THE EVENT HORIZON

ST. LOUIS ASTRONOMICAL SOCIETY

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The Formation of Solar-type Stars and Planetary Systems: a Journey Toward Understanding Our Origins

by

Claire Chandler, PhD
National Radio Astronomy Observatory

During the past three decades, telescopes have revealed more than 4,000 planets orbiting other stars. A few of these are roughly Earth sized; some are giant planets like Jupiter; and most are an intermediate size, the "Super-Earths". Dr. Chandler will talk about how stars like the Sun form, as well as the different ways in which their planets can form.

Dr. Claire Chandler is currently the Deputy Assistant Director for New Mexico Operations at NRAO, overseeing the operation of both the iconic Very Large Array (VLA) radio telescopes featured in the move "Contact", and the Very Long Baseline Array (VLBA), which is used to make some of the most detailed images of very distant radio sources. Using radio telescopes around the world, she also investigates how stars and planets form

Dr Claire Chandler graduated with a degree in Physics with Astrophysics from the University of Birmingham, and went on to do a PhD in Astronomy at the University of Edinburgh. From there she undertook postdoctoral positions at the California Institute of Technology, the National Radio Astronomy Observatory (NRAO), and the University of Cambridge, before joining the NRAO scientific staff in 2000. She is currently the Deputy Assistant Director for New Mexico Operations at NRAO, overseeing the operation of both the iconic Very Large Array (VLA) that was featured in the move "Contact", and the Very Long Baseline Array (VLBA), which is used to make some of the highest resolution images of cosmological radio sources. Besides being an expert in observatory operations she also investigates how stars and planets form, using radio telescopes around the world.

Upcoming Presentations for 2019

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

Upcoming Presentations for 2020

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

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

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

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

May William McKinnon, PhDSomething 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

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Did you see/hear the Fireball??
See inside for more!

Fireball !!!!

I missed it. I think I might have heard something but it wasn't clear to me. I first got notice when a couple of my astronomy students who saw and heard it sent me a text wondering what the heck it was! KMOV called me later to ask questions about it, so I had them meet me at the Jefferson College Observatory for a little extra publicity. They used 10 seconds of a 15 minute interview! There were many reports and videos because of all the Nest Ring doorbell cams people have installed. More than 233 reports were filed so good quality map of the path was able to be formed.

Mark Jones did some research and came up with some definitive information about the event. According to the following site https://fireballs.ndc.nasa.gov/ **Fireball over Missouri just before 9 PM last night**
At 8:51:45 PM last evening (2019 November 12 2:51:45 UTC), hundreds of eyewitnesses located in Missouri, Illinois, Iowa, Kansas, Nebraska, Oklahoma, Wisconsin, South Dakota, and Minnesota reported seeing a very bright fireball. An analysis of their accounts, along with data from an EarthCam camera in St. Louis and from a camera located at Missouri Skies (near Albany, Missouri), has established that this fireball first became visible at an altitude of 59 miles above the town of Cedar Hill, just to the southwest of St. Louis. The meteor moved to the northwest at 33,500 miles per hour, traveling some 70 miles through Earth's atmosphere before ablating 12 miles above the town of Bridgeport, northeast of Hermann. The orbit and brightness of this fireball indicate that it was caused by a fragment of an asteroid about 16 inches in diameter (basketball size), weighing over 200 pounds. Based on the information currently available, it is possible that this event produced meteorites north of Bridgepoint/McKittrick.

It was not a member of the Taurid meteor shower, as some have reported.
The fireball was also detected by the Geostationary Lightning Mapper (GLM) onboard the GOES 16 weather satellite, which supports the eyewitnesses reports of the fireball being brighter than the Full Moon.
Here are the ground track, GLM image, and GLM/camera trajectory comparison. More details at **https://fireballs.ndc.nasa.gov/skyfalls/events/20191112-025148**

Other sources of info at:
American Meteor Society **https://www.amsmeteors.org/**

International Meteor Organization **https://www.imo.net/**

November 2019 Membership Recognition Recipients

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

Five Year Certificates and Pins -

David Ebers
Nicholas Kirschman
Roy Lieberman
Rosanne Naunheim
Chris Nobbe
Major Michael Floyd Thompson

Ten Year Certificates and Pins -
Bruce Boston
Diana Boston
Brent Buch
Larry Campbell
Alan Sapia
Afred Schonvanez

Fifteen Year Certificates and Pins -
Daniel Corso
John Duchek
Thomas Schloemann
Ann Trull
Jim Trull
Jim Twellman

Twenty Year Certificates and Pins -
Rodney Rynearson
John Sullivan

Twenty Five Year Certificate and Pin -
Paul Baldwin

Thirty Year Certificate and Pin -
Allan Stewart

Forty Five Year Certificates -
Rich Heuermann
Mark Jones

Assumption Summary – 2020

St. Louis Astronomical Society Annual Budget

Work began on the 2020 budget after the financial close for August 2019. The year to date information is therefore through August 31, 2019 with an estimated projection of activity from September 1, 2019 through December 31, 2020.
The budget information was assembled partially based on assumptions developed from the August 2019 year to date actual in areas such as membership information available at that time. The balances of the budgetary items were prepared on a line by line basis by the individual committees and committee chairpersons.

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Revenue / Income:
The primary source of Revenue for the Society stems from membership fees that are assessed on an annual basis that is based on the member's individual anniversary date. The current fee structure was adopted in 2004 where the "Family Membership" was created and set at an annual rate of $40.00 per year. At the same time, the fees for the Youth membership were decreased from $15.00 to $10.00 per year.

The total revenue from the membership fees for 2020 is based on:

Regular (Adult) Memberships		123	@
$25.00/year	$3,075		
Youth Memberships		3	@
$10.00/year	30		
Family Memberships		29@	
$40.00/year	1,160		

Albeit that the Society does receive donations for the outreach activities, these donations have been ignored for the purpose of the 2020 budget due to the uncertainty, with the exception of donations for plan St. Louis County Library (SLCL) events for which we have a written agreement. The SLCL donates $45 per event with 36 events planned for 2020, totaling $1,620.

As indicated in the budget, this will provide operating revenues in the total of $5,885 for 2020. The actual revenues that will be realized during the calendar year may be different due to any changes in the actual membership numbers.

Magazine subscriptions are referenced as a memo item. The Society acts solely as an agent in these transactions as a convenience to the membership. It should be noted that the same "Club" rates for the subscriptions are available to each member in good standing through the Night Sky Network for those who choose that option.

Operating Expenses:
These are expenses that are incurred to run the Society on a month to month basis to provide goods and services to the membership. Some of the expense categories are required to meet specific obligations that enable Society to function as an organization. The balance of the expense categories are considered discretionary and may be adjusted accordingly. The items that will be discussed in detail are the discretionary items.

Newsletter Expense:
The newsletter expense consists of $325 for paper, toner and other supplies, and $175 for postage.

Events
The Homemade Fest budget remains $100. This budget is primarily used to purchase refreshments, plates, plastic ware and door prizes. SLAS hopes to continue getting the meeting room free of charge from the Science Center or the Kirkwood Community Center. Kirkwood waived the fee in 2019 because of our hosting telescope viewing at Kirkwood Park at least twice a year.

The Star-B-Que remains at $200. This event will again be member pot luck with SLAS providing the meat, paper goods, and trivia quiz prizes. SLAS hopes to continue getting the picnic pavilion free of charge. This is normally an $80 charge, but Babler has waived the fee because of our hosting Night Skies Over Babler twice a year.

The members in attendance will be asked to provide items as with the Homemade Fest to complement the main course provided by SLAS. This will require that the membership provide their RSVP and number of attendees so the event can be planned accordingly.

Library Telescope Program:
The SLAS Library Telescope program's was launched into the St. Louis area on November 2014. In just a few short years, the program has grown to one of the largest and most successful programs in the country. On all fronts, the library telescope program is demonstrating success.

The LTP Committee's focus for the upcoming year will be on the following four areas:

$200 – maintenance budget to cover all the little things that we need to keep the telescopes in top shape (the big things we charge to the libraries)

$250 to reimburse mileage for SLAS Members who travel to multiple library locations to perform maintenance or repair on the library telescopes. The rate will be the current IRS rate for charitable contributions ($.14) (IRS.gov). The SLAS member requesting reimbursement should provide a spreadsheet log documenting their travels. This should include: dates, mileage, and locations visited. Reimbursement requests should be made quarterly.

$200 – funding for replenishing promotional material/ handouts such as business cards

The Library Telescope Committee requests $650 in operating expenses to cover items 1-3 above.

Meeting Expense:
Meeting expense is comprised of Meeting Refreshments and Meeting Speaker Fees. The meeting refreshments are self-explanatory and have been budgeted at $360, $10 increase over the 2019 budget level. The Meeting Speaker Fees are used primarily to present honorariums to guest speakers and occasionally to partially offset travel expenses. The speaker budget has ranged between $250 and $600 in recent years. The 2020 speaker budget will be $500,

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which includes expected travel expenses for 1 to 2 speakers and a stipend for 1 to 2 graduate student speaker.

Membership Initiatives:
SLAS regularly holds "Welcome Aboard" meetings for new SLAS members. These meetings take place before the Monthly Meeting. New SLAS Members are given a SLAS Informational Folder containing information about SLAS resources and other related Astronomy topics.

The budget for Membership Initiatives remains at $400. Membership Initiatives, as in recent years, plans to hold raffle events during 2019 as opportunities arise. Past raffles involve tickets to special speaker events such as when Neil deGrasse Tyson and Jim Lovell came to the area. Membership Initiative also intends to continue the practice of awarding attendance and other prizes to the membership. Examples of some of possible prizes for 2020 include sponsoring a membership to McDonald Observatory, telescope eyepieces, and cell phone adapters for telescopes. Please feel free to suggest your ideas for membership prizes to Brad Waller at vicepresident@slasonline.org.

Membership Recognition:
The membership recognition budget for 2020 is $900. This will include $100 for Night Sky Network pins and certificates. The remaining $800 will be budgeted for recognition of members for continuous membership in SLAS and for contributing time for other SLAS functions, including a new award program. Five new awards will be available beginning in 2020. The above budget includes $600 to fund the start-up cost of the new awards. A membership recognition committee was formed and an email address, recognition@slasonline.org was set up so that recommendations can be submitted to the committee.

Library:
Library expenses for 2020 includes approximately $300 for the purchase of a celestial sphere, $100 for the purchase of a Great Courses DVD series, and $100 for the purchase of books.

Loaner Scope Program:
For 2020 the budget is $100 which is intended to cover miscellaneous repair cost. The loaner scopes are in the process of being relocated to a more accessible location.

Outreach:
The outreach budget for 2020 is $1,100. The budget is intended for the purchase of shirts for members who complete outreach training and participate in outreach events, handed out quarterly. The budget also includes funds for the purchase of 2 or more lawn signs (similar to political or real-estate signs). Additional details of the training program will be announced as the new year approaches.

SLAS Brochures:
The brochure expense consists of $275 for paper and toner and $325 is anticipated for another order of 4,000 "Quarter Card" handouts.

Summary:
The Board and participating committee members have increased several budget items in an effort to increase our ability to engage current members, provide continue support the highly successful Library Telescope Program, and to better support SLAS's outreach efforts. The budget for Library Telescope maintenance budget was increased to reflect the ongoing needs of the now mature program. The SLAS Library budget includes additional funds for the purchase of celestial sphere(s) which is intended to complement SLAS's solar system globes which have proven to be popular attractions at daytime and indoor STEM related outreach events. An Outreach budget includes funds to establish new outreach training programs, including shirts to be awarded to members who complete a training program and associated outreach requirements. The net result is 2020 budget as presented equals a net loss from operations of $2,756, compared a budgeted net loss of $2,655 for the 2019 and a budgeted net loss of $2,600 for the 2018. Meeting the projected expenses for the upcoming year will require supplementing the operations from cash reserves to the extent donations and other revenue sources do not make up the shortfall. Please note that the above budget summary does not include the remaining $1,000 of special budget approved by the membership that is reserved for moving and setup expenses for the Jefferson College observatory, nor does it include the expected depreciation expense associated with the observatory. All attempts have been made during this process to continue to provide valued programs for the membership.

If you have questions about the amounts presented in this budget, please direct them either to me or the relevant committee chairs.

Respectfully,
Bill Winningham, Treasurer

ST. LOUIS ASTRONOMICAL SOCIETY
PRELIMINARY OPERATING BUDGET - 2020

	Actual	Budget	Projection		Budget					
	Year to Date	Year to Date	Sept-19 to	Year to date	Annual	Annual	Annual	Annual	Annual	Annual
	Aug-19	Aug-19	Dec-19	Dec-19	2015	2016	2017	2018	2019	2020
Income										
Magazine Subscription										
Total Magazine Subscription	$ 1,128.55	$ 1,231.40	$ 377.40	$ 2,061.38	$ 2,034.10	$ 1,734.40	$ 952.50	$ 1,338.90	$ 1,338.90	$ 1,338.90
Membership Dues	$ 3,205.00	$ 3,030.00	$ 1,140.00	$ 4,345.00	$ 3,440.00	$ 3,725.00	$ 3,600.00	$ 3,970.00	$ 4,170.00	$ 4,265.00
St. Louis County Library Events										$ 1,620.00
Merchandise Sales		-	-		-	-	-	-	-	
Total Income	$ 4,333.55	$ 4,261.40	$ 1,517.40	$ 6,406.38	$ 5,474.10	$ 5,459.40	$ 4,552.50	$ 5,308.90	$ 5,508.90	$ 7,223.90
Cost of Goods Sold										
Total Magazine Subscriptions	$ 1,103.40	$ 1,231.40	$ 377.40	$ 1,480.80	$ 2,034.10	$ 1,734.40	$ 952.50	$ 1,338.90	$ 1,338.90	$ 1,338.90
Merchandise	-	100.00								
Total Cost of Goods Sold	$ 1,103.40	$ 1,331.40	$ 377.40	$ 1,480.80	$ 2,034.10	$ 1,734.40	$ 952.50	$ 1,338.90	$ 1,338.90	$ 1,338.90
Gross Profit	$ 3,230.15	$ 2,930.00	$ 1,140.00	$ 4,925.58	$ 3,440.00	$ 3,725.00	$ 3,600.00	$ 3,970.00	$ 4,170.00	$ 5,885.00
Operating Expense										
Programs & Events										
Home Made Fest	97.00	100.00	-	97.00	100.00	100.00	100.00	100.00	100.00	100.00
Star BBQ Expense	-	-	200.00	200.00	175.00	175.00	175.00	200.00	200.00	200.00
Library Scope Program Expense	73.69	340.00	-	73.69	600.00	*200.00*	*200.00*	*200.00*	450.00	650.00
Outreach	80.00	650.00	-				*547.90*		650.00	1,100.00
Eclipse Workshop Dues	-	-	-	-	200.00	*200.00*				
2017 Eclipse Committee	-				200.00	-	-	-	-	
Meeting Expenses										
Meeting Refreshments	148.49	233.00	100.00	248.49	450.00	350.00	350.00	350.00	350.00	360.00
Meeting Speaker Fees	313.21	340.00	-	313.21	250.00	250.00	800.00	600.00	500.00	500.00
Total Meeting Expenses	$ 461.70	$ 573.00	$ 100.00	$ 561.70	$ 700.00	$ 600.00	$ 950.00	$ 950.00	$ 850.00	$ 860.00
Membership Initiatives	$ 195.09	$ 266.66	204.91	$ 400.00	$ 200.00	$ 200.00	$ 200.00	$ 200.00	$ 400.00	$ 400.00
Merchandise				-	$ 120.00	45.00	45.00	45.00	100.00	-
Membership Recognition	49.33	200.00	250.67	300.00	200.00	260.00	300.00	300.00	300.00	900.00
Programs & Events	$ 956.81	$ 2,129.66	$ 755.58	$ 1,632.39	$ 2,495.00	$ 1,780.00	$ 2,270.00	$ 1,995.00	$ 3,050.00	$ 4,210.00
Newsletter (Postage only pre 2019)	$ 115.50	$ 120.00	$ 100.00	$ 215.50	$ 180.00	$ 200.00	$ 175.00	$ 175.00	$ 500.00	$ 600.00
Newsletter Printing	$ 33.12	$ 217.00	$ 200.00							
Total Newsletter	$ 148.62	$ 337.00	$ 300.00	$ 215.50	$ 180.00	$ 200.00	$ 175.00	$ 175.00	$ 500.00	$ 600.00
Library expense	$ 80.00	$ 352.50	$ 350.00	$ 430.00	$ 300.00	$ 100.00	$ 300.00	$ 300.00	$ 470.00	$ 500.00
Astronomical League Dues	-	825.00	860.00	860.00	650.00	695.00	670.00	760.00	825.00	860.00
Dark Sky Association										
Loaner Scopes	79.94	66.00	-	79.94	200.00	50.00	50.00	600.00	100.00	100.00
Insurance	825.50	825.00	224.00	1,049.50	380.00	380.00	380.00	825.00	825.00	1,050.00
Website	279.35	285.00	-	279.35	135.00	150.00	170.00	170.00	285.00	625.00

ST. LOUIS ASTRONOMICAL SOCIETY
PRELIMINARY OPERATING BUDGET - 2020

	Actual	Budget	Projection		Budget					
	Year to Date	Year to Date	Sept-19 to	Year to date	Annual	Annual	Annual	Annual	Annual	Annual
	Aug-19	Aug-19	Dec-19	Dec-19	2015	2016	2017	2018	2019	2020
Administrative Expenses										
Corporate Filings	-	-	-	-	-	20.00	-	20.00	-	20.50
Office Supplies	-	75.00	25.00	25.00	165.00	165.00	100.00	100.00	100.00	100.00
Banking Fees	15.50	30.00	-	15.50			25.00	25.00	30.00	30.00
PayPal Fees	31.09	26.66	15.00	46.09	40.00	40.00	40.00	40.00	40.00	45.00
Postage	77.00	60.00	50.00	127.00	75.00	90.00	90.00	90.00	90.00	100.00
Printing / Copying Expense (combined 2015)	-	-		-	888.00	1,115.00	1,370.00	1,370.00	-	
Brochures			322.00	322.00					610.00	600.00
Administrative Expenses	$ 123.59	$ 191.66	$ 412.00	$ 535.59	$ 1,168.00	$ 1,430.00	$ 1,625.00	$ 1,645.00	$ 870.00	$ 895.50
Total Operating Expense	$ 2,493.81	$ 5,011.82	$ 2,901.58	$ 5,082.27	$ 5,508.00	$ 4,785.00	$ 5,640.00	$ 6,470.00	$ 6,925.00	$ 8,840.50
Net Income/(Loss) From Operations	**$ 736.34**	**$ (2,081.82)**	**$ (1,761.58)**	**$ (156.69)**	**$ (2,068.00)**	**$ (1,060.00)**	**$ (2,040.00)**	**$ (2,500.00)**	**$ (2,755.00)**	**$ (2,955.50)**
Other Income / Expense										
Other Income										
Donations										
SLAS Club Members	8.10			8.10	-	-	-	-	-	
Donations - Other	1,636.60			1,636.60	-	-	-	-	-	
Total Donations	$ 1,644.70		$ -	$ 1,644.70	$ -	$ -	$ -	$ -	$ -	$ -
Interest Income	$ 238.20	$ 67.00	$ 79.40	$ 317.60	$ 100.00	$ 100.00	$ 100.00	$ 100.00	$ 100.00	$ 200.00
Non-Operating Income (Astro Mag Award)				-	-	-	-	-	-	
Total Other Income	$ 1,882.90	$ 67.00	$ 79.40	$ 1,962.30	$ 100.00	$ 100.00	$ 100.00	$ 100.00	$ 100.00	$ 200.00
Other Expense										
Physical Inventory Adjustment	$ -			$ -	$ -	$ -	$ -	$ -	$ -	
Astro Mag Award Disbursements	-		$ -	-						
2017 Eclipse Escrow Funding						$ 800.00	$ 1,000.00	$ -	$ -	
LTP Escrow Funding	$ 500.00	$ 500.00				$ 1,000.00	1,000.00	500.00	500.00	-
Depreciation Expense (JC Scope and Dome)										3,200.00
Total Other Expense	$ 500.00	$ 500.00	$ -	$ -	$ -	$ 1,800.00	$ 2,000.00	$ 2,500.00	$ 500.00	$ 3,200.00
Net Other Income / (Expense)	$ 1,382.90	$ (433.00)	$ 79.40	$ 1,962.30	$ 100.00	$ (1,700.00)	$ (1,900.00)	$ (2,400.00)	$ (400.00)	$ (3,000.00)
Net Income / (Loss)**	**$ 2,119.24**	**$ (2,514.82)**	**$ (1,682.18)**	**$ 1,805.61**	**$ (1,968.00)**	**$ (2,760.00)**	**$ (3,940.00)**	**$ (4,900.00)**	**$ (3,155.00)**	**$ (5,955.50)**

ST. LOUIS ASTRONOMICAL SOCIETY
PRELIMINARY OPERATING BUDGET - 2020

	Actual Year to Date Aug-19	Budget Year to Date Aug-19	Projection Sept-19 to Dec-19	Projection Year to date Dec-19	Budget Annual 2015	Budget Annual 2016	Budget Annual 2017	Budget Annual 2018	Budget Annual 2019	Budget Annual 2020
Required versus Discretionary Spending										
Gross Profit	$ 3,230.15	$ 2,930.00	$ 1,140.00	$ 4,925.58	$ 3,440.00	$ 3,725.00	$ 3,700.00	$ 4,070.00	$ 4,270.00	$ 6,085.00
Required Expenses										
Newsletter (postage only pre 2019)	$ 115.50	$ 120.00	$ 300.00	$ 415.50	$ 180.00	$ 200.00	$ 175.00	$ 175.00	$ 500.00	$ 600.00
Astronomical League Dues	-	825.00	860.00	860.00	650.00	695.00	670.00	760.00	825.00	860.00
Insurance	825.50	825.00	224.00	1,049.50	380.00	380.00	380.00	825.00	825.00	1,050.00
Website	279.35	285.00	-	279.35	135.00	150.00	170.00	170.00	285.00	625.00
Corporate Filings	-	-	-	-	-	20.00		20.00	-	20.50
Office Supplies	-	75.00	25.00	25.00	165.00	165.00	100.00	100.00	100.00	100.00
Banking Fees	15.50	30.00	-	15.50	-	-	25.00	25.00	30.00	30.00
PayPal Fees	31.09	26.66	15.00	46.09	40.00	40.00	40.00	40.00	40.00	45.00
Postage	77.00	60.00	50.00		75.00	90.00	90.00	90.00	90.00	100.00
Brochures			322.00						610.00	600.00
Printing / Copying Expense	-	-	-	-	888.00	1,115.00	1,370.00	1,370.00	-	-
	$ 1,343.94	$ 2,246.66	$ 1,796.00	$ 2,690.94	$ 2,513.00	$ 2,855.00	$ 3,020.00	$ 3,575.00	$ 3,305.00	$ 4,030.50
Balance for Discretionary Items	**$ 1,886.21**	**$ 683.34**	**$ (656.00)**	**$ 2,234.64**	**$ 927.00**	**$ 870.00**	**$ 680.00**	**$ 495.00**	**$ 965.00**	**$ 2,054.50**
Discretionary Spending										
Home Made Fest	97.00	100.00	-	97.00	100.00	100.00	100.00	100.00	100.00	100.00
Meeting Refreshments	148.49	233.00	100.00	248.49	450.00	350.00	350.00	350.00	350.00	360.00
Meeting Speaker Fees	313.21	340.00	-	313.21	250.00	250.00	600.00	600.00	500.00	500.00
Membership Initiatives	195.09	266.66	204.91	400.00	200.00	200.00	200.00	400.00	400.00	400.00
Merchandise	-	-	-	-	120.00	45.00	45.00	45.00	100.00	-
Membership Recognition	49.33	200.00	250.67	300.00	200.00	260.00	300.00	300.00	300.00	900.00
Astronomy Day/Outreach	-	-	-	-	-	-	300.00	-	650.00	1,100.00
Star BBQ Expense	-	-	200.00	200.00	175.00	175.00	175.00	200.00	200.00	200.00
Library expense	80.00	352.50	350.00	430.00	300.00	100.00	300.00	300.00	470.00	500.00
Loaner Scopes	79.94	66.00	-	79.94	200.00	50.00	50.00	600.00	100.00	100.00
Library Scope Program Expense	73.69	340.00	-	73.69	*600.00*	200.00	200.00	200.00	450.00	650.00
Eclipse Workshop Dues	-	-			*200.00*	200.00	-			N/A
2017 Eclipse Committee	-	-			*200.00*	-	-	-	-	N/A
	$ 1,036.75	$ 1,898.16	$ 1,105.58	$ 2,142.33	$ 2,995.00	$ 1,930.00	$ 2,620.00	$ 3,095.00	$ 3,620.00	$ 4,810.00
Net Income/(Loss) From Operations	**$ 849.46**	**$ (1,214.82)**	**$ (1,761.58)**	**$ 92.31**	**$ (2,068.00)**	**$ (1,060.00)**	**$ (1,940.00)**	**$ (2,600.00)**	**$ (2,655.00)**	**$ (2,755.50)**
Other Expense										
2017 Eclipse Escrow Funding						$ 800.00	$ 1,000.00	N/A	N/A	N/A
Library Telescope Program Escrow Funding						1,000.00	1,000.00	500.00	500.00	-
Depreciation Expense (JC Scope and Dome)										3,200.00
Total Other Expense					N/A	$ 1,800.00	$ 2,000.00	$ 500.00	$ 500.00	$ 3,200.00
Actual Historical Net Income for prior years				**$ 2,243.34** (2014)	**$ 368.42** (2015)	**$ 30,000.32** (2016)	**$ 10,680.08** (2017)	**$ 4,325.86** (2018)		

* Includes separately voted funds for ISDC

** For purposes of the budget analysis, the LTP Escrow and 2017 Eclipse Escrow other income and other expense year to date have been excluded.

9:57 PM
11/11/19
Accrual Basis

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

	Jan - Oct 19	Budget	$ Over Budget
Ordinary Income/Expense			
Income			
Loaner Scope Sales	75.00	0.00	75.00
Total Magazine Subscription	1,295.40	1,399.85	(104.45)
Membership Dues	3,585.00	3,585.00	
Total Income	4,955.40	4,984.85	(29.45)
Cost of Goods Sold			
Total Magazine Subscriptions	1,270.25	1,399.85	(129.60)
Merchandise		100.00	(100.00)
Total COGS	1,270.25	1,499.85	(229.60)
Gross Profit	3,685.15	3,485.00	200.15
Expense			
Total 1-Programs & Events	1,117.89	2,694.33	(1,576.44)
Total 2-Newsletter	148.62	421.00	(272.38)
3-Library expense	80.00	470.00	(390.00)
4-Astronomical League Dues	860.00	825.00	35.00
5-Loaner Scopes	79.94	82.00	(2.06)
6-Brochures	322.00	510.00	(188.00)
7-Insurance	825.00	825.00	
8-Website	279.35	285.00	(5.65)
Total 9-Administrative Expenses	133.59	238.33	(104.74)
Total Expense	3,846.39	6,350.66	(2,504.27)
Net Ordinary Income	(161.24)	(2,865.66)	2,704.42
Other Income/Expense			
Other Income			
Total Donations	2,039.70	0.00	2,039.70
Interest Income	253.62	83.00	170.62
LTP Receipts	22,815.77	0.00	22,815.77
Proceeds from Lens Sales	693.75	0.00	693.75
YMCA Trout Lodge Scope Proceeds	450.00	0.00	450.00
Total Other Income	26,252.84	83.00	26,169.84
Other Expense			
LTP Disbursements	22,050.19	0.00	22,050.19
LTP Escrow Funding	500.00	500.00	0.00
YMCA Trout Lodge ESCROW Expense	838.50	0.00	838.50
Total Other Expense	23,388.69	500.00	22,888.69
Net Other Income	2,864.15	(417.00)	3,281.15
Net Income	**2,702.91**	**(3,282.66)**	**5,985.57**

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

	Dec 31, 18	Oct 31, 19
ASSETS		
Current Assets		
Checking/Savings		
Checking - First Bank	9,990.59	6,848.20
Deposit, Certificate of	20,239.11	15,761.85
Library Telescope Escrow	91.35	1,081.79
PayPal	0.00	319.90
Savings - First Bank	46,379.35	41,110.23
YMCA Trout Lodge Escrow	627.87	14.21
Total Checking/Savings	77,328.27	65,136.18
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	65,957.71
Fixed Assets		
JC Scope and Obervatory*	0.00	15,000.00
Total Fixed Assets	0.00	15,000.00
TOTAL ASSETS	**78,254.80**	**80,957.71**
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	2,702.91
Total Equity	78,254.80	80,957.71
TOTAL LIABILITIES & EQUITY	**78,254.80**	**80,957.71**

* Once all associated setup expenses are incured, the JC Scope will be depreciated over a 60 month period.

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

St. Louis Astronomical Society Executive Board Meeting Minutes October 3, 2019

Opening Activities: Attending: Jim Small, Mark Jones, John Newcomer, Tom Nickelson, Bill Winningham, Bradley Waller, Larry Campbell Meeting called to order at 7:09pm Minutes for September meeting were distributed before the meeting. Motion to approve the September minutes made by Tom N. second by John N. Minutes were approved|

2. External Business: Astronomy Day will be Oct 12 instead of Oct 5. Brad has 4 tables for SLAS to use for displays. Solar viewing will be outside if clear. 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: Nov 7, Dec 5

3. Director Reports:

President: Jim Small: Member Lee Halbeck passed away on 8-14-19. If you have photos sent them to Jim for newsletter.

Vice President: Bradley R Waller

Presentations 2019

Month	Name	Topic	Sponsor
18-Oct-2019	Abigail Bollenbach	Pulsars and Quasars	Bartlesville Astronomical Society
15-Nov-2019	Claire Chandler, PhD	Super-Earths and the Formation of the Solar System	NRAO (Zoom)
20-Dec-2019	Duncan Lorimer, PhD	Fast Radio Bursts: "Lorimer Bursts"	University of West Virginia (Zoom Event)

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

***Astro 101:** *Welcome Aboard Meetings for new members are still planned for each month.
|Mark J. will do A101 on Transit of Mercury

Secretary: Mark Jones: No report

Treasurer/ALCor: Bill Winningham Our first budget meeting was held on for Sunday, September 29th at Young's in Valley Park. The attendees worked on the budget summary spreadsheet and updating last year's narrative. Board and committee members are asked to provide budget items rationale and a budget commentary for the budget categories you are responsible. We should also schedule the second budget committee meeting. Next meeting will be at Young's Restaurant on Oct 20th

Hospitality: Larry Campbell November is recognition month. I may need to order more pins based on updated anniversary spreadsheet.

Membership recognition: Award Nomination Forms final discussion and approval.

Board member at large reports

John Newcomer (2022): Review drafts for new SLAS "Quarter cards". Suggestions changes to artwork for front and back of card were made by Board and finalized for printing. Brad will plan to get 4000 cards printed. Hope to have ready for Astronomy Day on Oct 12th

4. Committee Reports: If needed

Library Telescope Program: No report

Membership: September 2019 membership report which shows that we have 184 members. This count is one less than last month (185 members) and one member above last year at this time (183 members). Notably, we had six new members during the month. However, new membership for the current year-to-date (30 new members) is still below last year for the comparable period (39 members). |

Merchandise: no report

Telescope Making: No report

Librarian: no report

Newsletter: Please forward articles to newsletter@slasonline.org Send photos

Website: 2019 and 2020 speakers list is current on SLAS website. NSN having calendar link problem, Jim has added a redirect link until NSN is corrected

Social Networking:

Night Sky Network: No report

SLASdialogs: Yahoo has made the decision to no longer allow users to upload content to the Yahoo Groups site. Beginning October 28, you won't be able to upload any more content to the site, and as of December 14 all previously posted content on the site will be permanently removed. ASEM and other local astronomy groups are re-locating to groups.io. There is no cost to create a new SLASDialogs on groups.io. Mark Jones created new SLASDialogs@groups.io account on 10-17-2019. Groups.io offers premium service that will transfer all old messages and member accounts from yahoo.groups to groups.io, to upgrade to premium membership will cost $100/yr. At the October General Meeting the following Board members got together and voted on the following motion. Jim Small, Mark Jones, Larry Campbell, Brad Waller, and Brent Buch. **Motion:** "I move that SLAS authorize Grant Martin to proceed with updating SLASDialogs@groups.io to premium membership for 1 year and to initiate transfer of all messages and memberships from yahooGroups to groups.io. SLAS will reimburse Grant for the $100 and payment will be debited from 2019 SLAS website budget." Motion was made by Mark Jones and second by Jim Small. Motion passed by Board 10-18-2019.

Dark Site: no report

Loaner Scopes: Moving of the loaner telescope shed will be postponed until November

Publicity: Press release for November meeting will be sent out by Oct 5th.

Star Parties: First Friday, Jefferson College, Gateway Arch, Audubon, others.

5. Old Business: none

6. New Business: see motion above

7. Closing Activities Meeting adjourned at 9:18pm

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.
Dec 5

Dark Sky Observing Dates
Nov 23, Dec 28

Francis Park Events: These events are on Wednesdays of the week nearest the first quarter Moon
See you next spring!

Sky Orienteering Events For members who want to gather and do some relaxed observing at Babler State Park
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
Dec 6

Pattonville Observatory Public Viewing Dates
Dec 6, Dec 13, Jan 10, Jan 31, Feb 14, 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.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:

SLAS EVENTS

November

15 Fri	SLAS Regular Meeting
16 Sat	Solar Saturday
16 Sat	Laumeier Sculpture Park
17 Sun	SLAS Sky Orienteering
18 Mon	JCO JCL Arnold Library
19 Tues	JCO Jefferson College Library
23 Sat	SLAS Dark Sky Observing

December

3 Tues	JCO JCL Northwest Library
4 Wed	JCO DeSoto Library
5 Thur	SLAS Board Meeting
6 Fri	SLSC Public Telescope Viewing
8 Sun	Jefferson College Observatory
10 Tues	St. Louis Public Library
15 Sun	SLAS Sky Orienteering
19 Thur	Wydown Middle School
20 Fri	SLAS Regular Meeting
21 Sat	Solar Saturday
28 Sat	SLAS Dark Sky Observing

January

3 Fri	SLSC Public Telescope Viewing
5 Sun	Jefferson College Observatory
8 Wed	St. Louis Central Library
17 Fri	SLAS Regular Meeting
28 Tues	Eureka Hills Library
29 Wed	Daniel Boone Library
30 Thur	Meramec Valley Library

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

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

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

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

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

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

Board Members at Large:

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

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

John Newcomer 314-496-4636
board22 at slasonline.org

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

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

COMMITTEE CHAIRS

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

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

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

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

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

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

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

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

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

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

Social Media *Vacant*

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

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

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

Webmaster ***Jim Small*** 314-909-7211
webmaster at slasonline.org

Devoted to the Interest and Advancement of the Science of Astronomy

ST. LOUIS ASTRONOMICAL SOCIETY

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

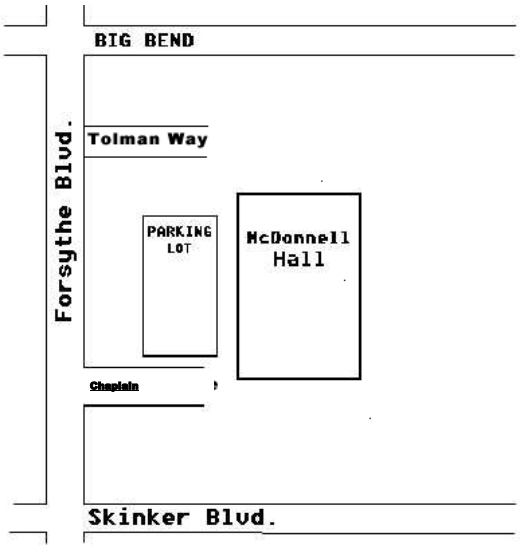
Follow us on
Twitter: @stlastro
Facebook: @stlastro

Who We Are and What We Do

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

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

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



St. Louis Astronomical Society

Jim Small
13128 Cozyhill Drive
St. Louis, MO 63122