# THE EVENT HORIZON


## ST. LOUIS ASTRONOMICAL SOCIETY

***Devoted to the Interest and Advancement of the Science of Astronomy***

**VOLUME 29, Issue 6**
**June, 2019**


## Pre-Solar Grains: Solids From Other Stars Studied in the Lab

***by***

**Dr. Josiah Lewis**
**Washington University**

Dr. Josiah Lewis of Washington University was the featured speaker at the June meeting of the Saint Louis Astronomical Society

Presolar grains are dust-sized particles that are older than our solar system. They formed billions of years ago in the expanding atmospheres of aging stars and supernova explosions. The grains survived travel through deep space to be incorporated into solar system materials. Found in trace concentrations in asteroids, comets, and interplanetary dust particles, they offer the chance to use microscopes to study stars and the synthesis of the elements. Dr. Lewis discussed his studies of presolar nanodiamonds, which are diamond particles too small to be seen with a regular microscope. He must use special instruments to analyze these incredibly tiny visitors to our solar system. It was fascinating learning about the techniques used to study structures barely bigger than an atom.

Dr. Josiah Lewis is a postdoctoral research associate in the McDonnell Center for the Space Sciences at Washington University. He uses microscopes instead of telescopes to research extraterrestrial materials. He completed his PhD in physics at Washington University in 2017.

**Top:** Dr. Lewis describes the source of nanodiamonds **Above left**: Answering one of the many questions!
**Above right**: Getting mugged by VP Brad Waller

**Upcoming Presentations for 2019**

**July 2019** Craig O'Mara Flying SOFIA - NASA
**August 2019** Marco Cavaglia, PhD Gravitational Waves - UM: Science & Technology
**September 2019** Don Hampton,PhD Aurora Borealis & Steve - University of Alaska: Fairbanks (Zoom)
**October 2019** Abigail Bollenbach Edwin Hubble and his Telescope - Bartlesville Astronomical Society
**November 2019** Claire Chandler, PhD Super-Earths and the Formation of the Solar System - National Radio Astronomy Observatory (Zoom)
**December 2019** Duncan Lorimer, PhD Fast Radio Bursts: "Lorimer Bursts" - University of West Virginia (Zoom)

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## Jefferson College Observatory (JCO) and SLAS Moving Forward

Jefferson College is moving forward with the development of the JCO and SLAS will likely play a big part. The Sandy Moody family has agreed to the boards negotiation of $15,000 for a Sirius 3.5 meter dome and a Meade 16in LX200GPS telescope and pier with electronic focuser. The board will have a working trial of the scope before the board meeting on July 11 where the board will vote on whether to submit the purchase to the membership. If approved, the membership will vote on the purchase at the July meeting on July 19th. Be sure to come and hear about this exciting opportunity for SLAS and Jefferson College!

## Presidents Corner *by* Jim Small

WOW! What a month! Solar eclipse conference. AAS meeting at Union Station ALL week, June 8-13. Watching the Blues win the Stanley Cup at the conference! MSRAL conference the day after the AAS meeting concluded. Tour of Linda Hall Library and viewing of their Apollo display. Visit to Powell Observatory. Good talks and banquets. Reminiscing about 1960's vintage dorm rooms (it wasn't that bad…) Meeting with Jefferson College officials and staff about the Jefferson College Observatory. Finding out that Sandy Moody has accepted our offer for their observatory. Then the eclipse broadcast live from Chile yesterday! (still waiting for photos from Jackie Beucher or Angela Speck who are down there). Enjoying the video of the shadow of the Moon crossing the Earth as viewed from the ISS!

Everything this month was amazing, but I'll do the best part up front. Sandy Moody family has agreed to the proposed price from the board of $15,000 for the Sirius Observatory and Meade 16" telescope and pier. It's a great deal for both of us if the membership approves. The committee will test drive the telescope Friday night and the board will get a test drive of the scope on Monday night. The board will consider sending the proposal to the membership at the board meeting on Thursday. Announcements will then be sent out concerning the proposal after the board meeting.

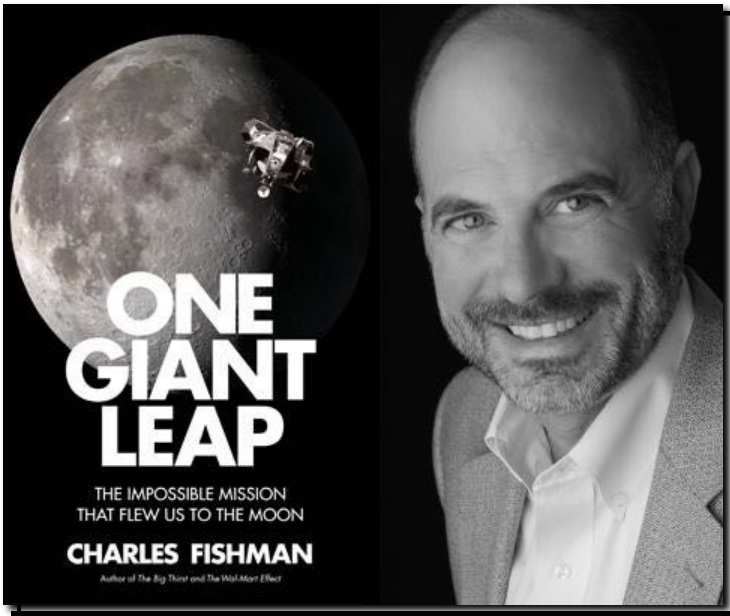
The AAS meeting and eclipse workshop were amazing. Astronomy overload is the only way to describe it. There were so many talks it would have taken a team of ten people to cover them all. Bradley will be booking speakers who were at the conference for a long time! I got to talk to one of the authors of the textbook I use for astronomy (who happens to be the president of the AAS) as well as MANY professional astronomers.

MSRAL was great as always. Good speakers and food… just needed some better skies for Powell Observatory. Linda Hall Library was truly amazing. If you get a chance and are in KC, definitely look up the Apollo exhibit!

July will be almost as good as June! Look for tons of activities around the Moon Landing anniversary and be sure to join us at the July meeting to hear about the observatory! If it's approved, the observatory will likely be moved and in place maybe around the Leonid meteor shower! If we are lucky that is… lots to do before that would happen…. Stay tuned! Jim S.

## Library Binocular Build and Launch

Volunteers had a good day on Saturday, June 29 building the 106 binocular kits for our new library binocular checkout program. The kits are ready for the libraries. Many thanks to the Grand Glaize Branch of St. Louis County Library for providing the meeting room space. The 9 member Volunteer Team included (left to right) Donna Ficken, John Beaury, Amy Elbert, John Zinn, Chuck Simms, Rich Jennings, Phyllis Nolan, and John Strebeck. Not pictured is Don Ficken who took the photo. Here are more photos of the team in action: https://flic.kr/s/aHsmEEtVfo




## Author Event at St. Louis County Library Headquarters Charles Fishman

Tuesday, July 9, 2019 - 7:00p.m. Doors open at 6:00 p.m. (Events like this usually fill quickly) SLSC Headquarters From the bestselling author of "The Wal-Mart Effect," "One Giant Leap" introduces readers to the men and women tasked with putting a man on the moon. From the halls of MIT, where the eccentric digital pioneer Charles Draper created the two computers aboard Apollo 11, to the factories where hundreds of women weaved computer programs with copper wire, Charles Fishman captures the sweeping achievement of these ordinary Americans. Books will be available for purchase at the event from the Novel Neighbor. For a sample of the work from this book, check out this article**:** **https://www.fastcompany.com/90368723/dramatic-scene-apollo-13-return-to-earth-that-you-wont-see-in-tom-hanks-movie**

## Events Around Town Featuring Apollo Moon Landing Anniversary

This link provides a fairly comprehensive list of events that feature the 50th anniversary of the Apollo Moon landing

**https://www.stlsprout.com/articles/news/item/7401-st-louis-celebrates-lunar-landing-anniversary**

## Update on Parking for Meetings

The meeting for June was held in Brown Hall, Room 118, due to a scheduling conflict for McDonnell Hall. It worked out well because a side door to the room allowed us to see people coming to the McDonnell Hall entrance looking for the meeting. In the future, for times when there are scheduling conflicts, we will likely pursue Brown Hall as the second choice.

Parking for our meetings include free yellow zone and Bearly parking (for car pool folks)where the closest is by the greenhouses and Danforth University Center garage parking spaces. 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.

## Election Results and a Message from John Newcomer

The results are in! Your new board elected in May is President Jim Small, Vice President Bradley Waller, Secretary Mark Jones, Treasurer Bill Winningham, Hospitality Larry Campbell and Board Member at Large John Newcomer.

Here is a note from John Newcomer, back on the board once again! Welcome to John!

Hello. I am your recently-elected "Board Member at Large", although I've been a member of the society for some time. I joined back in 2001, was active for several years, then I was inactive for several more years but have maintained my membership.

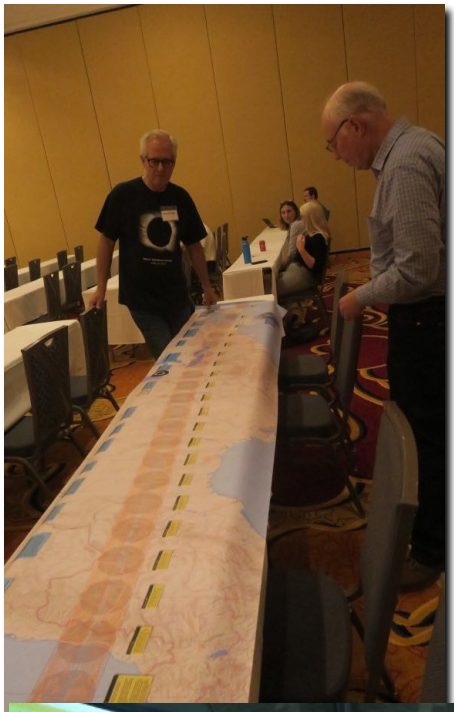
I was part of a conversation a while ago about the current board for the society, and that we see the same faces. (Jim, how many years have you been president?). As a society, we should welcome the diversity of opinions across the membership. Sure, we have our mission, and some fixed programs that we have committed to for the long term, but we would still benefit from new ideas and ways to engage the community in our outreach and other endeavors.

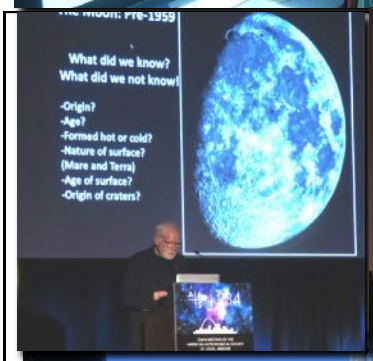
As a result of that conversation, I answered the call to serve the society. The Board Member at Large position is a three-year term originally designed to provide continuity of leadership of the society, as the other elected positions are one year only. There are 8 elected officers who lead the society. Frankly, running the society is not hard; and doesn't require any special qualifications. I will encourage any member who is interested in developing or expanding their leadership skills to consider getting involved in the society at a higher level. I'd be happy to work with members who are interested; contact me at board22@slasonline.org.

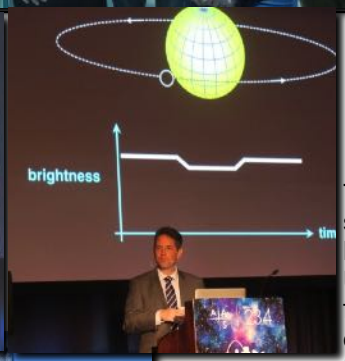
I took this path myself. Back in the day, I served as president. This gave me the opportunity to get experience in speaking to a group (leading our monthly public meetings), organizing my thoughts (through setting the agenda for the executive board meetings), learning about the finances of a non-profit (through annual budget discussions). Learning these things helped me in my day job, when I went after (and eventually earned) a management position.

I look forward to serving the society once again.

John Newcomer





## American Astronomical ociety Meets in St. Louis

The AAS held their summer meeting in St. Louis June 8-13 at Union Station. It began with a Solar Eclipse workshop to prepare for the 2024 solar eclipse. The rest of the meeting opened Sunday night and continued through Thursday, culminating with a tour of Cahokia Mounds. Hundreds of talks were presented from professional astronomers to students. There were so many talks it would have taken a team of 25 people to even attempt to cover all of them! Plenary talks that had no conflicts were held twice a day so attendees could all see the presentation. It was an exhausting week of astronomy overload and was a very good deal because of the educator discount which was available. (The Eclipse workshop was only $15) It was a great learning experience and a multitude of handouts for outreach was obtained from the vendors. Details of the meeting may be found here https://aas.org/meetings/aas234 Click on "online planner" for presentations.

**Photos: Top left:** Mike Zeiler and Don Ficken look over the latest map of the 2024 eclipse designed by Zeiler. **Top Right:** Don Ficken participating in a panel discussion with Rick Feinberg, Trish Peters, Bob Baer and Angela Speck. **Middle Left**: Angela Specks students with a poster of their research. Middle Right: Mixing it up at the solar eclipse meeting. Above Left: Jim Head discusses his involvement with the Apollo missions. **Above Middle**: Josh Winn speaks about exoplanets. Winn is a Great Courses lecturer. **Above right**: Vayujeet Gokhale of Truman State talks about measuring light pollution. **Bottom**: Bill Iseminger discusses Woodhenge at Cahokia Mounds with AAS members who signed up for the trip.

# Bringing Astronomy to Ex-Offenders

## Amateur Astronomers Bill Biermann and his nephew Samuel Greaves are sharing their love of stargazing with men transitioning out of prison into new lives.

Bill and Sam's project involves teaching astronomy classes at the Transition Center of St. Louis, a Missouri Department of Corrections residential center. The center provides housing, employment readiness training, education, life skills courses, and classes on parenting, money management and other programming. It serves men who are transitioning back into society following completion of their prison sentences.

Viewing the Heavens and Glimpsing a New Horizon

"I have done lots of star parties over my life for scouts, schools and other organizations," Biermann, said. "Nothing comes close to the level of enthusiasm that the guys expressed."

Biermann, an amateur astronomer for 35 years, and Greaves, a fellow star enthusiast, worked with the center's superintendent, Don Arias, to host the classes. They presented the transition center with their own telescope.

The astronomy program began in September 2018 and includes monthly classes. Each class features a lecture and a chance for the men taking part to view the stars through their grant-funded telescope.

"They were blown away by what they were seeing," Greaves said. "Almost all of the guys at the center have never looked through a telescope. It is an incredible feeling to be able to provide them with that experience. It allows them to experience the vastness of our universe. "

## Space Voyager Collection

*by* Shanna Ramirez

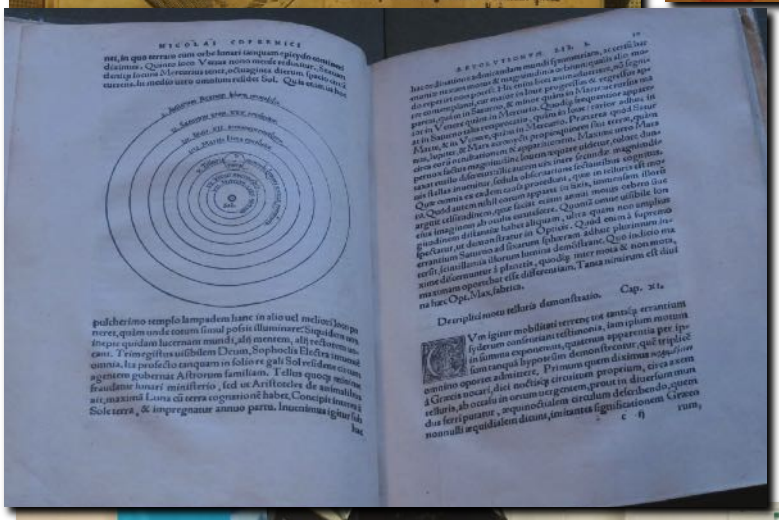
Vans commemorates NASA with the Space Voyager Collection consisting of shoes and clothing that pays tribute to the 60 years of space exploration and innovation. The textures and features on the merchandise was inspired by that of the original space gear. Some of the features include Velcro patches, schematics inside the shoes, and authentic mission logos from the various decades of the program. The Vans Voyager Collection can be viewed at https://www.vans.eu/space-voyager.html

## This is Why STAR TREK is ALWAYS Better Than Star Wars

NASA's Mars Reconnaissance Orbiter spotted a feature on Mars that looks like the famous "Star Trek" logo. (Image: © NASA/JPL/ University of Arizona)
https://www.space.com/star-trek-logo-on-mars-nasa-photo.html?utm_source=sdc-newsletter&utm_medium=email&utm_campaign=20190615-sdc

## Announcing the Discovery of a New Planetary Nebula

SLAS Member Shanna Ramirez and her Hubby, Dan,are expected to confirm their |discovery around 11 January 2020!!!
When confirmed, this will be their first planet :-)



**Top**: StarBQ before the observatory visit to Powell Observatory south of Kansas City

**Above left:** illustrations from a pirated 1610 |edition of *Sidereus Nuncius* by Galileo

**Above:** Sign welcoming visitors to the Apollo exhibit at the Linda Hall Library near Rockhurst University in Kansas City.

**Left:** Page from De Revolutionisbv by Copernicus. It refutes Cook's geocentric model of the solar system… :-)

**Below:** St Louis attendees at the MSRAL convention.

**Above left:** Chuck Allen with demonstrations of the scale of the local group of galaxies using LED lights
**Above right:** Mark Jones looks through the telescope at Powell Observatory.
**Left:** Powell Observatory.
**Below left** Calen Henderson presents the key-note talk at the banquet Saturday night
**Below right** Lario Yarino with a demonstration of infrared light before his talk about SOFIA
**Bottom left** Bruce McMath presents the Amateur of the Year award to Jerel Williams of ASKC

**Bottom right** MSRAL group shot.

# St. Louis Astronomical Society Executive Board Meeting Minutes May 2, 2019

**1. Opening Activities: Attending:** Jim Small, Bill Winningham, John Newcomer, Brad Waller, Rich Heuermann, Mark Fedde, Mark Jones
Meeting called to order at 6:58pm April Board minutes distributed before the meeting. Rich made motion to approve minutes, second by Larry. Minutes were approved.
**2. External Business:** Astronomy Day at the SLSC. 10-4pm **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: Jun 6, Jul 11 (4th is 1st Thursday), Aug 1, Sep 5, Oct 3, Nov 7, Dec 5

**3. Director Reports:**

**President: Jim Small:** Elections: nominations for all posts Pres – Jim Small, VP Bradley Waller, Sec Mark Jones, Treas Bill Winningham, Hosp Larry Campbell, BMAL John Newcomer. Jim will be attending NCRAL convention this weekend, will keep an eye on speaker possibilities for July. Brad said Jim can spend up to $100 for door prizes. Will also look for attendance prizes and materials for Astronomy Day via vendors assuming we don't get trapped by flood water. Bio for our May speaker, Andres Plaza, sent to Rich. AAS eclipse workshop will be in STL June 7-8 and AAS full meeting on June 9-13

**Vice President: Bradley R Waller** Brad waiting to hear back from Angela Speck about August meeting

**SLAS Monthly Meetings** **Presentations 2019**

| Month | Name | Topic | Sponsor |
|---|---|---|---|
| 17-May-2019 | Andres Plaza, PhD | LSST | Princeton University |
| 21-Jun-2019 | Josiah Lewis, PhD | Presolar Grains: Solids from Other Stars Studied in the Lab | Wash U |
| 19-Jul-2019 | TBA | | |
| 16-Aug-2019 | Angela Speck, PhD | 2019 Solar Eclipse Results | Mizzou |
| 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:** Observe the Apollo landing sites Mark Jones or Grant Martin *Welcome Aboard Meetings for new members are still planned for each month.

**Secretary: Mark Jones**: Jefferson College Observatory update. Organizational meeting held last week. College is agreeable to SLAS observatory as part of facility plan. Observatory committee recommends we proceed with negotiations on 16-inch observatory. June is when college trustees approval of budget. After June we can begin publicizing fundraising effort. Jefferson College has agreed to handle fundraising donations through their accounts. Donations will be ear-marked for observatory

**Treasurer/ALCor: Bill Winningham** CD's Bill will send out financial report by Sunday. One CD rolled over ($5K) at First Bank for 11 months. Surrender fee is 1% for CD. Annual tax 990N has been filed. Insurance policy was renewed at same cost as last 2 years.
**Hospitality: Larry Campbell** Larry needs feedback on preferred foods. Cheese and crackers, fruit trays, veggies, cookies or donuts. **Membership recognition**: Larry and Rich will work on wording for plaque and send to Board for comment.

**Board member at large reports**

**Rich Heuermann (2019):** Summer reading programs about at least 15 scheduled. These are single person events no need for extra volunteers Two binocular kits made for Trout Lodge, money from escrow account used Remaining budget will be spent soon or check will be written to Trout Lodge to close escrow. Wash U has reimplemented no red zone parking. Warning will be sent to members and Public before May meeting. We will be back in McDonnell hall in May

**Tom Nickelson (2020):** No report

**Brent Buch (2021):** No report

**4. Committee Reports: If needed**
**Library Telescope Program: no report**
**Membership: U**pdated report of membership showing a count of 189 members at the end of April. This is the highest member count recorded since 12/31/2009, even surpassing 2017, the year of the total solar eclipse which ended the year at 185 members. Interestingly, the membership count gain is not coming from new memberships. In fact, the addition of new members is lagging last year by 40% (11 vs 18). The gains appear primarily due to improved member retention and, to a lesser extent, from a few members switching from individual to family memberships.
**Newsletter**: Please forward articles to newsletter@slasonline.org Editor? New newsletter logo. Mark Fedde will make a colorized version
**Website**: Current speaker listed on website, 2019 speakers updated.
**Dark Site:** Spring events listed on calendar
**Publicity:** Press release will go out next week
**Observing Programs:** One member (John Strebeck) has earned their Constellation Award and pin, to present at May meeting.

**Star Parties:** Bill Breeden sent report before meeting. We have 4 requests that need volunteer to lead. We have about 140 events scheduled for remainder of the year.

**5. Old Business:** None
**6. New Business:**
Motion by Mark Jones. ***I request the Board to grant permission for the observatory committee (Jones Small, Ficken) to negotiate with the Moody family for the 16-inch LX-200 Meade telescope, accessories and dome up to a price of $15,000. This is for negotiations only not for purchase until final approval by general membership vote.*** Second Rich Heuermann, motion passed.

**7. Closing Activities**: Brad moved to adjourn second by Larry meeting adjourned at 8:45pm

3:20 PM
06/06/19
Accrual Basis

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

| | Jan - May 19 | Budget | $ Over Budget |
|---|---|---|---|
| Ordinary Income/Expense | | | |
| Income | | | |
| Loaner Telescope Sales | 75.00 | 0.00 | 75.00 |
| Magazine Subscription | | | |
| Astronomy Magazine Sales* | 203.65 | 281.70 | (78.05) |
| Sky & Telescope Sales | 392.45 | 362.45 | 30.00 |
| Total Magazine Subscription | 596.10 | 644.15 | (48.05) |
| Membership Dues | 2,020.00 | 1,980.00 | 40.00 |
| Total Income | 2,691.10 | 2,624.15 | 66.95 |
| Cost of Goods Sold | | | |
| Magazine Subscriptions | | | |
| Astronomy Magazine Cost* | 211.45 | 281.70 | (70.25) |
| Sky & Telescope Cost | 392.45 | 362.45 | 30.00 |
| Total Magazine Subscriptions | 603.90 | 644.15 | (40.25) |
| Merchandise | | 100.00 | (100.00) |
| Total COGS | 603.90 | 744.15 | (140.25) |
| Gross Profit | 2,087.20 | 1,880.00 | 207.20 |
| Expense | | | |
| 1-Programs & Events | 318.19 | 1,072.66 | (754.47) |
| 2-Newsletter | 93.62 | 211.00 | (117.38) |
| 3-Library expense | 80.00 | 235.00 | (155.00) |
| 5-Loaner Scopes | | 41.00 | (41.00) |
| 6-Brochures | | 260.00 | (260.00) |
| 7-Insurance | 825.00 | 825.00 | |
| 8-Website | 179.40 | 285.00 | (105.60) |
| 9-Administrative Expenses | 72.47 | 104.17 | (31.70) |
| Total Expense | 1,568.68 | 3,033.83 | (1,465.15) |
| Net Ordinary Income | 518.52 | (1,153.83) | 1,672.35 |
| Other Income/Expense | | | |
| Other Income | | | |
| Total Donations | 560.05 | 0.00 | 560.05 |
| Interest Income | 142.89 | 42.00 | 100.89 |
| LTP Receipts** | 3,566.76 | 0.00 | 3,566.76 |
| YMCA Trout Lodge Scope Proceeds | 450.00 | 0.00 | 450.00 |
| Total Other Income | 4,719.70 | 42.00 | 4,677.70 |
| Other Expense | | | |
| LTP Disbursements ** | 2,837.22 | 0.00 | 2,837.22 |
| LTP Escrow Funding | 500.00 | 500.00 | 0.00 |
| YMCA Trout Lodge ESCROW Expense | 838.50 | 0.00 | 838.50 |
| Total Other Expense | 4,275.72 | 500.00 | 3,775.72 |
| Net Other Income | 443.98 | (458.00) | 901.98 |
| Net Income | 962.50 | (1,611.83) | 2,574.33 |

* Astronomy Magazine cost of goods vs revenue received difference due to inconsistent pricing of the publisher.

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

| | Dec 31, 18 | May 31, 19 |
|---|---|---|
| ASSETS | | |
| Current Assets | | |
| Checking/Savings | | |
| Checking - First Bank | 9,990.59 | 10,509.40 |
| Deposit, Certificate of | 20,239.11 | 15,701.32 |
| Library Telescope Escrow | 91.35 | 765.73 |
| PayPal | 0.00 | 164.76 |
| Savings - First Bank | 46,379.35 | 51,064.03 |
| YMCA Trout Lodge Escrow | 627.87 | 194.53 |
| Total Checking/Savings | 77,328.27 | 78,399.77 |
| Other Current Assets | | |
| Inventory Asset | 821.53 | 821.53 |
| Undeposited Funds | 105.00 | 0.00 |
| Total Other Current Assets | 926.53 | 821.53 |
| Total Current Assets | 78,254.80 | 79,221.30 |
| Total Fixed Assets | 0.00 | 0.00 |
| TOTAL ASSETS | 78,254.80 | 79,221.30 |
| 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 | 947.86 |
| Total Equity | 78,254.80 | 79,202.66 |
| TOTAL LIABILITIES & EQUITY | 78,254.80 | 79,202.66 |

**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.
Jul 11 (4th is 1st Thursday), 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

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**
Jul 5, Aug 2, Sep 6, 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

| | |
|---|---|
| | **July** |
| 1 Mon | Flag on the Moon—NASA |
| 2 Tues | Moon and Stars |
| 3 Wed | Flag on the Moon |
| 5 Fri | SLSC Public Telescope Viewing |
| 8 Mon | Flag on the Moon |
| 9 Tues | Fests Cub Scout Day Camp |
| 10 Wed | Francis Park Stargazing |
| 10 Wed | Tourist Guide to Mars |
| 10 Wed | Grand Glaize Library |
| 11 Thurs | SLAS Board Meeting |
| 11 Thurs | Eureka Hills Library |
| 12 Fri | Riverside Regional Library |
| 13 Sat | Tourist Guide to Mars |
| 13 Sat | Stargazing at the Arch |
| 13 Sat | Jefferson County Library |
| 14 Sun | Missouri Botanical Garden |
| 15 Mon | Oak Bend Library |
| 16 Tues | SLAS/Washington State Park |
| 17 Wed | A Warp-10 Tour of the Universe |
| 17 Wed | A Flag on the Moon—NASA |
| 19 Fri | SLAS Regular Meeting |
| 20 Sat | Apollo 11 50th Anniversary - SLSC |
| 20 Sat | A Tourists Guide to Mars |
| 24 Wed | A Flag on the Moon - NASA |
| 26 Fri | Brentwood Public Library |
| 30 Tues | A Flag on the Moon |
| 30 Tues | A Tourist Guide to Mars |
| | **August** |
| 1 Thurs | SLAS Board Meeting |
| 1 Thurs | A Warp 10 Tour of the Universe |
| 2 Fri | SLSC Public Telescope Viewing |
| 3 Sat | SLAS Dark Sky Observing |
| 5 Mon | Moon & Stars from Your Backyard |
| 5 Mon | Natural Bridge Library |
| 6 Tues | Stargazer at Kitun Park |
| 7 Wed | Francis Park Stargazing |
| 7 Wed | Indian Trails Library |
| 8 Thurs | Florissant Valley Library |
| 9 Fri | Universe of Stories |
| 10 Sat | Space Science Explorer |
| 10 Sat | Perseids Over Babler |
| 11 Sun | Missouri Botanical Garden |

## 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
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***John Newcomer*** 314-496-4636
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**ALCOR** ***Bill Winningham*** 636-357-2763
(Astronomical League Correspondent )
treasurer at slasonline.org

**MSRAL Rep.** ***Jim Small*** 314-909-7211
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## COMMITTEE CHAIRS

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

**Librarian** ***Jim Small*** 314-909-7211
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**Loaner Equipment** ***Greg Gaines*** 314-277-3082
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**Merchandise** ***Vacant***
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**Membership** ***Don Ficken*** 636-225-0269
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**Observing Programs** ***Mark Jones*** 636-394-2342
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**Publicity** ***Rich Heuermann*** 314-962-9231
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**Recognition** ***Larry Campbell*** 636-244-2867
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**Social Media** *Vacant*

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

**Star Party Coordinator** ***Bill Breeden*** 314-276-3613
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**Telescope Making** ***Bill Davis, Jim Melka*** 314-469-3061
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**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**

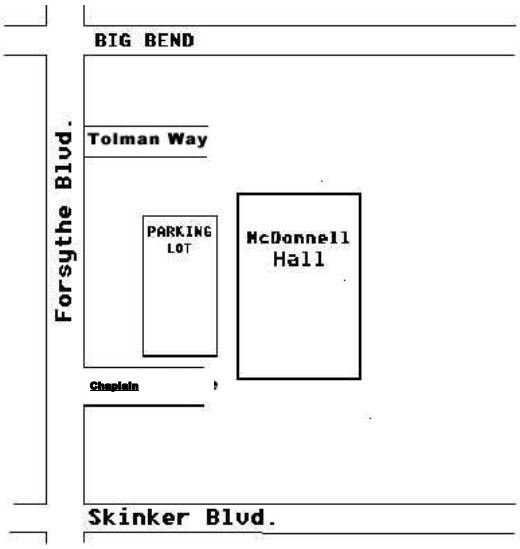
Follow us on
Twitter: @stlastro
Facebook: @stlastro

## 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
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