

# THE EVENT HORIZON



**ST. LOUIS ASTRONOMICAL SOCIETY**  
*Devoted to the Interest and Advancement of the Science of Astronomy*

**VOLUME 30, Issue 2**  
**February, 2020**



## Probing the Sub-Microwave Universe *by* **K. Michael Malolepszy** **St Louis Astronomical Society**

K. Michael Malolepszy of the Saint Louis Astronomical Society will be featured at the February meeting of the Society. The meeting will begin at 7:30 PM Friday, February 21 in McDonnell Hall, Room 162, on the Washington University campus, Saint Louis, MO 63105. McDonnell Hall is accessible from Forsyth Boulevard via Tolman Way.

In addition to telescopes that use light waves to form images, there are now instruments that “see” the universe in invisible radiation. X-rays, heat, and radio waves are examples. In the high, frozen deserts of northern Chile is a device, nicknamed ALMA, which detects sub-microwave radiation. Michael Malolepszy will talk about recent research using the Atacama Large Millimeter/submillimeter Array (ALMA). ALMA is not strictly a radio telescope, since sub-microwave energies have higher frequencies than radio energies. But it does operate very much like a radio telescope interferometer such as the Very Large Array (VLA) near Socorro, New Mexico. ALMA is an array of 66 high-precision, movable antennas, which can be linked together to form one image. Mr. Malolepszy will present some of ALMA’s recent discoveries about

galaxies, galaxy clusters, and supermassive black holes. Perhaps of greatest interest for both scientists and the general public is the collaboration between ALMA and several other millimeter observatories in the Event Horizon Telescope project. What has been learned about supermassive black holes through sub-millimeter astronomy will be discussed as well as how the “first image of a black hole” was obtained

Michael Malolepszy is a veteran amateur astronomer. Now employed by the Department of Biology at Washington University, he formerly worked as a Radio Telescope Array Operator at the VLA. Mr. Malolepszy also presents planetarium programs at the St. Louis Science Center.

### Upcoming Presentations for 2020

- March** Joseph N Marcus, MD Carl Lampland, Pioneer Infrared Astronomer SLAS
- April** Raymond E Arvidson, PhD What Controls Planetary Climates Washington University
- May** William McKinnon, PhD Something about Ultima Thule of Course! Washington University
- June** Vayujeet Gokhale, PhD The Science of Light Pollution Truman State University
- July** Amy E Kimball, PhD Radio Quasars & the VLA National Radio Astronomy Observatory (Zoom)
- August** Jeffrey Gillis-Davis, PhD Apollo XIII Plus 50 Years Washington University
- October** Marco Cavaglia, PhD Gravitational Waves Part II University of Missouri: S & T

### Inside This Issue

- President’s Corner **2**  
HOMEMADE FEST!
- Volunteer Hours **3**  
2019
- SLAS Member Recognition Program **3-5**
- MSRAL **5**
- Board minutes **6**
- Financials **7**
- Events **8**
- Contacts **9**

### February 2020 Membership Recognition Recipients

The following members of SLAS will receive membership recognition pins and certificates at the November meeting. Please come to the meeting if possible!

- 5 Year Certificates and Pins**  
 David Ebers  
 Nicholas Kirschman  
 Roy Lieberman  
 Rosanne Naunheim  
 Chris Nobbe  
 Major Michael Floyd Thompson

### 10 Year Certificates and Pins

- Bruce Boston  
 Diana Boston  
 Brent Buch  
 Larry Campbell  
 Alan Sapia  
 Afred Schonvanez

### 15 Year Certificates and Pins

- Daniel Corso  
 John Duchek  
 Thomas Schloemann  
 Ann Trull  
 Jim Trull  
 Jim Twellman

- 20 Year Certificates and Pins -**  
 Rodney Rynearson  
 John Sullivan

- 25 Year Certificate and Pin -**  
 Paul Baldwin

- 30 Year Certificate and Pin**  
 Allan Stewart

- 45 Year Certificates -**  
 Rich Heuermann  
 Mark Jones



## **SLAS Volunteer Hours for 2019** *by* **Mark Jones**

Based on the volunteer hours logged in Night Sky Network, the members listed below contributed in 2019. A total of 1475.5 hours have been logged in NSN. If you believe your hours are in error please let me know or update NSN before Jan 20th. For those events lasting more than 6 hours volunteers were credited with 2 events if they accumulated 6 or more hours for that event. Based on these numbers 22 members have 5 or more events. 4 members had 4 events and 24 members has 1-3 hours. That means 53 members volunteered for 2019 Outreach programs. Thank you to all !

Donald Ficken	84	events;	195	hours
Bradley Waller	57	events;	162	hours
Cook Feldman	42	events;	119	hours
Mark Jones	34	events;	101	hours
Richard Jennings	30	events;	77	hours
James Small	26	events;	91	hours
John Beaury	23	events;	70.5	hours
Bill Breeden	21	events;	68.5	hours
Rita Breeden	20	events;	65	hours
Frank Mack	19	events;	37.5	hours
Larry Campbell	16	events;	43	hours
Rich Heuermann	16	events;	24	hours
John Strebeck	14	events;	40.5	hours
Sharon Bertram	13	events;	31.5	hours
Kathryn Czeschin	12	events;	24	hours
Richard Fefferman	10	events;	25.5	hours
Rick Menendez	9	events;	29.5	hours
Alfred Schovanez	9	events;	26.5	hours
William Neubert	8	events;	25	hours

Phyllis Nolan	8	events;	22	hours
Carl McCullough	6	events;	15.5	hours
Bill Biermann	5	events;	13	hours
Ann Trull	4	events;	14.5	hours
Jim Trull	4	events;	14.5	hours
David Adkins	4	events;	13.5	hours
Raymond Mueller	4	events;	11	hours
Robert Sullentrup	4	events;	11	hours
John Boncek	4	events;	6.5	hours
Randy Harrison	3	events;	14	hours
Mary Barteau	3	events;	7	hours
Timothy Hulla	3	events;	7	hours
Charles Laughton	3	events;	5	hours
John Zinn	2	events;	9	hours
Jeff Kisslinger	2	events;	6	hours
Anna Schroeter	2	events;	4.5	hours
John Sullivan	2	events;	4	hours
Brett Wilhelm	2	events;	2.5	hours
Mark Fedde	1	events;	5	hours
Maryanne Angliongto	1	events;	3.5	hours
Brittany Burney	1	events;	3	hours
Gregory Rigelman	1	events;	3	hours
Lance Traylor	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
Ken Kibort	1	events;	2	hours
Zuzana Schneider	1	events;	2	hours

## **SLAS Member Recognition Program**

### **Purpose**

This program is to recognize individuals (members and non-members) who help contribute to SLAS' mission statement "...for the educational purpose of encouragement of interest in and the dissemination of knowledge of the science of astronomy."

This program will not affect or replace recognition programs for Public Outreach through the Night Sky Network, or the Continuous Years of Service Awards.

The awards described below are a mixture of "member-only" recognition awards and those that could be awarded to non-members.

The Executive Board designed this program around 5 named awards; each recognizing a different area of contribution or service to SLAS. The following process will guide the program

## **Award Nomination Process**

1. Nominations are generally restricted to SLAS members only. All nominations from non-members must be approved by the program chair.
2. Nominations must be submitted using the form downloaded from the SLAS website.
3. It is the responsibility of the nominator to demonstrate how their nominee meets the criteria described for award.
4. If multiple nominations are received for the same person in any category, the nominators will be asked to re-submit a single nomination form.
5. Persons can be nominated in more than one award.
6. Nominations will open on Dec 1<sup>st</sup> for the following calendar year.
7. The deadline for nominations is May 1<sup>st</sup> of each calendar year.
8. Nomination forms will remain valid for 3 years after initial submission.

*(Continued on page 4)*

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## **Award Review Committee**

The Award Review Committee will be chaired by the Director of Hospitality and Membership, and will be comprised of additional volunteer SLAS members. The committee will require of a minimum of five members (including the chair) for voting. They will be responsible for executing the program under the guidance of this document. Following the nomination deadline each year, the committee will convene one or more meetings, and will use the following to guide their decisions:

1. Not every award must be given each year
2. They will select an awardee (or not) based on the merits of the valid nominations received.
3. There will be no rule preventing more than one person receiving an award for the same category
4. The committee will generally avoid awarding more than one category to a single individual. If a single person is voted an award in more than one category, the committee should consider awarding multiple persons for the same category.
5. Minutes must be kept of all committee meetings
6. The committee reserves the right to reject or return any nomination form to the nominator if the submission needs further substantiation, clarification, or re-classification to a different award category.
7. The Award Review Committee may propose program changes to the Executive Board for review/approval. If approved, the committee will update this document accordingly.
8. The program will be executed using the current version of this document as of the nomination opening day.
9. The committee will request and manage budget requests and expenditures to ensure smooth operation of the program.
10. The Award Review Committee will be responsible for retaining all valid nomination forms

## **Award Presentation**

1. Awards will be presented during the September regular meeting of the society
2. Each recipient will receive a plaque or trophy to commemorate the award
3. A SLAS cumulative plaque will be updated each year with new recipient names. This plaque will be displayed at SLAS regular meetings.
4. Additional recognition will be posted on the SLAS website and on member name tags
5. Award process to be reviewed and approved at September Board meeting for publishing in Sep newsletter to open nominations
6. 2020 Budget will include funding of the awards under the recognition committee

## **Award Categories**

### **The Albert M. Obrecht Founders Award**

In January, 1936, Albert Obrecht (1883-1955) founded the St Louis Amateur Astronomical Society. Albert and a small group of members established the first Constitution and By-Laws. Officers and committees and budgets were established to provide the perpetual structure for stability and growth. The mission of society was established in the Preamble of the Constitution as: "...to promote and diffuse the knowledge of astronomy...". Albert remained a member until at least 1954. The society's was renamed St Louis Astronomical Society during Albert's tenure and SLAS remains committed to the legacy handed down by these original founders. In the spirit of Albert M. Obrecht, the Founder Award should be given to board or committee person for their service to SLAS. The nominee must be a SLAS member. The nominee should have past or current positions as an officer or committee member. The nominee should demonstrate their contribution to the operation, stability and growth of the society.

### **The Lois D. Fitter Outreach Award**

Lois Diane Fitter (1943-2016) served SLAS in many capacities. Lois was a member of SLAS from 1985 until her death in 2016. Lois was a former SLAS President and Committee chair and a telescope maker. Lois will be remembered for her enthusiastic astronomy outreach events. In a time when no one really kept track of volunteer hours. Lois was out there showing kids and adults views through one of her homemade telescopes, creating a sense of wonder and excitement wherever she went. She was certainly not afraid of the dark and would take her Subaru to dark sites around the area to work on her own projects and hone her skills. She was very capable astronomer and speaker. Lois setup the original outreach plan for coordination with schools and organizations. She logged her events and established long lasting relationships with these organizations. In the spirit of Lois D. Fitter, the Outreach Award should be given to a SLAS member with most dedicated or most improved public outreach impact as a participant or coordinator.

### **The Richard D. Schwartz Supportive Faculty Award**

Richard Dean Schwartz, PhD (1941-2011), was professor of astronomy at University of Missouri- St Louis from 1975 to 2003. When Dick arrived at the University of Missouri-St. Louis in 1975, he was the only astronomer in the Department of Physics. He built the astronomy program and initiated the B.S. in physics with an astrophysics option. Dick compiled a distinguished record of research that gave him an international reputation as an astrophysicist. During his career, Dick pioneered a new research area studying the energetic mass loss in young stars, there have been over 2000

*(Continued on page 5)*



citations to his 80 scientific papers. In 1999 he received the Chancellor's Award for Research and Creativity for his distinguished research record. Dick became a member of SLAS shortly after coming to St Louis and would present his research at SLAS meetings. In the spirit of Richard D. Schwartz, the Supportive Faculty Award should be given to local educator at HS or college level who support SLAS' mission by providing astronomy-related talks to SLAS or the St Louis area. Nominee does not have to be SLAS member.

### **The Robert E. Cox Popular Astronomy Award**

Robert Edward Cox (1917-1989) moved to St Louis in 1960 to work for e [McDonnell Aircraft Co.](#). His optical shop produced prototypes in connection with flight testing of [Voodoo](#) and [Phantom](#) fighter planes, as well as for the [Mercury](#) and [Gemini](#) spacecraft. Optics from his shop flew on all American manned space missions up through [Gemini 8](#). Cox retired from McDonnell-Douglas in 1982. Bob was Sky and Telescope's "Gleanings for ATMs" column editor from 1956 to 1977. Bob received the Astronomical League Award in 1962 and the Clifford Holmes Award in 1980. Bob was a member of SLAS from 1960 until his death in 1989. Bob was an early supporter for the building of the McDonnell Planetarium and taught numerous classes at the planetarium

after it opened. Through his talks and articles Bob help popularize astronomy and telescope making locally, nationally and internationally. In the spirit of Robert E Cox, the Popular Astronomy Award should be given to an amateur who publishes or produces work recognized at a regional or national level or having major contribution to popularizing astronomy at the regional or national level. Nominee does not have to be SLAS member.

### **The Alfred L. Woods Mentoring Award**

Alfred Lee Woods (1911-2004) was a member of SLAS since the mid-1960's and was elected to a term as a board member at large to the board of directors. Al was the 1993 Amateur of the Year for the Mid-States region of the Astronomical league. Al was a gifted telescope maker and optical fabricator. Al could grind and polish mirrors and lenses to ultimate precision. Al fabricated a number of very difficult telescope designs including 2 and 3-mirror Schiefspiegler telescopes. Al mentored amateur telescope makers across the globe. Al educated his follow amateurs at the annual SLAS Homemade Fest. Al's design were featured on Amateur Telescope Making magazine and other publications. In the spirit of Alfred L Woods, the SLAS Mentoring Award should be given to a SLAS member for mentor-ship in astronomy, telescope and gadget making to their fellow amateurs.

### **MSRAL Conference is June 12-14! by Peggy Walker, Chair MSRAL**

Registration for MSRAL 2020 scheduled for June 12th-14th in Jenks, Oklahoma is officially live! <https://msral2020.wixsite.com/register4msral2020>

You will notice speakers are still being confirmed which also means an actual program schedule is still in progress. However, the keynote speaker is the only one listed.

A new opportunity is that there will be a separate youth MSRAL conference that will be held at the same time. This conference is for high school students 9th to 12th grade and will be run by high school senior, Abby Bollenbach also AL's 2018 Horkheimer Smith Award winner. The goal is to be inclusive for accessible students since the building is accessible, but the program is being designed to offer an astronomical experience for blind/legally blind as well as deaf/hearing impaired students.

So far, the program under consideration is the construction of an origami buckey ball, observing, solar observing and student talks. Nothing is set in stone and is still being finalized. So, if you have a 9th-12th grader, please encourage them to come since nice giveaways have been gathered just for the youth.

To book a hotel room at our special rate of \$79.00 at The Crowne Plaza, go to the "Venue" tab and scroll to the picture of The Crowne Plaza and click on the yellow booking button. That will take you directly to The Crowne Plaza where you are able to select a king, or a double room at our special rate. *Editor's note: I would recommend calling the hotel to book the room at the discounted rate.*

To register, please go to the "Registration by PayPal" tab.

Each transaction will require a name and club affiliation because not everyone will purchase all the meals. The shopping cart will take you to PayPal where the transaction will be completed. If you have dietary concerns or have questions, please go to the bottom of the "Home Page" to the "Contact Us" form. However, if you are sending in your registration by mail, please add any comments on dietary issues or concerns on the registration form located in the "Printable" tab. My personal address is at the bottom.

There are printable maps in the "Printable" tab as well as maps of restaurants near the conference site and The Crowne Plaza. There are \$10.00 breakfast vouchers free upon request at the front desk but there are many breakfast places nearby if you so desire.

We look forward to seeing you in June and we are confident that you will have a great time here in Oklahoma.

Sincerely,  
Peggy Walker  
MSRAL 2020 Conference  
Chair



**Teacher Package:  
\$350.00 – Riker Box + 30  
student  
\$250.00 - Riker Box + 20  
student  
\$10 Donation - One stu-**



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

**1. Opening Activities** Attendees: Jim Small, Tom Nickelson, Larry Campbell, Brad Waller, Brent Buch, John Newcomer, Mark Jones  
Minutes of previous meeting, distributed before the meeting. Motion made by Tom to approve the minutes, motion seconded by John. Minutes were approved.

**2. External Business:** SLSC: First Friday. Weather forecast bad, so probably will be an indoor event, with one table. Try to arrive by 6:30pm, to get a parking spot. Solar Saturdays and First Fridays are on NSN calendar First Friday is Jan 1<sup>st</sup> next year. Jefferson College next event is this Sunday. **Next board meeting:** Meetings posted on NSN calendar. Board meetings will be held at Nicoletti's Restaurant in Valley Park until further notice. Dates for 2020: Feb 6, Mar 5, Apr 2, May 7, Jun 4, Jul 2, Aug 6, Sep 3, Oct 1, Nov 5, Dec 3

### 3. Director Reports:

**President: Jim Small:** No additional report

**Vice President: Bradley R Waller**

#### Presentations 2020

Month	Name	Topic	Sponsor
17-Jan-2020	Ryan Clegg-Watkins, PhD	Exploring the Moon from Orbit: Paving the Way for Future Astronaut Explorers	Washington University
21-Feb-2020	K Michael Malolepszy	Probing the Sub-Microwave Universe Part II	SLAS
20-Mar-2020	Joseph N Marcus, MD	Carl Lampland, Pioneer Infrared Astronomer	SLAS
17-Apr-2020	Raymond E Arvidson, PhD	What Controls Planetary Climates	Washington University
15-May-2020	William McKinnon, PhD	Something about Ultima Thule of Course!	Washington University
19-Jun-2020	Vayujeet Gokhale, PhD	The Science of Light Pollution	Truman State University
17-Jul-2020	Amy E Kimball, PhD	Radio Quasars & the VLA	NRAO (Zoom Event)
21-Aug-2020	Jeffrey Gillis-Davis, PhD	Apollo XIII Plus 50 Years	Washington University
16-Oct-2020	Marco Cavaglia, PhD	Gravitational Waves Part II	University of Missouri: Science & Technology
20-Nov-2020	Brett McGuire, PhD	Mirror Asymmetry in Life and in Space	NRAO-WVA (Zoom Event)
18-Dec-2020	Maura McLaughlin, PhD	Still thinking about a Topic :)	UWVA (Zoom Event)

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

101 -Mark Jones Astro events for 2020 A101 for Feb will be Carl Mathsay Brad wants a SLAS web page for Francis Park so John N can create a QR code. Jim will create

**Secretary: Mark Jones** Mark proposed adding the 2020 goals for new programs and expenditures so they can be statuses each month. Mark will provide draft of meeting agenda

**Treasurer/ALCor: Bill Winningham** No report

**Hospitality: Larry Campbell** Anniversary recognition awards will be ready for Jan.

**Membership recognition:** Jim to purchase NSN pins for Volunteer awards. Count 22 with 5 or more, 4 with 4 events

#### Board member at large reports

**John Newcomer (2022):** Waiting for the URL for Francis Park Budget for new signs using for sale sign type

### 4. Committee Reports:

**Library Telescope Program:** Don has scheduled 2 maintenances days in 2020 on NSN calendar

**Membership:** Attached is the SLAS membership report. We ended the year with 182 members which is three members above last year's count of 179 members. Notably, our youth membership dropped from eight members to one member and our family membership increased from 50 members to 58 members. Please review the past due membership list. We have several longtime members showing as past due (including one board member).

**Merchandise:** 6 Infini-tees shirts sold at December meeting for total of \$52

**Telescope Making:** No report

**Librarian:** purchased Celestial Sphere (\$148.90) and updated Moon Globe (\$107.45). Purchased three Great Courses (\$118.88): Black Holes, Tides, and Curved Space Time, What Einstein Got Wrong, and Dark Matter, Dark Energy

**Newsletter:** Please forward articles to [newsletter@slasonline.org](mailto:newsletter@slasonline.org) 3 Printer cartridges (\$246.78) and a roll of 100 forever stamps (\$56.80) purchased

**Website:**

**Social Networking:** Twitter has 94 followers. Public FaceBook has 478 followers

**Night Sky Network:**

**SLASdialogs:** Transfer to groups.io completed. One year membership in place

**Dark Site:** no report

**Publicity:** Need press release for January

**Observing Programs:**

**Star Parties:** Based on the volunteer hours logged in Night Sky Network, 50 members contributed a total of 1475.5 hours in 2019

### 5. Old Business: None

**6. New Business:** 1. I asked the Board members to think about Volunteer Training Program, we need to start a committee

2. Star Party request policy tabled until next month.: Options: Service only to preferred patrons, which SLAS has beneficial partnerships. Service only the events with larger number of visitors, therefore biggest impact to community. Don't limit by size of group name but don't allow scheduling of more than 2 events on same date. Set Blackout dates on calendar to allow more "free time" for members to enjoy their own hobby. Remove "Request a Star Party" from our public website. This will reduce "over advertising" our ability to staff such events. Do not booking events on same night as SLAS social events, outreach events or SLAS meetings. Do not double-booking events for the same night. Do not book more than 3 events in a given week. Do not book events on Dark Moon Saturday nights

**7. Closing Activities** Motion by Brad to adjourn, second by Larry. Meeting adjourn at 9:16pm

**St. Louis Astronomical Society  
Profit & Loss Budget vs. Actual  
January 2020**

**St. Louis Astronomical Society  
Balance Sheet**

As of January 31, 2020

	Jan 20	Budget	\$ Over Bud...
<b>Ordinary Income/Expense</b>			
<b>Income</b>			
Magazine Subscription			
Astronomy Magazine Sales	102.00	87.85	14.15
Sky & Telescope Sales	164.75	131.80	32.95
<b>Total Magazine Subscription</b>	<b>266.75</b>	<b>219.65</b>	<b>47.10</b>
Membership Dues	485.00	505.00	(20.00)
<b>Total Income</b>	<b>751.75</b>	<b>724.65</b>	<b>27.10</b>
<b>Cost of Goods Sold</b>			
Magazine Subscriptions			
Astronomy Magazine Cost	102.00	87.55	14.45
Sky & Telescope Cost	164.75	131.80	32.95
<b>Total Magazine Subscriptions</b>	<b>266.75</b>	<b>219.35</b>	<b>47.40</b>
<b>Total COGS</b>	<b>266.75</b>	<b>219.35</b>	<b>47.40</b>
<b>Gross Profit</b>	<b>485.00</b>	<b>505.30</b>	<b>(20.30)</b>
<b>Expense</b>			
<b>1-Programs &amp; Events</b>			
Astronomy Day/Outreach		250.00	(250.00)
Library Telescope Program		54.00	(54.00)
<b>Meeting Expenses</b>			
Meeting Refreshments		30.00	(30.00)
Meeting Speaker Fees		42.00	(42.00)
<b>Total Meeting Expenses</b>		<b>72.00</b>	<b>(72.00)</b>
Membership Initiatives		33.00	(33.00)
Membership Recognition		300.00	(300.00)
<b>Total 1-Programs &amp; Events</b>		<b>709.00</b>	<b>(709.00)</b>
<b>2-Newsletter</b>			
Newsletter Postage		15.00	(15.00)
Newsletter Printing		40.00	(40.00)
<b>Total 2-Newsletter</b>		<b>55.00</b>	<b>(55.00)</b>
<b>3-Library expense</b>		41.66	(41.66)
<b>5-Loaner Scopes</b>		8.00	(8.00)
<b>6-Brochures</b>		50.00	(50.00)
<b>8-Website</b>		30.00	(30.00)
<b>9-Administrative Expenses</b>			
Office Supplies		8.00	(8.00)
Paypal Fees	13.89	4.00	9.89
Postage	33.00	8.00	25.00
<b>Total 9-Administrative Expen...</b>	<b>46.89</b>	<b>20.00</b>	<b>26.89</b>
<b>Total Expense</b>	<b>46.89</b>	<b>913.66</b>	<b>(866.77)</b>
<b>Net Ordinary Income</b>	<b>438.11</b>	<b>(408.36)</b>	<b>846.47</b>
<b>Other Income/Expense</b>			
<b>Other Income</b>			
Donations			
SLAS Club Members	2.05		2.05
<b>Total Donations</b>	<b>2.05</b>		<b>2.05</b>
Interest Income	28.99	16.00	12.99
LTP Receipts	7.95		7.95
<b>Total Other Income</b>	<b>38.99</b>	<b>16.00</b>	<b>22.99</b>
<b>Net Other Income</b>	<b>38.99</b>	<b>16.00</b>	<b>22.99</b>
<b>Net Income</b>	<b>477.10</b>	<b>(392.36)</b>	<b>869.46</b>

	Dec 31, 19	Jan 31, 20
<b>ASSETS</b>		
<b>Current Assets</b>		
<b>Checking/Savings</b>		
Checking - First Bank	7,187.45	6,995.65
Deposit, Certificate of	15,841.67	15,864.39
Library Telescope Escrow	1,053.86	1,061.81
PayPal	77.94	485.90
Savings - First Bank	41,122.69	41,128.96
YMCA Trout Lodge Escr...	14.21	14.21
<b>Total Checking/Savings</b>	<b>65,297.82</b>	<b>65,550.92</b>
<b>Other Current Assets</b>		
Inventory Asset	761.53	761.53
Undeposited Funds	20.00	20.00
<b>Total Other Current Assets</b>	<b>781.53</b>	<b>781.53</b>
<b>Total Current Assets</b>	<b>66,079.35</b>	<b>66,332.45</b>
<b>Fixed Assets</b>	15,000.00	15,224.00
<b>TOTAL ASSETS</b>	<b>81,079.35</b>	<b>81,556.45</b>
<b>LIABILITIES &amp; EQUITY</b>		
<b>Equity</b>		
Opening Bal Equity	8,497.66	8,497.66
Retained Earnings	69,757.14	72,581.69
Net Income	2,824.55	477.10
<b>Total Equity</b>	<b>81,079.35</b>	<b>81,556.45</b>
<b>TOTAL LIABILITIES &amp; EQUITY</b>	<b>81,079.35</b>	<b>81,556.45</b>

**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](mailto: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.

Mar 5, Apr 2, May 7, June 4, July 2, Aug 7, Sept 3, Oct 1, Nov 5, Dec 3

### Dark Sky Observing Dates

Feb 22, Mar 21

**Francis Park Events:** These events are on Wednesdays of the week nearest the first quarter Moon

Apr 1, Apr 29, May 27, Jun 24, July 29, Aug 26, Sept 23, Oct 21

**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 Mar 6, Apr 3, May 1, Jun 5, July 3, Aug 7, Sept 4, Oct 2, Nov 6, Dec 4

### Pattonville Observatory Public Viewing Dates

Feb 28, Mar 6, Mar 13, Apr 3, Apr 23, May 8, May 14

### Broemmelsiek Astronomy Park Public Viewing

Every Friday night with ASEM members

### UMSL Observatory

For directions and map

<http://www.umsi.edu/~physics/About%20the%20Department/astro.html>

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

Skywatch Hotline: 314-516-5706

Saturdays:

## SLAS EVENTS

### February

21 Fri SLAS Regular Meeting  
22 Sat Solar Saturday  
22 Sat Homemade Fest  
22 Sat SLAS Dark Sky Observing  
26 Wed Parkway North Star Gazing  
27 Thur STEAM FEST 2020  
27 Thur Florissant Valley Library  
29 Sat Library Telescope Maintenance

### March

4 Wed St Louis Public Library  
5 Thur SLAS Board Meeting  
6 Fri Parkway School STEM Fest  
6 Fri SLSC Public Telescope Viewing  
7 Sat Parkway School District  
8 Sun Jefferson College Observatory  
9 Mon Rock Hill Library  
15 Sun SLAS Sky Orienteering  
20 Fri Carondelet Leadership  
20 Fri SLAS Regular Meeting  
21 Sat Solar Saturday  
21 Sat SLAS Dark Sky Observing  
24 Tue Oak Bend Library  
25 Wed Bridgeton Trails Library  
26 Thur Samuel Sachs Library  
30 Mon Grants View Library  
31 Tue Grand Glaize Library  
31 Tue STLCO HQ Library

### April

1 Wed Francis Park Stargazing  
2 Thur Armstrong Elementary  
2 Thur SLAS Board Meeting  
3 Fri SLSC Public Telescope Viewing  
5 Sun Jefferson College Observatory  
9 Thur Premier Charter School  
17 Fri Twin Chimneys Elementary  
17 Fri SLAS Regular Meeting  
18 Sat Solar Saturday  
18 Sat SLAS Dark Sky Observing  
19 Sun SLAS Sky Orienteering  
22 Wed Wild Horse Elementary  
27 Mon Natural Bridge Library  
28 Tue Lewis and Clark Library  
29 Wed Francis Park Stargazing

### 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 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

<b>President</b>	<b>Jim Small</b>	314-307-0692
president at slasonline.org		
<b>Vice President</b>	<b>Bradley R Waller</b>	314-481-7250
vicepresident at slasonline.org		
<b>Secretary</b>	<b>Mark Jones</b>	636-394-2342
secretary at slasonline.org		
<b>Treasurer</b>	<b>Bill Winningham, (Don Ficken - membership)</b>	636-357-2763
treasurer at slasonline.org		
<b>Hospitality</b>	<b>Larry Campbell</b>	636-244-2867
hospitality at slasonline.org		
<b>Board Members at Large:</b>		
	<b>Tom Nickelson</b>	314-346-9565
board20 at slasonline.org		
	<b>Brent Buch</b>	314-239-0329
board21 at slasonline.org		
	<b>John Newcomer</b>	314-496-4636
board22 at slasonline.org		
<b>ALCOR</b>	<b>Bill Winningham</b>	636-357-2763
(Astronomical League Correspondent ) treasurer at slasonline.org		
<b>MSRAL Rep.</b>	<b>Jim Small</b>	314-909-7211
msral_rep at astroleague.org		

## COMMITTEE CHAIRS

<b>Dark Site Coordinator</b>	<b>Mark Jones</b>	636-394-2342
darksite at slasonline.org		
<b>Librarian</b>	<b>Jim Small</b>	314-909-7211
librarian at slasonline.org		
<b>Library Telescope Program</b>	<b>Don Ficken</b>	636-851-9630
librarytelescope at slasonline.org		
<b>Loaner Equipment</b>	<b>Greg Gaines</b>	314-277-3082
loaner at slasonline.org		
<b>Merchandise</b>	<b>Vacant</b>	
merchandise at slasonline.org		
<b>Membership</b>	<b>Don Ficken</b>	636-225-0269
membership at slasonline.org		
<b>Newsletter Editor</b>	<b>Jim Small</b>	314-909-7211
newsletter at slasonline.org		
<b>Observing Programs</b>	<b>Mark Jones</b>	636-394-2342
observing at slasonline.org		
<b>Publicity</b>	<b>Rich Heuermann</b>	314-962-9231
publicity at slasonline.org		
<b>Recognition</b>	<b>Larry Campbell</b>	636-244-2867
recognition at slasonline.org		
<b>Social Media</b>	<b>Vacant</b>	
'SLASdialogs' Moderator <b>Mark Jones, Rhonda Whelan</b>		
dialogsmoderator at yahoo.com		
<b>Star Party Coordinator</b>	<b>Bill Breden</b>	314-276-3613
starparty at slasonline.org		
<b>Telescope Making</b>	<b>Bill Davis, Jim Melka</b>	314-469-3061
telescope at slasonline.org		
<b>Webmaster</b>	<b>Jim Small</b>	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>

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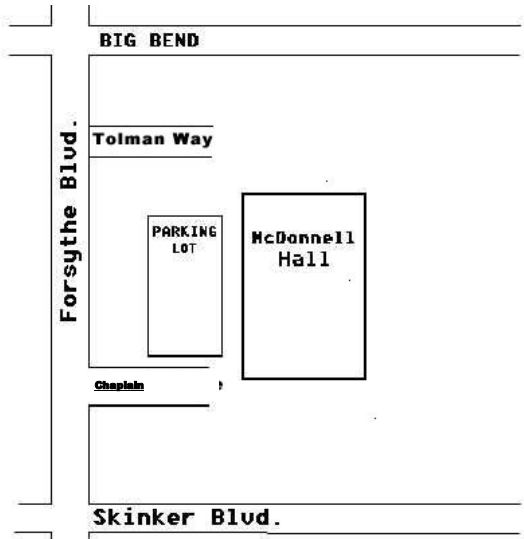


**Who We Are and What We Do**

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 anyone 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

