THE EVENT HORIZON

ST. LOUIS ASTRONOMICAL SOCIETY

Devoted to the Interest and Advancement of the Science of Astronomy

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Piloting SOFIA, NASA's Flying Observatory

by

Craig O'Mara
NASA

Retired Air Force, NASA, and airline pilot Craig O'Mara will be featured at the July meeting of the Saint Louis Astronomical Society. The meeting will begin at 7:30 PM Friday, July 19 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 Bearly parking is available just west of McDonnell Hall. Street parking along Forsyth and garage parking spaces are also available. Handicap parking is available next to McDonnell Hall.

Earth's air, while vital for all of us, causes major problems for astronomers. Clear air --- isn't. It is a collection of small pockets of slightly different densities, pockets in constant motion. Each ray of light is shifted as it goes through each pocket. As a result, even "still" clear air causes blurring, and causes stars to twinkle. The air also blocks much infrared and most ultraviolet light from reaching ground-based telescopes. One solution – get the telescope above as much air as possible. Best would be to get the telescope above all of the air. But space-based telescopes are very expensive to build, launch and support. To ease the cost burden, NASA flies an aircraft-based telescope. Named "SOFIA", this is a telescope 106 inches across, mounted in a specially modified Boeing 747 airplane. Mr. O'Mara will talk about the SOFIA (Stratospheric Observatory For Infra-red Astronomy) aircraft and his experiences with piloting the flying observatory.

Craig O'Mara was a NASA Research Pilot on SOFIA from 2016 to 2018. He learned to fly at 16 years old in 1970 in East St. Louis, Illinois. He was a USAF Reserve Instructor pilot/Flight Examiner from 1979 to 2002, and flew United Airlines aircraft such as the Boeing 737, 777, and 787 jets from 1985 to 2018.

Upcoming Presentations for 2019

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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SLAS Board Votes to Move Forward with Purchase of Moody Observatory to be Placed at Jefferson College Observatory

The SLAS board voted to approve a motion to be brought before the membership at the July meeting to purchase the Sandy Moody family observatory for $15,000 including the Sirius 3.5 meter dome and a Meade 16in LX200GPS telescope and pier with electronic focuser. An additional $1000 will be requested to facilitate moving and installing the observatory. The board will test the telescope this Thursday before the meeting. Weather and other factors prevented the board from testing before the board meeting July 11. The membership will vote on the purchase at the July meeting on July 19th. The full motion is included inside the newsletter. Be sure to come and hear about this exciting opportunity for SLAS and Jefferson College! More information inside this issue.

Presidents Corner *by* Jim Small

The future for SLAS looks very bright! Not only have we had tremendous success with the Library Telescope and the new Library Binocular program, but our membership is at it's highest level since Don Ficken has been working with membership. Higher than the eclipse follow up and likely to keep growing. The 50th anniversary of the Apollo 11 Moon landings will do even more to promote our Society and our mission.

For the first time, we will have a solid asset for our members to enjoy (assuming that the purchase of the Moody Observatory is approved by the membership at the July meeting). We have been longing for such a place forever. Through Jefferson College, we now will have nearly the perfect situation for placement. AND it's CLOSE! You really can't believe how much this will help to promote the society and our mission down the road. I am looking forward to many events at the Jefferson College Observatory

The board approved the motion to purchase the observatory to send to the membership on July 11th. The vote was 6-1 with one member absent and another nervous about the purchase of a used telescope. You will be able to pick the brain of the members who attend the test drive Thursday night at the meeting to see how they feel about the purchase after doing a test run. It has been a long process, but if it is approved, it will be implemented relatively soon.

The process for Jefferson College will be as follows if the purchase is approved.
1. We submit drawings for the footing for the pier of the telescope and the foundation for the dome.
2. Jefferson College will submit the drawings out for bids.
3. Those bids will be submitted at the Jeffco board meeting in September.
4. If the bids are approved, the development will proceed after the October board meeting for Jeffco.
5. Construction will begin sometime after that.
6. Once construction is complete, the dome, telescope and pier will be moved and installed. SLAS will rent or borrow equipment to make that happen. Volunteers will be needed.at that time!
7. The college will provide electricity and (we are hoping) internet for the observatory

After doing the successful test run for the observatory Tuesday night, I am truly excited that this project will actually get under way! As John Newcomer expressed elsewhere in this newsletter, SLAS has been trying to put an observatory into operation for a long time! Perhaps by this time next year, we will have many visitors to see it in operation! Can't wait for the meeting! jrs

SLAS Board Votes to Submit Motion to Membership to Purchase Moody Observatory

SLAS Members, at the July 19, 2019 meeting at the regular location at Washington University, you will be asked to approve the motion below. The motion will authorize the Board to spend $16,000 for an observatory on the Jefferson College campus in Hillsboro, MO. This motion was discussed and passed at the July Executive Board Meeting and is now ready for approval by general membership. Please come to the July meeting and show you support for this motion.

Background information about the Moody observatory and the project at Jefferson College may be found on subsequent pages in this newsletter.

The Motion: I move that the SLAS Board approve the observatory budget for $16,000 and recommend its approval to the general membership. The approval of this motion by SLAS membership, will authorize the purchase of the Moody Sirius Observatory, Meade 16" LX200GPS telescope, mount and pier, electronic focuser and associated equipment for $15,000. Also, that SLAS membership will authorize the Board to spend up to a $1,000 limit for necessary expenditures related to moving and making operational the observatory on campus. Expenditures may include: (1) a Moody Family plaque acknowledging the family's commitment to this project; (2) truck/trailer and equipment rentals to move the observatory; (3) miscellaneous parts and materials for mounting the dome to the foundation and for connecting the electricity source; (4) and security related items such and locks and bolts to theft-proof the observatory. Further, SLAS membership agrees that the purchased observatory will remain SLAS property and responsibility. That Jefferson College in providing a location on campus and their investment in site preparation for the SLAS-owned observatory, including the concrete pad and pier mount, will have full access and shared usage rights to the observatory. Motion by Mark Jones and seconded by Tom Nickelson. Motion passed.

If you have any question about the observatory purchase or the Jefferson College Observatory project, don't hesitate to call Jim Small or Mark Jones at the numbers in the contact information in the back of the newsletter. Don Ficken is the SLAS coordinator for the Jefferson College Observatory project.

Background Information for the Jefferson College Observatory
by Mark Jones

SLAS has been interested in starting its own observatory. A SLAS observatory would provide SLAS members access to a telescope and enhance our public outreach. SLAS is partnered with Jefferson College in Hillsboro, MO to establish an observatory on their campus.

As a partnership SLAS and Jefferson College would work on fund raising to buy and build the observatory. Jefferson College has agreed to dedicating an area on the campus for the observatory. Jefferson College has agreed that SLAS may use part of this area for a SLAS-owned observatory. SLAS agrees to provide proof of liability insurance coverage of $2 million dollars and to properly insure the SLAS-owned observatory dome and telescope. If SLAS procures an observatory, Jefferson College has agreed to finance the structural foundation for the SLAS-owned dome and telescope. Jefferson College also agrees to provide electrical power to the observatory. Jefferson College agrees to allow SLAS access to the observatory site for public and private (member-only) use. Access will be 24/7 and will only be restricted during times when the campus is shut down for emergency reasons. Jefferson College has agreed to make the SLAS-owned observatory the first construction priority. In return for this investment, Jefferson College will have full access to the SLAS-owned observatory primarily for academic curriculum and education. Jefferson College and SLAS will coordinate shared time of the observatory and a joint committee will be established to handle scheduling. Either Jefferson College or the St. Louis Astronomical Society shall have the right to terminate this agreement, for any reason, with six month's written notice.

SLAS has been in discussion with the James Moody family to purchase their observatory dome, telescope and pier. Sandy Moody the wife and owner has agreed to sell the equipment to SLAS. The observatory purchase will include: the Sirius 3.5 meter dome and walls; the Meade 16" LX-200 telescope and pier; and motorized focuser. It will be SLAS' responsibility to take ownership of the equipment and carefully remove it from the Moody residence. Removal will require SLAS volunteers to disassemble the equipment and transport it to its new location. It may also require special equipment and/or vehicles to transport the telescope, pier and dome. The Moodys have agreed that SLAS will not be required to move the observatory until the Jefferson College site is ready. SLAS' objective is to get the telescope operational and providing benefit to SLAS members, Jefferson College and the community as soon as possible.

Jefferson College / Moody Telescope
by John Newcomer

You've probably heard by now of the plan of the society to purchase a telescope and dome and place it at Jefferson College. I haven't been involved in the negotiations for this deal, but I think it's a fantastic opportunity for the society.

Since before I joined, the Society has wanted an observatory for the use of the membership, and we began amassing money for that purpose. Ever since I can remember, the society has had more money than necessary for current operations. There were two problems:

1) The cost of purchasing land and building construction were far beyond the money we were able to generate.

2) Any specific place we selected would be inconvenient to a majority of members. We are pretty well distributed across the St Louis metropolitan area.

When we started talking to Jefferson College, that addresses the first concern. The college will own the land, and will provide maintenance and security. That takes care of a large chunk of the money that would normally be spent by the society. The availability of the Moody telescope at this time just sweetens the deal. Yes, it is a used telescope and dome, but they've been well cared for and this setup is really on the boundary between amateur and professional astronomy.

The second concern remains. But that will be true for any point selected. Just like Danville favors those on the western side of town, and when we used to go to Carlyle Lake, that was more convenient for the folks on the eastern side of town. Jefferson College will be about 15 miles closer than when we used to go to Washington State Park.

Once this facility is up and running (we're still negotiating, so it's not ready yet), we will need to allocate blocks of time for the college to conduct their educational activities with the scope, and the society will create policies, procedures, and training for members who wish to use it. This will also give us premier equipment to participate and contribute to the field of astronomy through "citizen science" by making and sharing variable star observations, finding or confirming newly discovered asteroids and comets, and a number of other opportunities.

All of these things directly support the mission of the society; to promote the interest and science of astronomy. The executive board is currently preparing a motion to bring to the membership to authorize the purchase of the Moody telescope and dome (and possibly some other equipment). This motion will enable the plans to progress. Please consider the mission of the society when you are asked to vote on this initiative.

The diagram at left represents Phase I of the proposed Jefferson College Observatory. The dome represents the Moody Observatory proposed to be purchased by SLAS. The patio will have outlets around the perimeter. The wall will help keep lights from the parking lot off the telescopes. Jefferson College will pay for the development of the site, including the foundation for the dome with a $38,000 grant approved by the college and must be spent by June 30 of 2020. SLAS will have access to the site 24-7.

The Jefferson College Observatory: The Vision

by

Jim Small

For as long as I have been president, the membership of SLAS has longed for an observatory. We visit with ASKC and they have the terrific Powell Observatory with a large telescope, dome and classroom as well as a roll off roof building. Other clubs have facilities such as the terrific partnership with ASEM and St. Charles County Parks at Broemmelsiek Park. Both facilities are great but they have one big disadvantage. Both groups are not in control of the land around the observatory. I have visited lots of other club or personally owned observatories and some of them are amazing. Perhaps the best club owned observatories were with the Minneapolis Astronomical Society and the two sites they have. One of the sites has a 10" refractor and the other one has a dome that houses a 16" Meade with several other telescopes attached to it on a robust mount. The best set up for a personal observatory that I have seen is the roll off roof observatory at David Levy's house in Tucson. All of these operations cost a ton of money.

SLAS has considered partnerships with other groups, such as when we invested $500 to help with the floor for the Sangamon Observatory. I don't think SLAS members have had any real value out of that. We have looked around for close areas where we might partner for an observatory such as Shaw Nature Reserve or Tyson Research Area. Good ideas, but access is a bit of a struggle.

Enter Jefferson College. It's a campus located near Hillsboro, MO. It's a fair ways out along Hwy 21. (It takes me a little over 35 min to get there from Kirkwood). We have done several events on their campus and it's reasonably dark. Not Danville dark certainly, but then it's half the distance for anyone in St. Louis County. The site where it will be located is great. It's in a valley with the softball and baseball fields (no lights!!) and has a terrific parking lot. The rendering above shows the plan for phase I of the observatory right off the end of the softball field parking lot on the side away from the field.

The big advantages for this location are as follows:
1. It's on campus, so security and monitoring is automatic. Campus police will patrol.
2. It's the observatory for the college, so there won't be any development in the way of lights, etc. on the site.
3. Jefferson college owns all the land to the highway, so no housing can be built near the observatory. Not only that, but the highway is a greenway which doesn't allow development on either side of the highway.
4. It will be a permanent facility of the college and will be developed and protected by the administration of the college.
5. We will have 24-7 access to the facility for member use.
6. In phase I, Jefferson College has committed to paying for and providing the site development and foundation for the placement of the Moody dome if it's approved.

You just can't ask for anything better. Can't wait to get it built!!

50th Anniversary of the Apollo 11 Moon Landing at the James S. McDonnell Planetarium

Saturday, July 20 will be a great opportunity at the James S. McDonnell Planetarium. All day, there will be displays and exhibits of items related to the Apollo missions. If you have the time, RSVP on Night Sky Network for this event to volunteer at the 3 tables SLAS will have for this event. We will have lots of displays for both the Apollo missions and astronomy in general. It will likely be VERY crowded and represents a fine opportunity to promote the society and astronomy in general. There will be MANY people there who were NOT alive when the missions took place, so if you lived through it, YOUR perspective and stories would be great to share with the public as people approach us. We will also have solar telescopes out front if that is of interest to you. Feel free to bring a telescope for solar viewing!

We will have power at the tables, the SLAS TV for visual displays, iPads, globes and lots of other displays like Library Telescopes and Binoculars. If you have something you would like to display, bring it with you! We will also have TONS of handouts, etc from NASA and other organizations and observatories. You don't have to bring anything, there will be plenty to do when you get there.

Regarding volunteering, remember, as this event runs from 9-5:30, it will count as **two** events for volunteer hours for consideration for outreach pins for 2019.

Apologies for not having much more Apollo 11 information in this month's issue, but be aware there are TONS of shows about the missions being broadcast as well as other displays around town. We are also doing programs about Apollo with the Libraries. One of my favorites so far is the podcast by the BBC about the last 13 minutes of the landing and what it took. It is definitely worth a listen! Find the podcast here: **https://www.bbc.com/news/live/world-48991051**

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 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.

The Moody Observatory Testing, Purchase and Implementation

The Moody's called about selling the observatory last year and we have had it under consideration ever since. Don Ficken and I first checked it out, then got the board involved. Since that time, Mark Jones and I have been to the observatory several times and discussed it with Sandy Moody and her children and friend Doug Azwell, who was a good friend of Jim Moody and helped him install the observatory. Two weeks ago, Cook Feldman, Mark Jones, Doug Azwell and I did a test firing of the telescope and dome. The telescope tracked well, produced sharp images, but was having trouble with locating objects. It seemed to think it was somewhere else! It turns out that after some research, that the GPS system had a rollover event to change how they operate and the firmware for the telescope needed to be updated. The hand controller also needs to be replaced.

To that end, a cable set to update the telescope firmware was ordered, and we implemented the use of the Autostar II hand controller we have for a 10" Meade LX200 that was donated a couple of years ago. The telescope had never been used and the hand controller still had the protective film over the display! The cable arrived and I downloaded the software needed to update the firmware to my laptop. Tuesday night, Mark Jones, Doug Azwell and I went to the observatory, connected to the Moody telescope, downloaded the home data before we updated, then updated the firmware for the telescope with the new hand controller from our Meade. The update finished and it was time to fire up the telescope and do a test run.

The telescope performed perfectly! The GPS took a fix on the time, date and location, the home data was applied and when we asked it to find Arcturus, it found it! (well, very close, had to resync to get it located) Thursday night, the members of the board and others will come to do a test run for a look at more stars, objects, and Jupiter and do a test run of the operation of the telescope. That way, we can provide a good test report to the membership before they vote on the purchase of the observatory and telescope.

See you at the meeting!

St. Louis Astronomical Society Executive Board Meeting Minutes June 6, 2019

1. Opening Activities: Attending: call to order 19:00 Jim Small, Bradley Waller, Brent Buch, John Newcomer, Tom Nickelson Motion to approve minutes by John Newcomer, second by Tom Nickelson, minutes approved.
2. Eternal Business: Apollo 50th anniversary at SLSC on July 20. Need to talk to Eric and coordinate. First Friday: Prepare for inside display and need to gather materials **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: Jul 11 (4th is 1st Thursday), Aug 1, Sep 5, Oct 3, Nov 7, Dec 5

3. Director Reports:
President: Jim Small: Election results President: Jim Small, Vice-President: Bradley Waller; Secretary: Mark Jones; Treasurer: Bill Winningham, Hospitality: Larry Campbell, Board Member at Large: John Newcomer
Vice President: Bradley R Waller
SLAS Monthly Meetings **Presentations 2019**

Month	Name	Topic	Sponsor
21-Jun-2019	Josiah Lewis, PhD	Presolar Grains: Solids from Other Stars Studied in the Lab	Wash U
19-Jul-2019	Craig O'Mara	Flying SOFIA	NASA
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. *Solstice door prizes will be given away at the June meeting*.
Secretary: Mark Jones: Jefferson College Observatory update. Letter to Moody Family delivered. Would like to brief the Board on the Moody Observatory progress. Jim and I sat down with the Moody Family and presented them the attached letter. We then reviewed the contents of the letter and looked again at the dome and equipment. The Moodys were thinking of a higher value then we offered. Our offer was based on an internet search and we believe fair and justifiable. I think our proposal while not as high value offers the family with an intangible satisfaction of public benefit. The Moodys are certainly considering our offer and we invited them to attend our next Jefferson College Observatory committee meeting. If we can agree on price then we will create a Bill of Sale with details on items we will purchased and the conditions for removal from their property. I am sure we will also include some sort of family plaque or sign to be mounted to the observatory
Notes from Jim Small: Their price included an SBIG 8st CCD camera and equipment, including filter wheel, filters, etc. It also includes a really nice electronic focuser. That is the main reason for the difference in the price
Treasurer/ALCor: Bill Winningham
As I previously mentioned, I am out of town for work most of this week and won't be able to attend the Board Meeting. Attached are the financials through the month of May. The following are my comments on the Financials:
1. We had a $5,000 CD mature and are in the process of reinvesting it with and additional $10,000 out of savings. There was an issue with the paperwork at the bank so the new $15,000 CD will be issued sometime during June. (current rates are in the 2.3-2.5% for shorter duration, 10-15 month cds)
2. Increased interest on saving and the reinvested CD's is significantly higher than the past few years. Year to date interest income is $142, exceeding the total for all of last year.
3. We have received $560 in star party donation through May, which is comparable to recent years.
4. LTP receipts exceed disbursements year to date by roughly $600. This is due to revenue starting to come in for the Binocular Program. Disbursements related to the Binocular Program are expected to begin during June.
Please let me know if you have any questions.
Hospitality: Larry Campbell no report **Membership recognition**: no report
Board member at large reports
Tom Nickelson (2020): no report
Brent Buch (2021): -Update on new version of video player extension. -Having trouble adding the terms and conditions…will discuss. -Looking at possible search problem found during testing…will discuss. -All videos from Jan 2018 thru April 2019 are now working on site(please go ahead and try them out!). -Please find attached draft instructions for using videos. -Current Meeting Video Login(please do not publish yet…board is still finalizing details) (this will likely change before full membership rollout) Privacy policy? John N and Brent B will look into one as well as policies regarding member information retained via the website.
John Newcomer (2022): Goal is increasing engagement with the membership. John created article for newsletter to encourage members to participate in the leadership of the society.
4. Committee Reports: If needed
Library Telescope Program: no report
Membership: Our membership count has grown to 186 members which is five members over last year at this time. New member counts are actually down from last year (14 this year vs 19 last year). We can chalk up the membership gain to better renewals, including some renewals of expirations from last year, and some mix changes to family memberships.
Newsletter: Please forward articles to newsletter@slasonline.org Editor?
Website: Current speaker listed on website, 2019 speakers updated.
Social Networking: Here is last month's Facebook stats The popularity of the Facebook goes up with more interesting postings and astro news. So please follow and share your astro news One of our new members sent me a bunch of great photos they took thru a 20" they gave us permission to print in newsletter and post on Facebook. Your Page Insights Summary for St Louis Astronomical Society for May 8-June 4. Post Reach 292; Post Engagements 257; New Page Likes 11.
Night Sky Network: Message groups updated to reflect current board members
Loaner Scopes: Moving time? New donation: MINT orange tube Celestron C8 that was won as a prize from Astronomy Magazine.**Publicity:** Meeting for June moved to Brown Hall
Star Parties: Life Outside festival at CC park postponed to September 21st
5. Old Business:
6. New Business:
7. Closing Activities: Brad move to adjourn, John Newcomer second. Motion approved.

5:55 PM
07/11/19
Accrual Basis

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

	Jan - Jun 19	Budget	$ Over Budget
Ordinary Income/Expense			
Income			
Loaner Telescope Sales	75.00	0.00	75.00
Total Magazine Subscription*	696.00	973.80	(277.80)
Membership Dues	2,365.00	2,170.00	195.00
Total Income	3,136.00	3,143.80	(7.80)
Cost of Goods Sold			
Total Magazine Subscriptions*	703.80	973.80	(270.00)
Merchandise		100.00	(100.00)
Total COGS	703.80	1,073.80	(370.00)
Gross Profit	2,432.20	2,070.00	362.20
Expense			
1-Programs & Events	418.19	1,210.00	(791.81)
2-Newsletter	93.62	253.00	(159.38)
3-Library expense	80.00	235.00	(155.00)
5-Loaner Scopes		50.00	(50.00)
6-Brochures		310.00	(310.00)
7-Insurance	825.00	825.00	
8-Website	179.40	285.00	(105.60)
9-Administrative Expenses	79.08	145.00	(65.92)
Total Expense	1,675.29	3,313.00	(1,637.71)
Net Ordinary Income	756.91	(1,243.00)	1,999.91
Other Income/Expense			
Other Income			
Total Donations	878.65	0.00	878.65
Interest Income	176.00	50.00	126.00
LTP Receipts**	16,482.14	0.00	16,482.14
YMCA Trout Lodge Scope Proceeds	450.00	0.00	450.00
Total Other Income	17,986.79	50.00	17,936.79
Other Expense			
LTP Disbursements**	6,108.13	0.00	6,108.13
LTP Escrow Funding	500.00	500.00	0.00
YMCA Trout Lodge ESCROW Expense	838.50	0.00	838.50
Total Other Expense	7,444.63	500.00	6,944.63
Net Other Income	10,542.16	(450.00)	10,992.16
Net Income	11,299.07	(1,693.00)	12,992.07

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

** Includes donations towards the LTP Binocular Program, related expenses expected to occur in June through July.

St. Louis Astronomical Society
Balance Sheet
As of June 30, 2019

	Dec 31, 18	Jun 30, 19
ASSETS		
Current Assets		
Checking/Savings		
Checking - First Bank	9,990.59	10,769.70
Deposit, Certificate of	20,239.11	15,720.64
Library Telescope Escrow*	91.35	10,511.90
PayPal	0.00	411.75
Savings - First Bank	46,379.35	51,073.82
YMCA Trout Lodge Escrow	627.87	194.53
Total Checking/Savings	77,328.27	88,682.34
Other Current Assets		
Inventory Asset	821.53	821.53
Undeposited Funds	105.00	50.00
Total Other Current Assets	926.53	871.53
Total Current Assets	78,254.80	89,553.87
Total Fixed Assets	0.00	0.00
TOTAL ASSETS	78,254.80	89,553.87
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	11,299.07
Total Equity	78,254.80	89,553.87
TOTAL LIABILITIES & EQUITY	78,254.80	89,553.87

* LTP Escrow reflects funds collected to date for the 2019 Binocular Build. Funds expected to be dispursed for expenses by the end of July 2019

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
July 21, Aug 25, 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
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

19 Fri	SLAS Regular Meeting
20 Sat	Apollo 11 50th Anniversary - SLSC
20 Sat	A Tourists Guide to Mars
21 Sun	SLAS Sky Orienteering
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
13 Tues	Rock Road Library
16 Fri	SLAS Regular Meeeting
17 Sat	Sidewalk Solar Observinjg SLSC
17 Sat	Stargazing at the Arch
24 Sat	Library Telescope Maintenance
25 Sun	SLAS Sky Orienteering
31 Sat	SLAS Dark Sky Observing

September

4 Wed	Francis Park Stargazing
4 Wed	Daniel Boone Library
5 Thurs	SLAS Board Meeting
6 Fri	SLSC Public Telescope Viewing
7 Sat	Stargazing at the Arch
7 Sat	Stargazing SunCrest Festival
8 Sun	Missouri Botanical Garden
9 Mon	Lewis and Clark Library
11 Wed	Meramec Valley 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 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
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Secretary ***Mark Jones*** 636-394-2342
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Treasurer ***Bill Winningham, (Don Ficken - membership)***
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Hospitality ***Larry Campbell*** 636-244-2867
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treasurer at slasonline.org

MSRAL Rep. ***Jim Small*** 314-909-7211
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Social Media *Vacant*

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Devoted to the Interest and Advancement of the Science of Astronomy

ST. LOUIS ASTRONOMICAL SOCIETY

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

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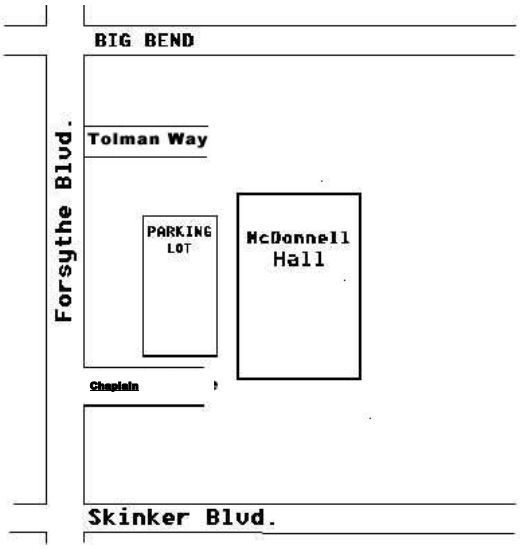
Who We Are and What We Do

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

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