THE EVENT HORIZON

ST. LOUIS ASTRONOMICAL SOCIETY

Devoted to the Interest and Advancement of the Science of Astronomy

VOLUME 29, Issue 9
September, 2019

The Northern Lights and STEVE

by

Dr. Don Hampton

University of Alaska - Fairbanks

Dr. Don Hampton of the University of Alaska, Fairbanks will be featured at the September meeting of the Saint Louis Astronomical Society. The meeting will begin at 7:30 PM Friday, September 20, in McDonnell Hall, Room 162, on the Washington University campus, Saint Louis, MO 63105. McDonnell Hall is accessible from Forsyth Boulevard via Tolman Way. Free yellow zone and garage parking spaces are available.

The Sun showers Earth with more than light, heat, and other forms of energy. It also bombards the Earth with high energy particles. When solar "storms" eject a much greater batch of particles than usual, the particles smash into the molecules of Earth's upper atmosphere, causing the upper air to glow. Large, shimmering sheets and ribbons of airglow become visible from the ground as an aurora – the Northern Lights as seen from north of the equator. A few years ago, a vertical dagger of glowing air was seen and nicknamed "Steve". Now this dagger has been re-named "STEVE" – Strong Thermal Emission Velocity Enhancement. Dr. Hampton will talk about the nature of the Northern Lights and STEVE, and about their direct effects on radio communications, satellites, and power grids.

Dr. Don Hampton is a Research Associate Professor in the Geophysical Institute of the University of Alaska, Fairbanks. His research interests center on the boundary between Earth's upper atmosphere and space, the energy input of aurora into the upper atmosphere, and the effects of auroral energy on the atmosphere.

Upcoming Presentations for 2019

October Abigail Bollenbach Edwin Hubble and his Telescope - Bartlesville Astronomical Society

November Claire Chandler, PhD Super-Earths and the Formation of the Solar System - National Radio Astronomy Observatory (Zoom)

December Duncan Lorimer, PhD Fast Radio Bursts: "Lorimer Bursts" - University of West Virginia (Zoom)

Upcoming Presentations for 2020

January Ryan Clegg-Watkins, PhD Exploring the Moon from Orbit: Paving the Way for Future Astronaut Explorers Washington University

February K Michael Malolepszy Probing the Sub-Microwave Universe Part II SLAS

March Joseph N Marcus, MD Carl Lampland, Pioneer Infrared Astronomer SLAS

April Raymond E Arvidson, PhD What Controls Planetary Climates Washington University

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Join Us at the Annual SLAS Star-B-Q on Sunday, September 22nd.
See the Article on Page 3 in this Newsletter for More Information!

Many Star Parties and other events need volunteers!
No experience necessary!
See the calendar for a list of events.
Sign in to Night Sky Network to RSVP for an event!
Here is the link: Night Sky Network

The most urgent event includes the Life Outside Festival tomorrow!

Presidents Corner *by* Jim Small

Fall is here! You can tell just by looking at the SLAS calendar around the First Quarter Moon. Many events are scheduled and SLAS is very busy with lots of events, including some first time events. School is back in session and there are plenty of star parties that are associated. Be sure to check Night Sky Network to see which events need volunteer support. As the article in this newsletter shows, we have plenty of people who have volunteered for events, but can always use more. Get involved! You will find it rewarding beyond measure.

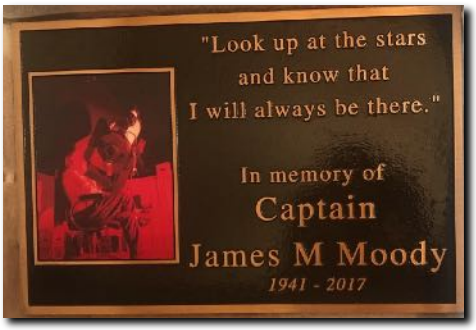
Thanks to all those who helped with the air show this year. It was one of our largest events and worth our efforts. Mark's meteorite/meteorwrong search activity was very popular with many kids. Sunday morning was trying because of the morning rain, but at least our booth wasn't underwater like a couple of low lying booths were. All in all it was a tiring but worthwhile experience. And the airplanes!!!

The purchase of the observatory is complete and Sandy Moody has had a great plaque made to commemorate Jim Moody for which the observatory will be named. The plaque is bronze, will last 100 year and even includes a post for mounting it outside the observatory! Thanks to Sandy for making the investment. You can see a photo of the plaque here. The photo of Jim reminds me of photos of Hubble at the Palomar telescope!

I'm looking forward to the Star-B-Q our annual get together! The weather this week isn't promising, so keep an eye on things in case it's canceled. We might have to reschedule.

The Library Telescope and Binocular programs are expanding. We recently held a repair build for St Louis County and we also had a build for telescopes that will go to the Carbondale area. Library binoculars are now in all libraries in St. Louis County.

Meeting videos are now on the website and Brent is doing a great job of keeping up with them! He will be working to bring them up to date going back to 2015 as time goes on. Thanks to Brent for all the good work!



Find a way to get involved and clear skies going forward this month!

Jim Small

The Case for Dark Sky Observing
by Bill Breeden
August 3, 2019

DANVILLE, MO – Saturday night, August 3, 2019 was the scheduled night for SLAS Dark Sky Observing. The forecast for sky cover was 25 percent clouds, but with mild temperatures. Not ideal, but certainly nice enough to enjoy being outside. Despite the less-than-ideal forecast, the night turned out to be wonderful! We enjoyed clear skies and mild temperatures, along with an occasional light breeze.

My Danville observing reports usually go into observing list detail, describing each deep-sky object, listing telescopes and eyepieces, and generally going over the night's activities as they happened. See my previous Danville report in the January 2019 issue of The Event Horizon. For this report, I will do some of that, but I really want to spend some time talking about dark sky observing in general.

We had about 9 members at Danville: Cook Feldman, Jim & Ann Trull, Murray Fishman, Jeff Strauss with 2 guests, Alan Whitson, Jim Twellman, Jeff Heckenkamp, and me. Sorry if I missed anyone on this list. We enjoyed observing the 3-day old thin waxing crescent Moon before it set. The bright planets Jupiter and Saturn made great targets during twilight. I used my 9mm Televue DeLite eyepiece to observe Jupiter in my 8 inch LX90 Schmidt-Cassegrain telescope. The view of planets though this eyepiece is a real treat! At 222x, Jupiter appears large, and the cloud belts showed much detail. One of the bands was noticeably darker than the other. I have found that 200-250x is about the maximum power I can expect to reasonably use with my 8 inch telescope, and this 9mm DeLite eyepiece provides just the right amount. For visual observing, I consider 200x and up as high power. Low power is anything under about 110x, leaving 111-199x as medium power.

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17th Annual SLAS Star-B-Q (and Sky Orienteering)

Sunday, September 22, 2019

Walnut Grove Picnic area

Come join fellow members of the SLAS at **Babler State Park** for a day of food, softball, games, and observing. SLAS will once again provide the Bar-B-Q. We ask is for you to bring your favorite drinks and side dish or dessert. ***This area has a large shelter, restrooms, and baseball fields. There is also plenty of room to set up volleyball or horseshoes if you wish to bring them. We will observe from the ball fields.*** Don't have a telescope? Don't worry this is a great chance to see other member's telescopes.

Remember: Members should bring **drinks** and a favorite **side dish** or **dessert**. Meat will be provided by SLAS!

Don't forget to bring your telescope or binoculars, chairs and bug spray!

Schedule of Events

2 pm Setup
3 pm – Picnic begins
4 pm-6 pm Food line open
5 pm - 6 pm Trivia Contest (with prizes)
7 pm Sunset
7:30pm- Midnight Observing at picnic site

We chose September 22 for the Annual Star-B-Q for a number of reasons:

1. It's a third quarter Moon so dark sky viewing should be good.

2. It's a Sunday rather than a Saturday to allow members to do their normal dark sky viewing on Saturday

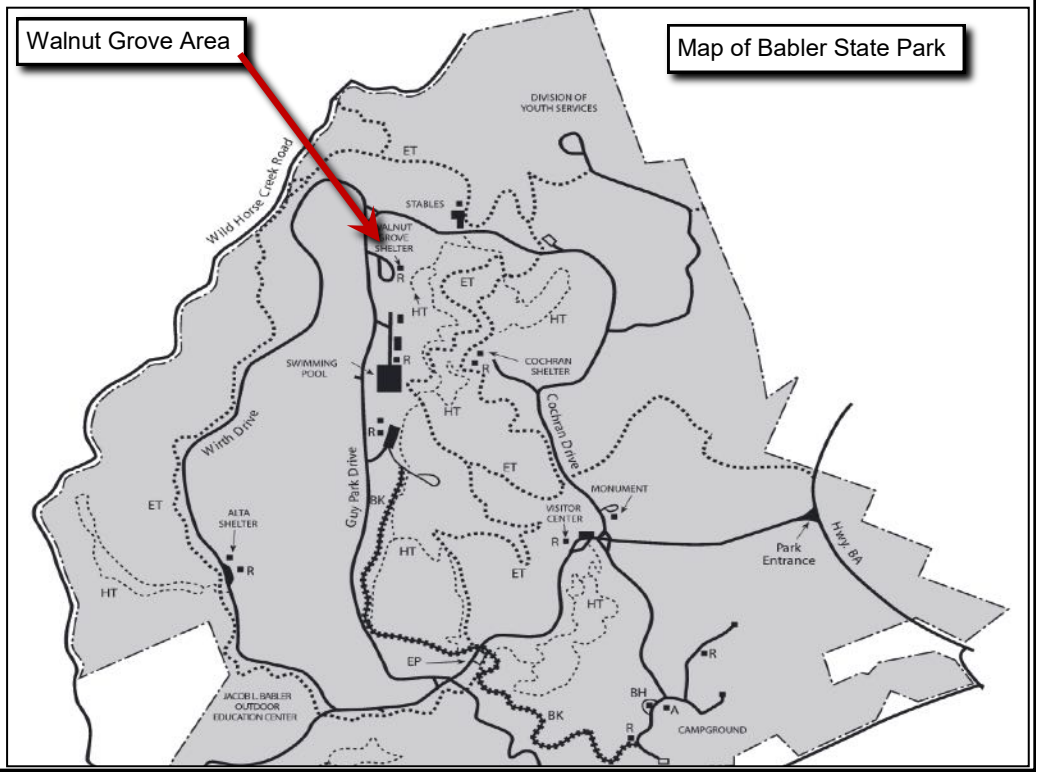
3. It's later in the year so it should be cooler with fewer bugs but not so cool that it wouldn't be good for a picnic

4. It avoids conflicts with other meetings

5. It's the normal night for Sky Orienteering

6. We are considering having an object list to find for the event for a certificate. We will discuss this at the next two meetings to see if there is interest.

7. Join us and have some fun!!



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These are just my definitions; you may find that your equipment allows lower or higher ranges of power to be usable.

Ok, now let's talk about dark sky observing, one of the best benefits of your SLAS membership. Our members have many different interests within the hobby of astronomy: Lectures, telescope making, astrophotography, outreach, sketching, and space science in general. We have nearly 200 members, but only about 10 to 20 of us regularly participate in our society's dark sky observing events. Why? Is it the distance, lack of restroom facilities, or is it simply concern that our site is a public location? If you are interested in dark sky observing, but something is keeping you from participating, please don't hesitate to let us know.

Dark sky observing is equally important as lectures and outreach. Dark sky observing gives me something to be enthusiastic about when talking to the public about astronomy. I can discuss the deep sky objects I have observed, and telescopes that I have looked through. Most outreach sessions are held in light-polluted locations, so we commonly show people the Moon and bright planets. That's fine, but when an attendee begins asking "What else have you seen?" or "Can you see a galaxy?" I fall back on my dark sky observing experiences with SLAS and begin telling them about many fascinating objects I have seen.

When I meet a prospective member at an outreach event, how do I answer the question "What does SLAS do?" In addition to great lectures and bringing astronomy to the public, dark sky observing is a great reason to join SLAS. Lectures fill the mind with science and astronomy, outreach shares it with the public, and dark sky observing fulfills a personal need to connect with the sky and unwind under its natural beauty. I cannot imagine this hobby without all three components.

Another concern for dark sky observing is the diminishing need for it from a purely scientific perspective. What's the point if most celestial objects are now discovered by modern automated sky surveys? While it is true that we may discover something, the odds are small indeed. iPads, laptop computers, and Sky Safari software make it easy to "observe" the night sky on your device, so why even bother with a telescope at all? I compare dark sky observing with catch-and-release fishing. One could argue that there is no reason to do that either, but they would be missing the point. Dark sky observing is fun, and I want to make the case in favor of it.

Want to know how Galileo felt when he pointed his telescope at Jupiter? Try it. How about reliving the observations of Charles Messier? We do that all the time! Seeing globular cluster M5 in Serpens Cauda on a mild August night is an experience that cannot be duplicated by looking at it on a computer screen or on your phone. You look up at the constellation Serpens Cauda with your two eyes, then peer into your eyepiece and see M5, then look back up at the sky. Back and forth – sky, eyepiece, sky, eyepiece. This is the real deal, and the first time you find it yourself with star charts and a Telrad is pure joy.

Dark sky observing also brings comradery to our hobby. At Danville, you can interact with other members at dusk and compare telescopes, go over observing lists, and just chat and get to know one another. At outreach events, we are typically busy with the public, time is short, and there may only be 2 or 3 members at an event. Dark sky events offer an opportunity to meet other like-minded members and chat in a relaxed environment. Get the most from your SLAS membership!

For new members that met us at an outreach event, then later began attending our lectures, attending a dark sky

(Continued on page 5)

event is the time to try out that telescope they built, or to simply try finding objects in the night sky that they leaned about at a lecture or outreach event. It answers the "Now what?" question once a new member has met us, joined the society, and attended a few lectures.

Now that I have your interest in dark sky observing with us, let me cover some basics. Here, I hope to answer some questions about dark sky observing.

Danville Conservation Area is a primitive location about 75 miles west of the St. Louis metro area. It is reasonably dark for a location that does not require a multiple-day commitment. There are no restrooms or facilities, and deer are common on the road for the final 5 miles to the site. Please drive slowly, especially at night when departing. Seasoned members use this site for quiet observing or astrophotography and may not wish to be disturbed. This is very likely the only chance they get to enjoy quiet time with their hobby, and they may have waited months for this night. Please allow them this solitude.

Children are welcome, but please note that toddlers may not enjoy the event as it proceeds into the late night and early morning hours. Do not allow children to disturb other members. Danville is not the place for outreach, so we ask that invitations to this event be extended only to members and their guests.

How dark is Danville? Darker than Chesterfield, not as dark as Mark Twain National Forest. Darker than St. Charles county, but not as dark as the Texas Star Party. You can see all seven stars of the Little Dipper on most nights at Danville, and the Summer Milky Way is very visible. I have observed objects as faint as 12th magnitude with my 8 inch SCT, but magnitude 10-11 is a more practical limit for visual telescope observing. Larger instruments can reach 13th magnitude and perhaps even fainter.

Bring everything you need to have an enjoyable night. Warm clothes (even in summer), chairs, table, mosquito repellent, snacks, and water for your own comfort. There are no restrooms, and that can be an issue for some people. Stop at a gas station, restaurant, or rest area on the way in, and be prepared for this situation. Equipment-wise, bring telescope, eyepieces, binoculars, power supply, dim red flashlights, cords, extra batteries, etc. Bring star charts and observing lists that you have prepared.

In general, I usually leave home 2 to 3 hours before sunset. This allows time to stop and eat, deal with any traffic issues, and to arrive before sunset. Drive slowly into the observing area. It is a gravel parking lot and gravel dust is bad for telescopes. Try not to kick up dust when arriving or departing.

Dim red light works best for your lighting needs once it gets dark. White flashlights, smart phone screens, and laptop screens destroy dark-adapted vision, and disturbs other observers. Even bright red can be a problem. Always point any lights downward, and only use them when needed to see star charts, equipment, etc. Also, use green laser pointers sparingly, since some members will be working on astrophotography.

Regarding parking and headlights at the site: With modern vehicles, it may be difficult to control headlights and interior lights. No matter which direction you park your car, someone else will probably set up in the path of your lights. To mitigate this issue, simply arrive before sunset, and plan to leave around midnight or dawn. If you know you will not stay all night, plan to leave around midnight. Many members depart then. Simply let others know you are leaving and that lights may come on. Safety is paramount – use your headlights to navigate out safely. And if you need to depart at another time, it is ok, just let others know so they can cover their eyes. Dark adapted vision takes 30 minutes to be restored.

If you have never observed with us at our dark site, I implore you to give it a try. Members receive reminders of dark sky events by email through Night Sky Network, so be on the lookout for these invitations. Cancellations for weather are also sent by email. If you have any questions about these events, you are welcome reply to these invitations, or you may contact me at 314-276-3613. I welcome any members' questions about dark site observing with SLAS.

to

Clear Skies,
Bill Breeden
SLAS Star Party Coordinator

Francis Park Stargazing Report, 9/4/19

Event Date: Wednesday, September 4, 2019
Time: 7-9:30PM
Targets: First Quarter Moon, Jupiter, Saturn.
SLAS Volunteers: John Beaury, Phyllis Nolan, Jim & Ann Trull, Brad Waller, Bill & Rita Breeden-
Guests: About 100 adults and children.

Notes: Clear and mild evening. Provided visitors with stunning views of the first quarter Moon, Jupiter, and Saturn. Saturn's largest moon Titan was clearly visible to the right of Saturn in the eyepiece. Jupiter was big and bright, and the four Galilean moons were on display. Clear skies allowed us to show visitors bright stars in the sky such as Arcturus, Antares, Vega, Deneb, Altair, and the stars of the Big Dipper. I pointed my telescope at Pluto, and saw a faint star in the eyepiece. This could have simply been a field star, but Pluto was out there somewhere! Many visitors brought their children, and the kids really enjoyed learning about astronomy. This was a fun event for all!

Due to the way the Moon phases happen next month, there will be two Francis Park Stargazing events in October, on 10/2 and 10/30. Let's hope for two more great nights for those events!

Clear Skies,
Bill Breeden

Gallery: Photos from the August First Friday event held at the James S. McDonnell Planetarium

SLAS Volunteer Hours

According to Night Sky Network SLAS volunteers have logged 1061 hrs so far this year (9-15-2019)

Here is the list of SLAS volunteers with one or more event for 2019

Check your volunteer log in NSN to make sure it is correct.

Volunteers with 5 or more events may qualify for the NSN certificate and pin

Donald Ficken 58 events; 131 hours

Bradley Waller 37 events; 107 hours

Cook Feldman 31 events; 90.5 hours

Richard Jennings 27 events; 71.5 hours

Mark Jones 24 events; 80 hours

John Beaury 16 events; 49 hours

Frank Mack 16 events; 31.5 hours

Rich Heuermann 14 events; 18.5 hours

James Small 13 events; 58.5 hours

Bill Breeden 13 events; 49 hours

Rita Breeden 13 events; 49 hours

Larry Campbell 12 events; 32 hours

Sharon Bertram 9 events; 21.5 hours

John Strebeck 7 events; 23 hours

Phyllis Nolan 7 events; 19 hours

Kathryn Czeschin 7 events; 13.5 hours

Alfred Schovanez 6 events; 15.5 hours

Richard Fefferman 6 events; 14.5 hours

Murray Fishman 5 events; 8.5 hours

William Neubert 4 events; 21 hours

Rick Menendez 4 events; 13 hours

Robert Sullentrup 4 events; 11 hours

David Adkins 3 events; 13.5 hours

Raymond Mueller 3 events; 11 hours

Mary Barteau 3 events; 7 hours

Timothy Hulla 3 events; 7 hours

Ann Trull 2 events; 6.5 hours

Jim Trull 2 events; 6.5 hours

Anna Schroeter 2 events; 4.5 hours

Charles Laughton 2 events; 4 hours

John Sullivan 2 events; 4 hours

Shanna Ramirez 2 events; 4 hours

John Boncek 2 events; 3 hours Brett

Wilhelm 2 events; 2.5 hours

John Zinn 1 events; 9 hours

Carl McCullough 1 events; 6 hours

Bill Biermann 1 events; 5 hours

Laura McNamee 1 events; 5 hours

Mark Fedde 1 events; 5 hours

Brittany Burney 1 events; 3 hours

Gregory Rigelman 1 events; 3 hours

Renee Mettle 1 events; 3 hours

Yamiel Bell 1 events; 3 hours

Brian Mills 1 events; 2.5 hours

Derek Kalista 1 events; 2.5 hours

William Winningham 1 events; 2.5 hours

Alan Sapia 1 events; 2 hours

Craig O'Mara 1 events; 2 hours

John Duchek 1 events; 2 hours

Richard Rodgers 1 events; 2 hours

Update on Parking for Meetings

The current situation for parking for our meetings include free yellow zone and Bearly parking (for car pool folks) by the greenhouses. It also includes Danforth University Center garage parking spaces. The signs for Forsyth street parking have now been changed to Red on M-F until 5:00 pm, so they are available as well. Handicap parking is available to those who have permission right next to McDonnell Hall. Remember, the meeting will be held at the regular location unless otherwise notified.

St. Louis Astronomical Society Executive Board Meeting Minutes August 1, 2019

Opening Activities: Attending: Jim Small, Brent Buch, Bill Winningham, Mark Jones, Brad Waller, Larry Campbell Meeting opened at 6:54pm. July meeting minutes were distributed before the meeting. Motion to approve July minutes made by Bill W, seconded by Brent B. The minutes were approved by the Board.
2. External Business: Apollo 50th anniversary report. Approximately 250 people stopped by our tables. Please send your photos and articles for the newsletter. SLSC First Friday theme is Star Trek night, the weather looks good for Friday.
Next board meeting: Meetings posted on NSN Board meetings will be held at Nicoletti's Restaurant in Valley Park until further notice. Dates left for 2019: Sep 5, Oct 3, Nov 7, Dec 5
3. Director Reports:
President: Jim Small: ALCON Report: 150 attended, most did the cruise, three new observing programs approved, growing club and diversity panels held, rocket launch, tour of Kennedy Space Center. Next year ALCON is in Albuquerque NM.
Vice President: Bradley R Waller
SLAS Monthly Meetings **Presentations 2019**

Month	Name	Topic	Sponsor
16-Aug-2019	Marco Cavaglia, PhD	Gravitational Waves	UM: S&T
20-Sep-2019	Don Hampton,PhD	Aurora Borealis & Steve	UAF
19-Oct-2019	Abigale Bollenbach	Hubble and His Telescope	Bartlesville Astronomical Society
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.
Brad has been working on filling in past speakers, he now has an almost complete list back to 2001. Brad will send this list to Board members. Brad noted that we used to have more SLAS members present at monthly meetings. Brad suggests we ask for more members to speak at future meetings. Brad also stated the etiquette rules should be emphasized for SLAS events including proper attire and conduct for all members.
Secretary: Mark Jones: Our goal for August should be to sign a Bill of Sale and cut a check for the Moody Observatory after getting a motion passed at the membership meeting. Jefferson College – Drawings for the Moody Observatory concrete pier and pad have been sent to Jefferson College for a contractor estimate. Motion to procure Moody Observatory passed at July general meeting. Total amount authorized was $16k. Two telescopes were donated this month: One Astroscan, one 4.5" reflector with camera. Star-b-q date set for Aug 31st but might be moved due to holiday conflicts.
Treasurer/ALCor: Bill Winningham Financials? Financial reports will be sent out next week. There was a fair amount of reconciliation necessary related to the LTP/Bino programs. Special thanks to Don Ficken for keeping such detailed accounting for the LTP escrow. Of note this month, the YMCA Trout Lodge Escrow is just about closed out with about $15 remaining. Year-to-date expenses $3121 below budgeted amount. Net ordinary income $3618 above projected income in 2019 budget.
Hospitality: Larry Campbell Apollo cake last month. We gave John Beaury a recognition plaque.
Membership recognition: Proposal from 2017 for recognition awards: Board agrees to table the proposal to Membership committee. Recognition Proposal from December 2016**.** An annual membership recognition award called "The Lois Fitter Lifetime Outreach Award" be created to recognize long-time outreach volunteers who have volunteered for 5 or more years of outreach for the society with a minimum of 5 events per year. A nomination form and selection committee will be created by the membership recognition chair and the award will be presented (if nominations are available) when outreach volunteer recognition pins are presented. Discussion took place with Board. Proposal was moved to Recognition Committee for development of a comprehensive recognition program that goes beyond Outreach. Prior to meeting Mark Jones sent out the following ideas for recognition awards for members and non-members who support our mission:**The Lois Fitter Outreach Award** - given to most dedicated or most improved outreach participant or coordinator must be a SLAS member **The Stuart O'Byrne Founders Award** - given to board or committee person for service to SLAS, must be a SLAS member **The Dick Schwartz Supportive Faculty Award** - given to local educator at HS or college level who support SLAS mission don't have to be SLAS member **The Robert Cox Popular Astronomy Award** - given to person having major contribution to popularizing astronomy does not have to be SLAS member **The Al Woods Mentoring Award** - given to local amateur contributing to mentorship in astronomy, telescope and gadget making.Discussion: Expand the criteria and description of each award. Create a nomination form for each award. They must be complete and ready for review by the September Board meeting. We will publish them in the September newsletter. Nominating process: (1) Nomination letter required. (2) Deadline for nominations established as December 1st. (3) Nomination will remain valid for 3 years, not every award must be given every year. (4) Target presenting the awards at the Feb meeting. (5) Recognition plaques- individual plaques given to each awardee and a SLAS cumulative plaque for display at meetings Suggested list of committee members involved in selection process- Larry Campbell, Brent Buch, John Newcomer, Cook Feldman
Board member at large reports
John Newcomer (2022): No report
4. Committee Reports: If needed
Library Telescope Program: no report. Next build will be in August.
Membership: We ended the month of July with 193 members which is 15 members over the 178 members reported last year on 7/31/2018. Retention has been key and also several members switched their membership to "family memberships" which we count as two members. Our new member count is down slightly from last year with 22 members added so far this year vs 25 for the comparable period last year.
Merchandise: no report
Telescope Making: No report
Librarian: no report
Newsletter: Please forward articles to newsletter@slasonline.org Editor?
Website: 2019 speakers list is current.
Social Networking: Public Face Book stats for the St Louis Astronomical Society for the period of July 3-30: Post Reach: 671 Post Engagements: 475 New Page Likes: 25
Loaner Scopes: Loaner telescope shed being moved to Jim Smalls house Aug 18th. Cable to update Autostar II hand controllers purchased from B&H Photo.
Publicity: Press release for August Meeting will go out next week
5. Old Business: See recognition program discussion above.
6. New Business: None

6:25 PM
09/05/19
Accrual Basis

St. Louis Astronomical Society
Profit & Loss Budget vs. Actual
January through August 2019

	Jan - Aug 19	Budget	$ Over Budget
Ordinary Income/Expense			
Income			
Loaner Telescope Sales	75.00	0.00	75.00
Total Magazine Subscription	1,128.55	1,231.40	(102.85)
Membership Dues	3,205.00	3,030.00	175.00
Total Income	4,408.55	4,261.40	147.15
Cost of Goods Sold			
Total Magazine Subscriptions	1,103.40	1,231.40	(128.00)
Merchandise		100.00	(100.00)
Total COGS	1,103.40	1,331.40	(228.00)
Gross Profit	3,305.15	2,930.00	375.15
Expense			
1-Programs & Events	956.81	2,129.66	(1,172.85)
2-Newsletter	148.62	337.00	(188.38)
3-Library expense	80.00	352.50	(272.50)
4-Astronomical League Dues		825.00	(825.00)
5-Loaner Scopes	79.94	66.00	13.94
6-Brochures		410.00	(410.00)
7-Insurance	825.00	825.00	
8-Website	279.35	285.00	(5.65)
9-Administrative Expenses	123.59	191.66	(68.07)
Total Expense	2,493.31	5,421.82	(2,928.51)
Net Ordinary Income	811.84	(2,491.82)	3,303.66
Other Income/Expense			
Other Income			
Total Donations	1,644.70	0.00	1,644.70
Interest Income	238.20	67.00	171.20
LTP Receipts	20,633.82	0.00	20,633.82
Proceeds from Lens Sales	300.94	0.00	300.94
YMCA Trout Lodge Scope Proceeds	450.00	0.00	450.00
Total Other Income	23,267.66	67.00	23,200.66
Other Expense			
LTP Disbursements	18,665.33	0.00	18,665.33
LTP Escrow Funding	500.00	500.00	0.00
YMCA Trout Lodge ESCROW Expense	838.50	0.00	838.50
Total Other Expense	20,003.83	500.00	19,503.83
Net Other Income	3,263.83	(433.00)	3,696.83
Net Income	4,075.67	(2,924.82)	7,000.49

St. Louis Astronomical Society
Balance Sheet
As of August 31, 2019

	Dec 31, 18	Aug 31, 19
ASSETS		
Current Assets		
Checking/Savings		
Checking - First Bank	9,990.59	12,220.42
Deposit, Certificate of	20,239.11	15,761.85
Library Telescope Escrow	91.35	2,284.70
Savings - First Bank	46,379.35	51,094.81
YMCA Trout Lodge Escrow	627.87	14.21
Total Checking/Savings	77,328.27	81,375.99
Other Current Assets		
Inventory Asset	821.53	821.53
Undeposited Funds	105.00	132.95
Total Other Current Assets	926.53	954.48
Total Current Assets	78,254.80	82,330.47
Total Fixed Assets	0.00	0.00
TOTAL ASSETS	78,254.80	82,330.47
LIABILITIES & EQUITY		
Equity		
Opening Bal Equity	8,497.66	8,497.66
Retained Earnings	65,418.58	69,757.14
Net Income	4,338.56	4,075.67
Total Equity	78,254.80	82,330.47
TOTAL LIABILITIES & EQUITY	78,254.80	82,330.47

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.
Aug 1, Sep 5, Oct 3, Nov 7, Dec 5

Dark Sky Observing Dates
Aug 3, Aug 31, Sept 28, Oct 26, Nov 23, Dec 28

Francis Park Events: These events are on Wednesdays of the week nearest the first quarter Moon
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
Sept 22, Oct 20, Nov 17, Dec 15

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
Oct 4, Nov 1, Dec 6

Pattonville Observatory Public Viewing Dates
See you in the fall !!

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

	September
21 Sat	Sidewalk Solar Observing - SLSC
21 Sat	Great Rivers Greenway Festival
21 Sat	Fall Fun Rally
22 Sun	ANNUAL SLAS STAR-B-Q
22 Sun	SLAS Sky Orienteering
23 Mon	Prairie Commons Library
26 Thur	Missouri Botanical Garden
27 Fri	The Library After Hours
28 Sat	SLAS Dark Sky Observing
28 Sat	Ballwin Family Campout
30 Mon	Weber Road Library
	October
2 Wed	Francis Park Stargazing
3 Thur	SLAS Board Meeting
4 Fri	SLSC Public Telescope Viewing
4 Fri	Stargazing Audubon Center
5 Sat	Girl Scout Camp
5 Sat	Observe the Moon Night GS Camp
5 Sat	Stargazing at the Arch
6 Sun	Jefferson College Observatory
7 Mon	Grant's View Library
8 Tues	Victoria Gardens Retirement
8 Tues	Fairview Heights Library
8 Tues	HQ Library
9 Wed	St Louis Public Library
10 Thur	6th grade Seeker Camp
10 Thur	Manchester Park
10 Thur	Scott AFB Library
10 Thur	Glen Carbon Library
11 Fri	St Louis County Library
12 Sat	Astronomy Day - SLSC
18 Fri	SLAS Regular Meeting
19 Sat	Sidewalk Solar Observing - SLSC
19 Sat	Night Skies Over Babler
20 Sun	SLAS Sky Orienteering
22 Tues	JCO Festus Library
26 Sat	SLAS Dark Sky Observing
29 Tues	Cliff Cave Library
30 Wed	Francis Park Stargazing
	November
1 Fri	SLSC Public Telescope Viewing

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 Logo is also available at Infini-tees

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 @ $34.00 / 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:

Tom Nickelson 314-346-9565
board20 at slasonline.org

Brent Buch 314-239-0329
board21 at slasonline.org

John Newcomer 314-496-4636
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
librarytelescope 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
webmaster at slasonline.org

Devoted to the Interest and Advancement of the Science of Astronomy

ST. LOUIS ASTRONOMICAL SOCIETY

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

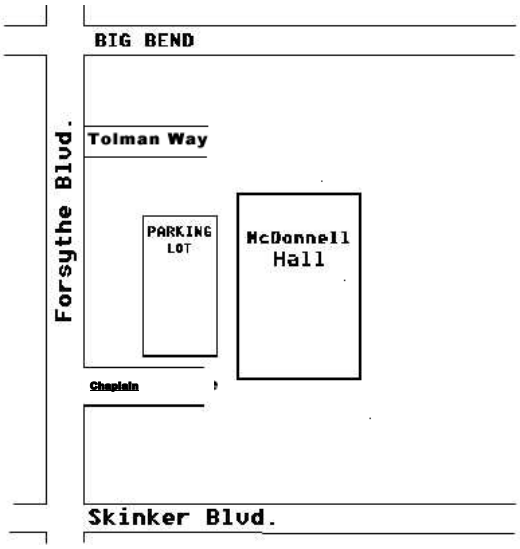
Follow us on
Twitter: @stlastro
Facebook: @stlastro

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