THE EVENT HORIZON

ST. LOUIS ASTRONOMICAL SOCIETY

Devoted to the Interest and Advancement of the Science of Astronomy

VOLUME 29, Issue 12
December, 2019

Fast Radio Bursts – Nature's Latest Cosmic Mystery

by

Dr. Duncan Lorimer
West Virginia University

Dr. Duncan Lorimer of West Virginia University will be featured at the December meeting of the Saint Louis Astronomical Society. The meeting will begin at 7:30 PM Friday, December 20 in McDonnell Hall, Room 162, on the Washington University campus, Saint Louis, MO 63105. McDonnell Hall is accessible from Forsyth Boulevard via Tolman Way.

Stars, interstellar dust clouds, and other astronomical objects emit radio waves as well as light. For most objects, their radio waves may change in brightness or wavelength, but the emission is always present. But the radio waves from about two dozen objects have been detected only a few times – or only once - so far. Fast radio bursts are millisecond-duration pulses of unknown origin. The first one was discovered in 2007. Now, with only 20 objects currently known, fast radio bursters remain sources of unknown origin. Dr. Lorimer will tell the story of their discovery, summarize what we know about them so far, describe the science opportunities these bursts present, and make predictions for what we might learn in the next decade.

Dr. Duncan Lorimer received his PhD. in 1994 for his contributions to the study of pulsars. Since then he has held positions at several colleges and research institutions before joining the faculty of West Virginia University in 2006. There he helped establish the Center for Gravitational Waves and Cosmology. Professor Lorimer is a Fellow of the Royal Astronomical Society and a Fellow of the American Physical Society. In addition to his research efforts, Dr. Lorimer is now Associate Dean for External Research Development for the Eberly College of Arts and Science at West Virginia University.

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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December 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

President's Corner
by
Jim Small

This month we will be voting on the budget after the meeting. Thanks to all who helped put it together. If you have questions, be sure to ask at the meeting! It's been a great year and we have member to recognize for membership and in this newsletter, we also have a list of the volunteer hours for our members. Awards for outreach will be given in February. Other awards will also be given out at that time and the nomination forms for those awards will be in the newsletter supplement which will come out by the meeting or shortly thereafter. The supplement replaces the missing October newsletter and will have a number of articles and photographs which would not fit in the November or December newsletter because of the space the budget narrative and spreadsheet took up.

The Jefferson College Observatory is moving along and it looks like things should proceed nicely this spring. I look forward to using the observatory late next spring!

We will be doing outreach training this spring which will include issuance of volunteer shirts on completion of the training. It will lead to great volunteers and a cohesive look for the Society.

I hope you have a great holiday and look forward to the new year! It will hold great things for SLAS as we move forward!

jrs

Teacher Package:
$350.00 – Riker Box + 30 student
$250.00 - Riker Box + 20 student
$10 Donation - One student
Proceeds to Jefferson College Observatory. They will be available for purchase at the meeting

SLAS Volunteer Hours

So far, SLAS volunteers logged 1440 hours from Jan 1st to Dec 1st, 2019

Members with 5 or more events for 2019, can qualify for the Night Sky Network pin.

Please go to NSN and make sure your volunteer hours are correct and enter any missed hours.

Currently, we have 21 members qualifying for the NSN pin and 8 more that only need 2 more events. There are a number of December events you can volunteer for, including our First Friday event on Dec 6
Check NSN for future opportunities and sign up today.
Thank you to all our volunteers!

Donald Ficken	76 events; 189 hrs
Bradley Waller	51 events; 154.5 hrs
Cook Feldman	38 events; 115 hrs
Richard Jennings	29 events; 77 hours
Mark Jones	28 events; 101 hrs
John Beaury	23 events; 70.5 hrs
James Small	20 events; 91 hrs
Frank Mack	19 events; 37.5 hrs
Bill Breeden	18 events; 65.5 hrs
Rita Breeden	17 events; 62 hours
Rich Heuermann	16 events; 24 hours
Larry Campbell	15 events; 40 hours
Sharon Bertram	13 events; 31.5 hrs
John Strebeck	11 events; 31.5 hrs
Kathryn Czeschin	11 events; 22 hours
Richard Fefferman	10 events; 25.5 hours
Rick Menendez	9 events; 29.5 hours
Phyllis Nolan	8 events; 22 hours
William Neubert	7 events; 31 hour
Alfred Schovanez	7 events; 22 hrs
Carl McCullough	5 events; 15.5 hrs
Jim Trull	4 events; 14.5 hours
Ann Trull	4 events; 14.5 hours
John Boncek	4 events; 6.5 hours
Robert Sullentrup	4 events; 11 hours
Raymond Mueller	3 events; 11 hours
Charles Laughton	3 events; 5 hours
Mary Barteau	3 events; 7 hours
David Adkins	3 events; 13.5 hours
Brett Wilhelm	2 events; 2.5 hours
Timothy Hulla	2 events; 7 hours
Shanna Ramirez	2 events; 4 hours
Anna Schroeter	2 events; 4.5 hours
Randy Harrison	2 events; 9.5 hours
John Sullivan	2 events; 4 hours
Jeff Kisslinger	2 events; 6 hours
Brian Mills	1 events; 2.5 hours
Mark Fedde	1 events; 5 hours
Gregory Rigelman	1 events; 3 hours
Bill Biermann	1 events; 5 hours
Alan Sapia	1 events; 2 hours
John Duchek	1 events; 2 hours
Ken Kibort	1 events; 2 hours
Richard Rodgers	1 events; 2 hours
William Winningham	1 events; 2.5 hours
Renee Mettle	1 events; 3 hours
Lance Traylor	1 events; 3 hours
Maryanne Angliongto	1 events; 3.5 hours
Zuzana Schneider	1 events; 2 hours
Laura McNamee	1 events; 5 hours
Derek Kalista	1 events; 2.5 hours
Craig O'Mara	1 events; 2 hours
John Zinn	1 events; 9 hours
Brittany Burney	1 events; 3 hours

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.

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

(Continued on page 4)

(Continued from page 3)

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, 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 com-

Items from Lookin' Up Optics.
Randy says club members get a discount,
Watch for some of these items to be on the table for prizes at the December meeting!!

The Celestron NEX YZ Smart phone adapter, this is a very enjoyable item even for outreach. very sturdy works well goes right on your eyepiece, snugs up nice and tight you can get good pictures of the moon and adjust in all three axes. It also works great on spotting scopes and binoculars

Portable power packs are very convenient to use.

They will power most computerized mounts for 6 to 8 hours

A variety of handwarmers. Some of them are just handwarmers, others are flashlights with portable power chargers for cell phone ,tablet ,sports cameras. Some have red lights. Heat ranges from 4 to 10 hours depending on the model.

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	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
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**	**$ 368.42**	**$ 30,000.32**	**$ 10,680.08**	**$ 4,325.86**		
				(2014)	(2015)	(2016)	(2017)	(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.

6:22 PM
12/05/19
Accrual Basis

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

	Jan - Nov 19	Budget	$ Over Budget
Ordinary Income/Expense			
Income			
Loaner Scope Sales	75.00	0.00	75.00
Total Magazine Subscription	1,429.30	1,530.75	(101.45)
Membership Dues	4,005.00	3,685.00	320.00
Total Income	5,509.30	5,215.75	293.55
Cost of Goods Sold			
Total Magazine Subscriptions	1,437.10	1,530.75	(93.65)
Merchandise		100.00	(100.00)
Total COGS	1,437.10	1,630.75	(193.65)
Gross Profit	4,072.20	3,585.00	487.20
Expense			
Total 1-Programs & Events	1,189.46	2,821.66	(1,632.20)
Total 2-Newsletter	148.62	463.00	(314.38)
3-Library expense	80.00	470.00	(390.00)
4-Astronomical League Dues	860.00	825.00	35.00
5-Loaner Scopes	79.94	91.00	(11.06)
6-Brochures	322.00	560.00	(238.00)
7-Insurance	825.00	825.00	
8-Website	279.35	285.00	(5.65)
Total 9-Administrative Expenses	142.91	249.16	(106.25)
Total Expense	3,927.28	6,589.82	(2,662.54)
Net Ordinary Income	144.92	(3,004.82)	3,149.74
Other Income/Expense			
Other Income			
Total Donations	2,039.70	0.00	2,039.70
Interest Income	320.50	91.00	229.50
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	26,319.72	91.00	26,228.72
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	2,931.03	(409.00)	3,340.03
Net Income	3,075.95	(3,413.82)	6,489.77

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

	Dec 31, 18	Nov 30, 19
ASSETS		
Current Assets		
Checking/Savings		
Checking - First Bank	9,990.59	6,906.73
Deposit, Certificate of	20,239.11	15,822.76
Library Telescope Escrow	91.35	1,081.79
PayPal	0.00	567.53
Savings - First Bank	46,379.35	41,116.20
YMCA Trout Lodge Escrow	627.87	14.21
Total Checking/Savings	77,328.27	65,509.22
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	66,330.75
Fixed Assets		
JC Scope and Obervatory*	0.00	15,000.00
Total Fixed Assets	0.00	15,000.00
TOTAL ASSETS	78,254.80	81,330.75
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	3,075.95
Total Equity	78,254.80	81,330.75
TOTAL LIABILITIES & EQUITY	78,254.80	81,330.75

* 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 November 7, 2019

1. Opening Activities: Attending: Jim Small, Bill Winningham, Larry Campbell, Tom Nickelson, Brent Buch, John Newcomer Meeting called to order at 6:47 Motion to approve minutes by Bill W., seconded by Larry C. Motion carried.

2. External Business: Jefferson College Event went well, about 50 visitors, many objects observed. About 7 telescopes at the event. Shed in place for Jeffco scopes. Mark had the first meeting with the Eagle Scout for the process of moving the observatory. Discussion about which end of the parking lot to build the observatory on because of low land in the original area. **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: Dec 5

3. Director Reports:

President: Jim Small: |

Vice President: Bradley R Waller no report submitted.

Presentations 2019

Month	Name	Topic	Sponsor
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)

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.

Secretary: Mark Jones:

Treasurer/ALCor: Bill Winningham 1. Financial reports. Observatory and telescope will be depreciated over 60 months, $1836 in donations so far this year. We are up $5200 for the year so far! Budget: Will include contracted fees from library programs as dependable income to be included. Total expenditures: $8,640.50 Total revenue $6085 Balances to -$2555.50, right in line with the previous three budget years. Below line expense $200 for LTP program, depreciation expense $3200.00 for the observatory.
John Newcomer moved to approve the budget, second by Brent Buch. Motion carried.
Insurance for the observatory was purchased for $224 for the remainder of the year.

Hospitality: Larry Campbell
Membership recognition: Award nomination forms will be done next week and submitted to the newsletter.

Board member at large reports

Tom Nickelson ((2020) No report

Brent Buch (2021) No report

John Newcomer (2022): Possible recruit who is interested in robotic telescopes

4. Committee Reports: If needed
Library Telescope Program:
Membership: Current level is 181, up from 179.
Merchandise: no report
Telescope Making: No report
Librarian: no report
Newsletter: Please forward articles to newsletter@slasonline.org
Website: no report
Social Networking: no report
Night Sky Network: Still some issues with the embedded calendar, direct link is still provided.
SLASdialogs: The entire discussion group has been transferred to groups.io. It took a week or more to complete the transfer.
Dark Site: no report
Loaner Scopes: moving the shed in December depending on Greg's availability.
Publicity: Rich is working on notice for November. Will be out in a day or two.
Observing Programs: no report
Star Parties: Jefferson College events are scheduled for the Sunday following First Friday to take advantage of publicity.

5. Old Business: None

6. New Business: None

7. Closing Activities John Newcomer motion to adjourn, seconded by Tom Nickelson, Motion approved. Meeting adjourned at 7:87.

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. Jan 2, Feb 6, Mar 5, Apr 2, May 7, June 4, July 2, Aug 7, Sept 3, Oct 1, Nov 5, Dec 3

Dark Sky Observing Dates
Dec 28

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 Jan 3, Feb 7, 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
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:

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

	December
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
16 Thur	O'Fallon Public Library
17 Fri	SLAS Regular Meeting
25 Sat	SLAS Dark Sky Observing
28 Tues	Eureka Hills Library
29 Wed	Daniel Boone Library
30 Thur	Meramec Valley Library
	February
5 Wed	St Louis Central Library
7 Fri	SLSC Public Telescope Viewing
9 Sun	Jefferson College Observatory
21 Fri	SLAS Regular Meeting
22 Sat	SLAS Dark Sky Observing
27 Thur	Florissant Valley Library
29 Sat	Library Telescope Maintenance
	March
4 Wed	St Louis Public Library
6 Fri	Parkway School STEM Fest
6 Fri	SLSC Public Telescope Viewing
8 Sun	Jefferson College Observatory
9 Mon	Rock Hill Library
20 Fri	SLAS Regular Meeting
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

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

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observing at slasonline.org

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

Devoted to the Interest and Advancement of the Science of Astronomy

ST. LOUIS ASTRONOMICAL SOCIETY

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

Follow us on
Twitter: @stlastro
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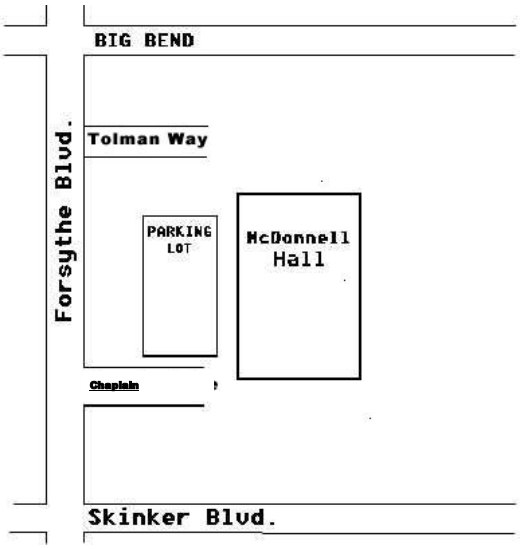
Who We Are and What We Do

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.



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