopes set up for First Friday at the James S. McDonnell Planetarium. It was a bit cold, so there wasn't a huge turnout. **Top right:** Brad Waller "mugs" Dr. Erika Gibb, the speaker for the January meeting by giving her one of the SLAS eclipse mugs. Dr. Gibb did a terrific job of catching us up on what has been learned about comets and their composition from recent research. Her specialty is astrobiology and particularly the study of organic molecules found in comets. **Above and below left:** Dr. Gibb answers questions from the audience about methods and what the data means.

Right: Jim Twellman receives his certificate and pin in recognition of 15 years of membership in SLAS from Hospitality Chair Larry Campbell

MSRAL 2019 Convention of the Mid-States Region

Friday afternoon June 14-Sunday noon, June 16, 2019
at
Rockhurst University 1100 Rockhurst Road Kansas City, MO 64110
Hosted by The Astronomical Society of Kansas City

• Special Speakers • Scheduled visit to Linda Hall Library's rare astronomy book collection

• StarBQue Friday night and visit to Powell Observatory, Louisburg, KS • Vendors

• Astrophotography contest • Special student registration rate • Visitors come early to enjoy other special places as Powell Gardens, Truman Presidential Library, Nelson-Atkins Art Museum and Union Station with its special Burns & McDonald sponsored Science City

Francis Park Stargazing 2019 Schedule

Presented by the St. Louis Astronomical Society

***Enjoy* Wednesday night stargazing sessions at Francis Park, weather permitting.**

All are welcome to join us! Stop by and take a look at the Moon, or bring your observing gear. This event is scheduled near the First Quarter Moon each month, so we provide views of craters, mountains, and shadows on the Lunar surface. Members of the St. Louis Astronomical Society also share telescope views of illusive Mercury, bright Venus, the Red Planet Mars, giant Jupiter, the ringed planet Saturn, and distant Uranus and Neptune when they are visible. You may even be able to see the moons of Jupiter and Saturn, or a distant double star!

2019 FRANCIS PARK STARGAZING SCHEDULE This schedule also lists planets that we can observe!

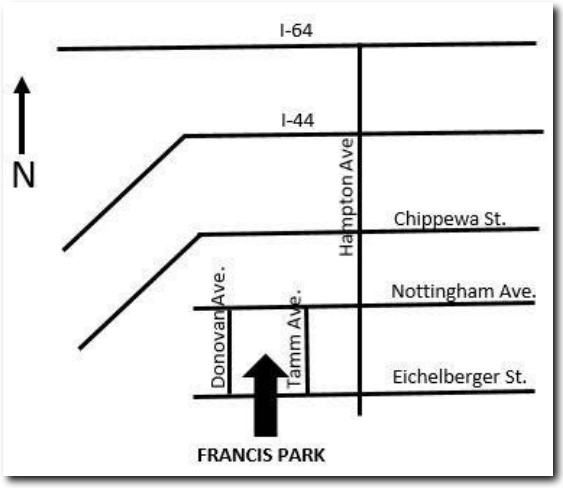
Date	Time	Moon Age	Planets we can Observe
Wednesday, April 10	7:00-9:30PM	6 days (first quarter)	Mars.
Wednesday, May 8	7:00-9:30PM	4 days (waxing cres.)	Mars.
Wednesday, June 5	7:00-9:30PM	3 days (waxing cres.)	Mercury, Mars, Saturn.
Wednesday, July 10	7:00-9:30PM	9 days (waxing gibb.)	Jupiter, Pluto.
Wednesday, August 7	7:00-9:30PM	7 days (first quarter)	Jupiter, Saturn, Pluto.
Wednesday, September 4	7:00-9:30PM	6 days (first quarter)	Jupiter, Saturn, Nept Pluto.
Wednesday, October 2	7:00-9:30PM	4 days (waxing cres.)	Jupiter, Saturn, Nept, Pluto.
Wednesday, October 30	7:00-9:30PM	3 days (waxing cres.)	Jupiter, Saturn, Uranus, Neptune, Pluto.

Come Visit Us!

Francis Park is located in south St. Louis City. Take Interstate 64 or Interstate 44 to Hampton Ave South. Go south on Hampton Ave. to Eichelberger Ave. Turn RIGHT on Eichelberger Ave. Turn RIGHT on Tamm Ave. We set up on Tamm Ave. at Itaska St. on the park-side of the street.

Events are canceled for clouds, inclement, or extreme weather.

For updated cancellation information, visit our website at www.slasonline.org. Scroll down to see our calendar, and look for Francis Park Stargazing. If the event has been canceled, it will say "Cancelled" beside the event. Cancelations are posted by 3:00PM on the date of the event.



SLAS Executive Board Meeting Minutes December 6, 2018

1. Opening Activities: Attending: Jim Small, Mark Jones, Bill Winningham, Bradley Waller, Rich Heuermann, Brent Buch, Larry Campbell Meeting opened at 7:04pm Nov 2018 minutes distributed before the meeting. Motion to approve the minutes by Brad seconded by Larry, minutes were approved

2. External Business Science Center Liaison: Email from Cook Feldman: You may want to start thinking about someone to take over acting as the liaison and lead for the events at the SLSC. I have been doing it for going on 26 years and it may be the time to pass the baton at the end of 2019. The one caveat is that the person who chooses to do this needs to be at each event including the First Friday events each month. They will also need to be prepared to offer an indoor program for the First Friday events. We can have further discussions as we progress through 2019. I have all the known SLSC events on the NSN calendar and I will tighten up the proposed 50th anniversary event for Apollo 11. Brad is interest in this position. Jim will ask Cook to write article for newsletter.

Next board meeting: Board meetings will be held at Nicoletti's Restaurant in Valley Park until further notice. Proposal for board meeting dates for 2019: 1st Thursday dates include: Jan 3, Feb 7, Mar 7, Apr 4, May 2, Jun 6, Jul 11 (4th is 1st Thursday), Aug 1, Sep 5, Oct 3, Nov 7, Dec 5

3. Director Reports:

President – Jim Small: No report

Vice President: Bradley R Waller

Presentations 2018

SLAS Monthly Meetings **Presentations 2018**

21-Dec-2018 Pamela Gay, PhD Super-Secret Squirrel Stuff…Again :) Astronomical Society of the Pacific

Presentations 2019

Month	Name	Topic	Sponsor
18-Jan-2019	Erika Gibb, PhD	Comets	UMSL
15-Feb-2019	K Michael Malolepszy	The Year in Planetary Exploration	SLAS
15-Mar-2019	Bruce Stinchcomb, PhD	Meteorites	Flo-Valley
19-Apr-2019	Bob King "Astro Bob"		
17-May-2019	Craig O'Mara	Flying SOFIA	NASA
21-Jun-2019	Josiah Lewis, PhD	Presolar Grains: Solids from Other Stars Studied in the Lab	Wash U
19-Jul-2019	Ryan Clegg-Watkins, PhD	Exploring the Moon from Orbit: Paving the Way for Future Astronaut Explorers	Wash U
16-Aug-2019	Angela Speck, PhD	2019 Solar Eclipse Results	Mizzou
20-Sep-2019	Don Hampton,PhD	Aurora Borealis & Steve	UAF
15-Nov-2019	Claire Chandler, PhD	Super-Earths and the Formation of the Solar System	NRAO
20-Dec-2019	Duncan Lorimer, PhD	Fast Radio Bursts: "Lorimer Bursts"	UWVA-Skype

Event

NRAO: National Radio Astronomy Observatory
UAF: University of Alaska: Fairbanks
UWVA: University of West Virginia

***Astro 101:** *Welcome Aboard Meetings for new members are still planned for each month.

Secretary – Mark Jones: No report

Treasurer/ALCor – Bill Winningham: Budget proposal and final approval. 2019 budget proposal was presented at November meeting by Bill Winningham. Budget will be voted at December general meeting The preliminary financials for November were distributed before the meeting and were discussed at the meeting. A few outstanding items need to be addressed before the financials are finalized.

1. Treatment of loaner scope proceeds. I noticed after I ran the reports that I recorded income under two different items
2. Timing differences on magazine subscription income/ purchases
3. Treatment of Infiniti Tees inventory. (not reflected in draft financials yet)
4. Other inventory reconciliation (mugs)

There is a procedural issue involving non-budgeted expenses, I want to make the following motion to have a discussion of tighter procedures going forward. Motion by Bill Winningham to reaffirm the Board policy, that any expenditure not expressly mentioned in the budget and exceeds $50 of budgeted expenses, needs to be approved by the Board in advance. Members cannot financially commit to such expenditures and expect to be reimbursed and may be personally financially responsible. Second by Larry Campbell. Motion passed by Board Astronomy magazine $29.95 rate and now going back to $34 as of end of year. Normal rate is $42.95. SLAS website needs to be updated, brochures and newsletter. Bill did renew one $5000 CD. Next CD due to mature in 3 months and Bill will propose long-term saving strategy

Hospitality – Larry Campbell: Star Wars Death Star cake for $60-70.

Membership recognition – Handed out about 12 members pick up their recognition pins.

Board member at large reports

Rich Heuermann (2019) Press release for December meeting is out. YMCA Trout Lodge Funds Update While working with Don Ficken, the Lodge staff have decided: (1). to dispose of (i.e., sell) their three 8" Dobs, which have been sitting unused for ??-many years in a storage shed, gathering dust, dirt, leaves, and spider webs. Cook says one of the mirrors is not even silvered! (2). Use their SLAS-held funds to buy a second tabletop (Library-type) telescope. (3). use the residual funds (about $160) plus the proceeds from the Dob sales to buy another tabletop telescope. **Per Don Ficken -** Trout lodge has not made any decisions because they were waiting for SLAS recommendations based on a review of their equipment. Don is attempting to provide Trout Lodge with a solution that will advance astronomy at the lodge, promote our library telescope program to lodge guests, and enhance our club's relationship with the lodge. Cook is working on an estimated value of the high quality eyepieces they own. Once known, Don can prepare a budget with options to discuss with them. **Bill will contact Don about how to proceed|**

(Continued on page 8)

(Continued from page 7) ***Board Meeting Minutes***

Tom Nickelson: (2020) No report

Brent Buch (2021) Brent gave backup USB drive through November to Brad

Additionally, every 2018 SLAS videos, compressed and ready to upload to website with thumbnails. Compressed videos are about 500MB. Brent looking into end-user agreement.

4. Committee Reports: If needed

Library Telescope Program:

Report per Don Ficken: (1) A total of 18 star parties are scheduled for the first half of 2019 which is similar to the count of last year. Per contract, St. Louis County Library (SLCL) will donate $810.00 to SLAS for delivering these programs. We will have a similar contract for the last half of the year. (2) "Educator" library telescopes – Given the checkout history, we are agreeable to re-purposing the night time telescopes back into the general public pool. **SLCL will begin the process of reclassifying these to get them into the hands of the public more.** (3) Sunspotter telescopes – Our intent was that the library staff would always have access to these telescopes. We want them used as much as possible and would be happy to assist with programming ideas. Would educators still be able to check them out if not reserved for staff use? Removing them from educator checkout would cause some issues for us as we continue to promote this idea in our printed literature and signage. **SLCL will not make any changes to the sunspotter telescopes. Down the road SLCL might wish to remove them from the educator checkout program.** (4) Solar Galileoscopes – SLAS would like them back if SLCL doesn't want to keep them. The core telescope is worth about $75.00/each. **SLCL will make sure SLAS get them back. SLAS would like to pick them up from HQ.** (5) Telescope maintenance – SLCL is open to having their telescopes serviced in January/February like we did earlier in 2018. **SLCL will check on the room availability** (6) Volunteer training – SLAS needs to recruit/train volunteers for delivering our library telescope programs. SLAS wants to hold at least one event in St. Louis County and another one in St. Charles County. SLCL is open to giving SLAS a conference room for a few hours in January, February or March. **SLCL will make the reservation for SLAS as a library-sponsored meeting because it supports the telescope lending program.**

Membership – Our current membership count is 175 members which is four members below last month's report of 179 members and eight below last year's count of 182 members. New member additions are comparable to last year. The reduction appears to be primarily the result of members not renewing.

Merchandise – Shirts still available to sell. Check for shirts sent to Infinitees. Will offer them up for Christmas at Dec meeting

Newsletter – Please forward articles to newsletter@slasonline.org
Night Sky Network – coordinators **Pins must be ordered by January 31, 2018, and all pins will be shipped by early February 2019.** Quantities are limited!
Star Parties- See separate report from Bill Breeden of upcoming SLAS star parties and events. The report is divided into two sections. 1. PENDING Star Parties and Events – All upcoming events for which we do not have a SLAS Lead yet. This should be helpful in recruiting a SLAS Lead for these Pending events. 2. SCHEDULED Star Parties and Events – All upcoming events for which we have a SLAS Lead, and usually additional volunteers. The number of RSVPs are shown, so that more volunteers can be recruited if needed.
Don worked with Rich Fefferman to book the following Gateway Arch Star parties for 2019. 5/18 starting at 8 pm, 6/15 starting at 8 pm (same weekend as MSRAL), 7/13 starting at 8 pm, 8/17 starting at 8 pm, 9/6 starting at 6:30 pm (conflicts with "First Friday" and the Air Show weekend that starts the next day), 10/5 starting at 6:30 pm (conflicts with "First Friday")
5. Old Business None
6. New Business None
7. Closing Activities Motion to adjourn meeting by Larry C and second by Brent B. Meeting adjourned at 9pm

ALCon 2019 - July 25-29, 2019 - Kennedy Space Center,FL and Southern Skies Cruise to Bahamas

https://www.astroleague.org/images/solar/alcon-2019-july-25-29-2019-kennedy-space-centerfl-and-southern-skies-cruise-bahamas

Join the Astronomical League to commemorate the 50th anniversary of the first moon landing! First, tour the Kennedy Space Center, the site of the Apollo 11 launch. Then, enjoy a three-day cruise to the Bahamas on a ship by Royal Caribbean and see the southern Milky Way of Sagittarius and Scorpius! Thursday July 25, after the KSC tour, stay on-shore at a hotel in Titusville (to be arranged).
You will need a passport valid through January 2020 or later. (Yes, at least six months after the cruise!)
Royal Caribbean cruise ship leaves Port Canaveral Friday afternoon July 26 and returns Monday morning July 29.
Cruise cabins are limited. Reservations are being accepted, with a $100 initial down payment. Pricing (based on double occupancy) for the whole weekend cruise including meals is set at $399 per person (PP) for inside cabins, $579 PP for outside cabins, and $589 PP for Balcony cabins. Singles, triples, and quad rates are available upon request with our agent.Members of the Astronomical League only: To reserve your cabin with a $100 deposit, and for additional cruise details, please contact Marsha at Lin-Mar Travel, 631-736-1049 or marsha@travelwithlin-mar.com.

7:38 PM
01/16/19
Accrual Basis

St. Louis Astronomical Society
Profit & Loss Budget vs. Actual
January through December 2018

	Jan - Dec 18	Budget	$ Over Budget
Ordinary Income/Expense			
Income			
Loaner Scope Sales	118.71	0.00	118.71
Total Magazine Subscription	1,664.65	1,797.85	(133.20)
Membership Dues	4,015.00	4,100.00	(85.00)
Total Income	5,798.36	5,897.85	(99.49)
Cost of Goods Sold			
Total Magazine Subscriptions	1,663.50	1,797.85	(134.35)
Total Merchandise	489.75	45.00	444.75
Total COGS	2,153.25	1,842.85	310.40
Gross Profit	3,645.11	4,055.00	(409.89)
Expense			
1-Programs & Events	1,939.69	2,150.00	(210.31)
2-Newsletter	130.00	175.00	(45.00)
3-Library expense	273.90	300.00	(26.10)
4-Astronomical League Dues	825.00	760.00	65.00
5-Loaner Scopes	512.14	600.00	(87.86)
7-Insurance	825.00	825.00	
8-Website	288.37	170.00	118.37
9-Administrative Expenses	927.29	1,645.00	(717.71)
Total Expense	5,721.39	6,625.00	(903.61)
Net Ordinary Income	(2,076.28)	(2,570.00)	493.72
Other Income/Expense			
Other Income			
Total Donations	2,504.50	0.00	2,504.50
Interest Income	132.64	100.00	32.64
LTP Receipts	4,724.96	0.00	4,724.96
Proceeds from Lens Sales	4,270.30	0.00	4,270.30
YMCA Trout Lodge Scope Proceeds	145.00	0.00	145.00
Total Other Income	11,777.40	100.00	11,677.40
Other Expense			
LTP Disbursements	4,875.26	0.00	4,875.26
LTP Escrow Funding	500.00	500.00	0.00
Total Other Expense	5,375.26	500.00	4,875.26
Net Other Income	6,402.14	(400.00)	6,802.14
Net Income	4,325.86	(2,970.00)	7,295.86

St. Louis Astronomical Society
Balance Sheet
As of December 31, 2018

	Dec 31, 17	Dec 31, 18
ASSETS		
Current Assets		
Checking/Savings		
Checking - First Bank	5,162.74	9,977.89
Deposit, Certificate of	20,188.79	20,239.11
Library Telescope Escrow	299.98	91.35
PayPal	563.55	0.00
Savings - First Bank	46,297.03	46,379.35
YMCA Trout Lodge Escrow	482.87	627.87
Total Checking/Savings	72,994.96	77,315.57
Other Current Assets		
Inventory Asset	511.28	821.53
Undeposited Funds	50.00	105.00
Total Other Current Assets	561.28	926.53
Total Current Assets	73,556.24	78,242.10
Total Fixed Assets	0.00	0.00
TOTAL ASSETS	73,556.24	78,242.10
LIABILITIES & EQUITY		
Equity		
Opening Bal Equity	8,137.66	8,497.66
Retained Earnings	54,813.50	65,418.58
Net Income	10,605.08	4,325.86
Total Equity	73,556.24	78,242.10
TOTAL LIABILITIES & EQUITY	73,556.24	78,242.10

We could use articles for the newsletter. The following topics are fine for submission.

1. Star party reports. Let us know how a star party you attended went! Photos would be most welcome in addition to the article.

2. Observing reports. Actually made it out observing? Let us know how it went. Taken some astro photos? Please submit!

3. Bought something or built something? How about a review or an article!

Send to newsletter@slasonline.org

Upcoming Star Parties and Other Events

For details on these and other upcoming events, check out the Night Sky Network Calendar linked on the Home Page for SLAS at http://www.slasonline.org

SLAS Executive Board Meetings *Location will be at Nicoletti's Restaurant in Valley Park* All meetings are on First Thursdays unless noted.
Feb 7, Mar 7, Apr 4, May 2, Jun 6, Jul 11 (4th is 1st Thursday), Aug 1, Sep 5, Oct 3, Nov 7, Dec 5

Dark Sky Observing Dates

2/2, 3/2, 4/6

Francis Park Events: These events are on Wednesdays of the week nearest the first quarter Moon
4/10, 5/8, 6/5, 7/10, 8/7, 9/4, 10/2, 10/30

Sky Orienteering Events For members who want to gather and do some relaxed observing at Babler State Park
orienteering. Please RSVP if you plan to come!

SLSC Public Telescope Viewing Events: These events are held the first Friday of the month Planetarium shows start at 7pm
Feb 1, Mar 1, Apr 5, May 3, Jun 7, Jul 5, Aug 2, Sep 6, Oct 4, Nov 1, Dec 6

Pattonville Observatory Public Viewing Dates
1-25, 2-8, 2-22, 3-8, 3-22, 4-12, 4-26, 5-10, 5-24

Broemmelsiek Astronomy Park Public Viewing

Every Friday night with ASEM members

UMSL Observatory
For directions and map
http://www.umsl.edu/~physics/About%20the%20Department/astro.html

All sessions include viewing of 1st quarter Moon with additional objects

Skywatch Hotline: 314-516-5706

Saturdays:

LET US KNOW YOU ARE COMING!

To RSVP for any of these events log in to the Night Sky Network and submit your RSVP. If the event is canceled, you will be notified immediately according to the preferences you have selected.

SLAS EVENTS

February

1 Fri	SLSC Public Telescope Viewing
2 Sat	SLAS Dark Sky Observing
7 Thur	SLAS Board Meeting
11 Mon	Grant's View Library
12 Tue	St. Louis Public Library
15 Fri	SLAS Regular Meeting
23 Sat	Library Telescope Build
28 Thur	St. Louis Public Library

March

1 Fri	SLSC Public Telescope Viewing
1 Fri	Parkway School STEMFest
2 Sat	SLAS Dark Sky Observing
7 Thur	SLAS Board Meeting
13 Wed	Rock Road Library
14 Thur	Crestwood Elementary School
14 Thur	Bridgeton Trails Library
15 Fri	SLAS Regular Meeting
18 Mon	St. Louis County HQ Library
19 Tue	Samuel C. Sachs Library
20 Wed	Cliff Cave Library
20 Wed	St. Louis Public Library
30 Sat	Library Telescope Maintenance

April

4 Thur	SLAS Board Meeting
5 Fri	SLSC Public Telescope Viewing
6 Sat	SLAS Dark Sky Observing
10 Wed	Florissant Valley Library
11 Thur	Thornhill Library
16 Tue	Natural Bridge Library

SLAS Merchandise Available

SLAS merchandise is now set up for embroidery at
Headz n Threadz at https://hnt.threadthis.com/

There are two locations:
Galleria: 2495 St. Louis Galleria, St. Louis, MO 63117 Telephone: 314.862.2695
galleria@headznthreadz.com

Simply take the garment, hat, etc you wish to have embroidered and they will take care of it. They have the SLAS logo on file. You may make modifications to the colors if you wish.

SLAS MEMBERSHIP APPLICATION

Name: Last _____

First, Middle Initial _____

Address _____

City, State, Zip Code _____

email address _____

Please send completed form with check (no cash please) made payable to

St Louis Astronomical Society

Don Ficken, Membership
13024 Barrett Crossing CT
St. Louis, MO 63122

Youth @ $10.00 / 1 year (18 yrs or younger) $_____

Individual @ $25.00 / 1 year $_____

Family @ $40.00/1 year $_____

Publications with discount available with your SLAS membership:

Sky and Telescope @ $32.95 / 1 year $_____

(S&T may also be renewed at their website: http://www.skyandtelescope.com)

Astronomy @ $29.95 / 1 year $_____

TOTAL ENCLOSED **$**_____

Check all that apply:
___ Renewal
___ Address Change Only
___ Please send my newsletter by regular mail
___ ***New Member!***

SLAS OFFICERS

President ***Jim Small*** 314-307-0692
president at slasonline.org

Vice President ***Bradley R Waller*** 314-481-7250
vicepresident at slasonline.org

Secretary ***Mark Jones*** 636-394-2342
secretary at slasonline.org

Treasurer ***Bill Winningham, (Don Ficken - membership)***
treasurer at slasonline.org 636-357-2763

Hospitality ***Larry Campbell*** 636-244-2867
hospitality at slasonline.org

Board Members at Large:

Rich Heuermann 314-962-9231
Board19 at slasonline.org

Brent Buch 314-239-0329
Board21 at slasonline.org

Tom Nickelson 314-346-9565
Board22 at slasonline.org

ALCOR ***Bill Winningham*** 636-357-2763
(Astronomical League Correspondent)
treasurer at slasonline.org

MSRAL Rep. ***Jim Small*** 314-909-7211
msral_rep at astroleague.org

COMMITTEE CHAIRS

Dark Site Coordinator ***Mark Jones*** 636-394-2342
darksite at slasonline.org

Librarian ***Jim Small*** 314-909-7211
librarian at slasonline.org

Library Telescope Program ***Don Ficken*** 636-851-9630
lirbrarytelescope at slasonline.org

Loaner Equipment ***Greg Gaines*** 314-277-3082
loaner at slasonine.org

Merchandise ***Vacant***
merchandise at slasonline.org

Membership ***Don Ficken*** 636-225-0269
membership at slasonline.org

Newsletter Editor ***Jim Small*** 314-909-7211
newsletter at slasonline.org

Observing Programs ***Mark Jones*** 636-394-2342
observing at slasonline.org

Publicity ***Rich Heuermann*** 314-962-9231
publicity at slasonline.org

Recognition ***Larry Campbell*** 636-244-2867
recognition at slasonline.org

Social Media *Vacant*

'SLASdialogs' Moderator ***Mark Jones, Rhonda Whelan***
dialogsmoderator at yahoo.com

Star Party Coordinator ***Bill Breeden*** 314-276-3613
starparty at slasonline.org

Telescope Making ***Bill Davis, Jim Melka*** 314-469-3061
telescope at slasonline.org

Webmaster ***Jim Small*** 314-909-7211

Devoted to the Interest and Advancement of the Science of Astronomy

ST. LOUIS ASTRONOMICAL SOCIETY

We're on the Web!
http://www.slasonline.org

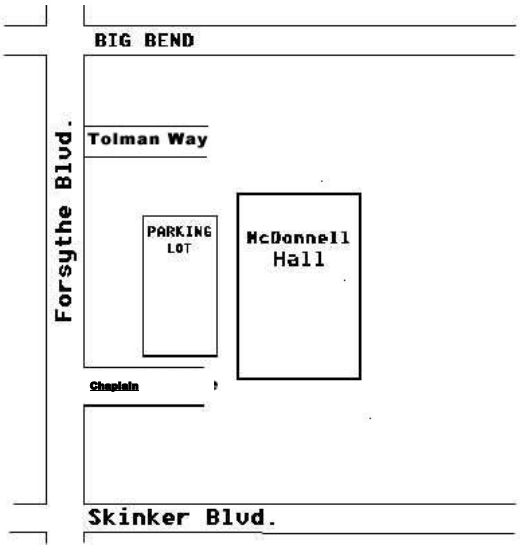
Follow us on
Twitter: @stlastro
Facebook: @stlastro

Who We Are and What We Do

St. Louis Astronomical Society is a not-for-profit organization established in 1936. SLAS is devoted to the interest and advancement of the science of astronomy. Our mission is to promote an understanding of the science of astronomy to our members and to the public. Membership is open to any-one with an interest in astronomy.

For more information contact any SLAS officer or visit our website listed above. SLAS is affiliated with the Astronomical League, Night Sky Network and the Mid-States Region of the Astronomical League.

Meetings are held the 3rd Friday of each month at McDonnell Hall at Washington University. See the map to the right for directions.



St. Louis Astronomical Society

Jim Small
13128 Cozyhill Drive
St. Louis, MO 63122