THE EVENT HORIZON

ST. LOUIS ASTRONOMICAL SOCIETY

Devoted to the Interest and Advancement of the Science of Astronomy

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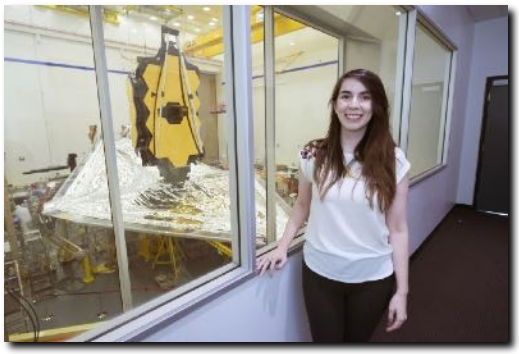
Unveiling the Universe with the Webb Space Telescope
by
Dr. Nathalie Nguyen-Quoc Ouellette
iREx, University of Montreal

Dr. Nathalie Nguyen-Quoc Ouellette of the Institute for Research on Exoplanets (iREx) and the Mont-Mégantic Observatory at the University of Montréal, will be featured at the October meeting of the Saint Louis Astronomical Society. Info for attending the meeting may be found below.

The James Webb Space Telescope (JWST) is the successor to the still-active Hubble Space Telescope. JWST is the largest telescope ever sent to space. It "sees" the infrared Universe, which is invisible to us, but which we can sense as heat. This view gives it the capacity to see farther into our Universe, peer through the cosmic dust sprinkled throughout galaxies, and probe new alien worlds. JWST is an international collaboration among NASA, the European Space Agency and the Canadian Space Agency. The first images released offer a preview of some of its future discoveries.

Nathalie Ouellette is an astrophysicist and science communicator. She obtained her Ph.D. in Physics & Astronomy at Queen's University in Kingston, Ontario in 2016. Her research focuses on galaxy formation and evolution, particularly of galaxies found in clusters. Dr. Ouellette is currently the Deputy Director of the Institute for Research on Exoplanets (iREx) and the Mont-Mégantic Observatory at the University of Montréal. She is also the Outreach Scientist for JWST in Canada, in collaboration with the Canadian Space Agency. She participates in science outreach events, from local to international scales, to encourage interest in space science and to increase scientific literacy in Canada.



Upcoming Meetings
November: Brett McGuire, MIT
December: Alan Dyer, Astrophotography

SLAS Returns to In-Person Meetings! Zoom Conference Meetings will Continue

SLAS meetings for the fall have been scheduled for McDonnell Hall, room 162. It's been too long! The room will be open by 6 pm to allow setup and will remain open till 11. You still ***cannot park in any red spaces***. There are 18 yellow slots on Forsyth which are ok after 5 pm Friday. There are also many yellow slots by the greenhouses west of McDonnell that are eligible after 5 pm. There is also an underground parking garage east of McDonnell at Wrighton Way. Park in any yellow slot. There are also two car chargers near McDonnell and several in the garage.

Can't wait to see everyone in a meeting again! Friday night, 7:30 pm!

We will still run the meeting via Zoom Conference in addition to live and in person. The Zoom room will be open from 7-10 pm.
Below is the invitation to join:
To join Zoom Meeting for SLAS Regular Meeting with computer or smartphone:
Just click the link below:
https://zoom.us/j/8604505790

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President's Corner

by

Jim Small

So far we've had two great talks as part of a benefit of attending the RASC GA conference this summer! Alan Dyer will be the next installment of that behefit in December. Alan is a fantastic photographer from Canada so I'm looking forward to his images of Aurora. It should be a good talk.

Dobsonfest on September 17 was a GREAT success, with many attending and lots of great scopes! Looking forward to another edition next year to be hosted by another group as we pass it from one group to another in the region.

The potential upgrade to the 16" has been put off for now as we have managed to get it working fairly reliably for the moment. We will put the upgrade in the budget so it's ready to go in the event we decide to do it. Look for it in the budget discussions in November. This will make it easier to implement if it's already approved by the membership.

We will expand on the spectrum discussion from last month and talk about different telescope types, the part of the electromagnetic spectrum they measure, and where you have to place the telescope for the best results.

Keep those newsletter articles coming! Also, feel free to send photos (with captions!) to us for use in the newsletter. We always like to see what our members are up to in the field!

It's been a hectic couple of months for me, but it's a good thing. Pattonville Observatory is running again with the next viewing on December 2. We've had a ton of visitors so far when the weather is good. 56 on the first night alone!

Check the calendar for upcoming events. New places like Tower Grove park and Stacy park will be among them. This is in addition to the events at the Jefferson College Observatory and the Science Center.

Glad to have the meetings back in person. Be sure to come down and see us!

Hope to see you at the meeting!! jrs

SLAS Memberships Expiring in November

FIRST NAME	LAST NAME
Kevin	Adkins
Joseph	Barteau
Melissa	Bufalo
Randy	Harrison
Curt	Hartog
Francis "Frank"	Mack
Craig	Walters

SLAS Memberships Expiring in December

FIRST NAME	LAST NAME
Maryanne	Angliongto
Brent	Buch
David	Ebers
Karen	Fajardo
Linda & John	Follis
Angie	Forrester
Nora	Gettins
Jack	Gillette
Irvin	Hamilton
Katherine	Holzem
Jamie	Lyon
Chris	Miles
Marc	Oden
Thomas E.	Ryan, M.D.
Earl	Schultz & Family
Zeke	Smith
Elisabeth	Spratt
James H.	Wells

For Sale

Selling my AVX Mount, $1,000 OBO. Local meetup near St Louis, MO. Will not ship. Includes what you see in photos: Stock mount, PLUS a polar scope, PLUS a DC/AC adapter so you can plug it into a wall instead of a car. Unfortunately I have some home repairs to pay for.

Message me on Facebook, or email business@themoodys.org

https://www.facebook.com/cmmoody/

Chris Moody

Parts Reference:

AVX Mount: https://amzn.com/dp/B00AYGIQDS/

Polar Scope: https://amzn.com/dp/B00009X3UQ/

AC/DC Power Adapter: https://amzn.com/dp/B000P7O5DG/

Mass Loss in the Universe Due to Stellar Fusion and Mergers of Binary Blackholes and Neutron Stars

by **Mark Jones**

While I was attending the Green Bank Star Quest in June 2022, one of the speakers talked about gravitational waves detected by LIGO. Some of the results were interesting and reminded me that a merger of two massive bodies like binary black holes or neutron stars can create gravitational waves by the conversion of some of their mass into G-wave energy. Modeling of these mergers has been confirmed by LIGO, with about 5% of the system's mass is converted into gravitational energy. No known natural process will convert this energy back into mass. Doesn't this mean that this "mass" is lost forever to the mass of the universe? How many mergers are taking place? How much mass are we talking about? Is this mass "loss" significant? Perhaps the LIGO data can help answer some of these questions.

https://www.ligo.org/science/Publication-O3bCatalog/index.php

The LIGO website above has reference to many scientific papers containing LIGO data.

As many of you know the LIGO (Laser Interferometer Gravitational Wave Observatory) is the world's largest gravitational wave observatory. LIGO consists of two laser interferometers located thousands of kilometers apart, one in Livingston Louisiana and the other in Hanford Washington State. LIGO uses the physical properties of light and of space itself to detect gravitational waves. Starting in 2023, LIGO, Virgo and KAGRA will start a fourth observing run which should enhance or extend the volume and masses covered.

For LIGO, three gravitational wave observing runs were conducted from 2015 to 2020. During these observing runs, mergers of binary black hole systems, and binary neutron stars were detected. Analysis of the G-wave profiles can determine the mass of each body before and after merger as well as distance to the object. Based on results from observing runs 1&2, scientists have estimated an expected merger rate for these objects. The rates are in units of mergers per cubic Parsec per year. Here is a breakdown of those preliminary rates:

- Binary black holes between 18-85 solar masses; rates = 10-100 mergers/cubic giga-parsec/year
- Binary neutron stars between 1.4-2.1 solar masses; rates = 100-3800 mergers/cubic giga-parsec/year
- Black hole and neutron stars between 17-87 solar masses; rates=37-600 mergers/cubic giga-parsec/year.

https://www.ligo.caltech.edu/page/four-new-detections-o1-o2-catalog

All detections were at a distance range of 0.32-2.8 giga-parsecs. This is a look-back distance/time of 2.8gaiga-parsec x 3.26 LY/parsec = 9.29 GLY. This radius defines a volume of space equal to 96 cubic giga-parsecs.

Therefore, if we use the predicted rates from above and assume a uniform distribution over this volume, then we could expect between 200 and 4,500 mergers per year. For the three binary categories mentioned above, approximately 5% of the mass of two merging bodies is converted to gravitational wave energy. Using the mass ranges above, 5% of that mass corresponds to a range of 4x10^13 to 2.7x10^15 solar masses! This means this much mass could now reside in gravitational wave energy in the universe due to mergers over the last 9.2 billion years.

Now is this mass loss significant? Most estimates predict that the universe contains an equivalent of about 2x10^21 stars. Based on this number, we see mass loss is at most one part per million and no more than 20 parts per billion. Before the discovery of dark matter as an attractive force, the small mass loss due to mergers would have been considered significant for an open vs closed universe.

The universe also loses mass through stellar fusion. The Sun for example converts about 4.2billion kg of mass ($E=mc^2$) into light every second. Light has no mass. Light can be absorbed to create kinetic energy or temperature increases, but there are few natural processes for converting this energy back to into mass. Over a 4 billion-year period of fusion, the Sun should lose about 2.7x10^-4 solar masses. If we assume the Sun as an average star and there is an equivalent of about 2x10^21 stars in the universe each losing mass at the same rate for 4 billion years we can compute the total mass lost in the universe as 2x10^21 stars x 2.7x10^-4 solar masses = 4.6x10^17 solar masses or about 300 parts per million.

Coming full circle to the original questions: How much mass are we talking about? For mergers in a max-case scenario we are talking about 2.7x10^15 solar masses lost over 9.3 billion years, For stellar fusion, max-case we are talking about 10.6x10^17 solar masses over 9.3 billion years.

Is this mass "loss" significant? While the number of solar masses converted to energy over 9.3 billion years is significant, compared to the estimated 2x10^21 solar masses in the universe the percentage is quite small, approximately 0.05%. It would be interesting to discuss this with experts in the field of universe expansion acceleration to see if these factors have been taken into account where dark energy is currently the proposed as the source.

Further reading:

https://www.princeton.edu/news/2022/04/12/princeton-researchers-find-10-new-black-hole-mergers-hiding-data-ligo-and-virgo

https://www.ligo.caltech.edu/page/four-new-detections-o1-o2-catalog

https://arxiv.org/abs/1811.12907

https://www.ligo.org/science/Publication-O3bCatalog/index.php

Francis Park Stargazing Report

September 28 and October 5, 2022

FRANCIS PARK, SOUTH ST. LOUIS – Rarely, two Francis Park Stargazing events will occur on consecutive Wednesdays. The events had been hovering around the beginning and ending of the month this year. The last Wednesday of October would only be a 1-day old Moon, which would not be observable. November 2 was a possibility, but cold weather usually sets in by then. Hence, October 5 was the choice, resulting in two events in a row.

These were the final two Francis Park Stargazing events for 2022, the year dedicated to the memory of Glennon E. Greenway. The weather proved to be difficult this year, with only three successful events out of the eight scheduled (6/8, 8/31, 9/28). August 31 and September 28 were spectacular events, giving us television coverage, clear skies, and a beautiful crescent Moon. Four events were canceled outright (4/6, 5/4, 7/6, 8/3), and the final one (10/5) was a bad call, overcast despite a hopeful forecast. Several members and visitors attended the final event, although it turned out to be mostly a social gathering under overcast skies. Mild temperatures made it pleasant nonetheless.

Here are some candid photos from the final two Francis Park events for 2022. Enjoy!

Bill Breeden

Checking Your Membership Status on Night Sky Network
by Mark Jones

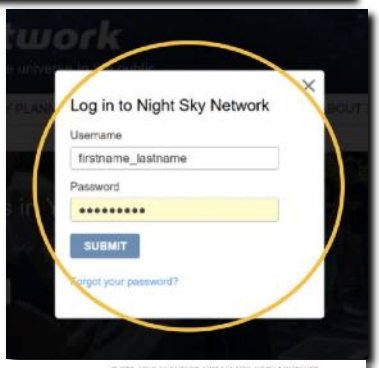
Is your membership expired or about to expire? How do you 8check this on Night Sky Network?

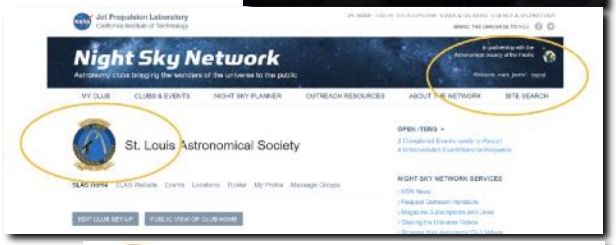
1. Login to Night Sky Network

https://nightsky.jpl.nasa.gov/index.cfm

2. Enter your username and password. Your Username is always your first and last names separated by an underscore "_"

3. After you login you should see the SLAS logo. A welcome should appear in the upper right corner





4. Select "My Profile"

5. Your "My Profile" page should appear.

6. Scroll down your page and check the "Membership Paid Through" date

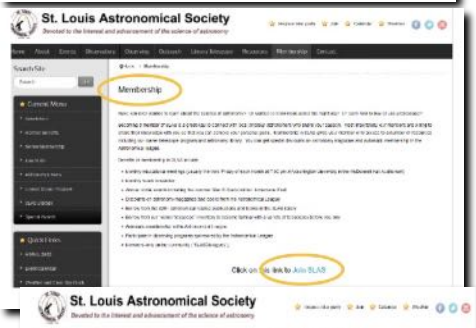
7. Check your User Preferences and other data, use the "Edit Profile" button near top of page

8. If you edit and change any of your data, make sure to hit "Submit" to save the new information

9. If you new to renew your membership, go to the SLAS website, and select "Join" near top of page.

https://www.slasonline.org/

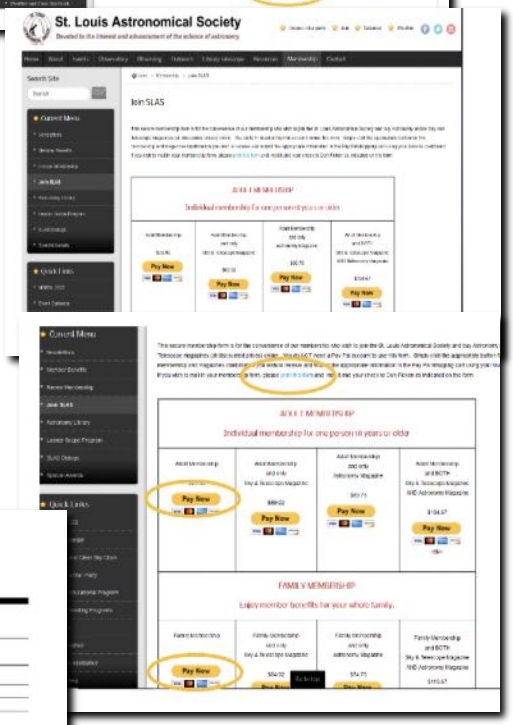
10. On the Membership Page, click on link to Join SLAS



11. The Join SLAS page will appear with several membership option.

12. For the membership option you want, hit the "Pay Now" button

13. You can use PayPal or your credit card. You do NOT need a PayPal account.



14. If you wish to pay by check follow the instructions above the membership options. Select "print this form"

15. Print and fill out the form and mail to address at bottom of form. Make check payable to St Louis Astronomical Society

SLAS Volunteer Hours
by Mark Jones

SLAS members. In keeping with the NSN 2022 policy for volunteer outreach recognition, SLAS will once again recognize members who volunteer for 2 or more events during 2022. Our recognition ceremony will be at the January or February 2023 SLAS meeting. As of Nov 12, 2022 we had 50 members volunteer for outreach events. These 50 members have contributed almost 800 hours in volunteer time so far in 2022! Some members have already reached the 2 events criteria, others are close.

SLAS has a number of volunteer events remaining in 2022, so there is still time to sign-up. We would appreciate the help and it is fun you get to work with fellow members and learn how easy outreach really is. If you would like to volunteer go to NSN website or SLAS calendar. If you are not familiar with how to sign up, send me an email on which events you wish to sign up for and I can help. Remember it is very important that volunteers who sign up, do show up for the event. Please don't let your fellow members down.

https://nightsky.jpl.nasa.gov/news-display.cfm?News_ID=1015

Here is the current tally of volunteers so far in 2022. If you believe your record is not correct, please contact me.

Donald Ficken	33 events; 100	hours
Bill Breeden	31 events; 52	hours
Mark Jones	19 events; 72.5	hours
Cook Feldman	18 events; 60	hours
Richard Fefferman	18 events; 35.5	hours
Dennis Latinette	12 events; 37.5	hours
Rick Menendez	11 events; 28	hours
John Strebeck	10 events; 16.5	hours
Randy Harrison	9 events; 36	hours
Rich Heuermann	9 events; 24	hours
Ronald Sides	9 events; 22.5	hours
James Small	8 events; 28	hours
Bradley Waller	8 events; 23	hours
Carl McCullough	7 events; 27	hours
Rita Breeden	6 events; 18.5	hours
Richard Jennings	6 events; 15	hours
Maryanne Angliongto	5 events; 16.5	hours
Phyllis Nolan	5 events; 14.5	hours
Alfred Schovanez	4 events; 15	hours
Chris Hanson	4 events; 12	hours
Larry Campbell	4 events; 10	hours
Christian Schulte	3 events; 9	hours
Lalit Chouhan	3 events; 5	hours
Jeff Carpentier	2 events; 14	hours
James Malke	2 events; 10	hours
Larry Meyer	2 events; 6.5	hours
Kenneth Levy	2 events; 6	hours
Orevia Vongsa	2 events; 5	hours
Allex Goh	1 events; 6	hours
Frederick Fischer	1 events; 6	hours
Frank Mack	1 events; 5.5	hours
James & Yvonne Roe	1 events; 5	hours
Mark Fedde	1 events; 5	hours
Richard Myhra	1 events; 5	hours
Wayne Clark	1 events; 4	hours
Nancy Clark	1 events; 4	hours
Joseph Barteau	1 events; 4	hours
Carl Masthay	1 events; 3	hours
Bill Biermann	1 events; 3	hours
Mary Barteau	1 events; 3	hours
Elisabeth Spratt	1 events; 3	hours
Yang Yang	1 events; 3	hours
Alan Jeude	1 events; 3	hours
Bo Cooper	1 events; 3	hours
John Duchek	1 events; 2.5	hours
William Neubert	1 events; 2	hours
Ethel Foster	1 events; 2	hours
Ken Hargrove	1 events; 2	hours
Robert Goddard	1 events; 1.5	hours
Ashvik Chilakala	1 events; 1.5	hours

We have 8 events remaining for 2022, please sign up.

1. 11-15-2022, St. Louis Public Library (LTP) 6:00 PM St. Louis Public Library Buder4401 Hampton AvenueSt. LouisMO

2. 11-18-2022, Belleville West Astronomy Club Star Party 6:00PM Bellville West High School4063 Frank Scott Parkway WestBellvilleIL

3. 11-19-2022, Starry Nights at Stacy Park 6:00PM Stacy Park9750 Old Bonhomme RdOlivetteMO

4. 11-29-2022, Cliff Cave Library (RH)6:00PM St. Louis County Library Cliff Cave Branch5430 Telegraph RdSt. LouisMO

5. 11-30-2022, Daniel Boone Library (LTP) 7:00PM St. Louis County Library Daniel Boone Branch (Outreach Site)300 Clarkson RoadEllisvilleMO

6. 12-1-2022, O'Fallon IL Library (LTP) 6:30PM O'Fallon Public Library120 Civic PlzO'FallonIL

7. 12-4-2022, AIM FOR THE STARS 5:00PM Jefferson College Observatory9873 Farm RoadHillsboroMO

8. 12-6-2022, Grants View Library (LTP) 7:00PM St. Louis County Library Grant's View Branch9700 Musick RoadSt. LouisMO

Mark Jones
St. Louis Astronomical Society

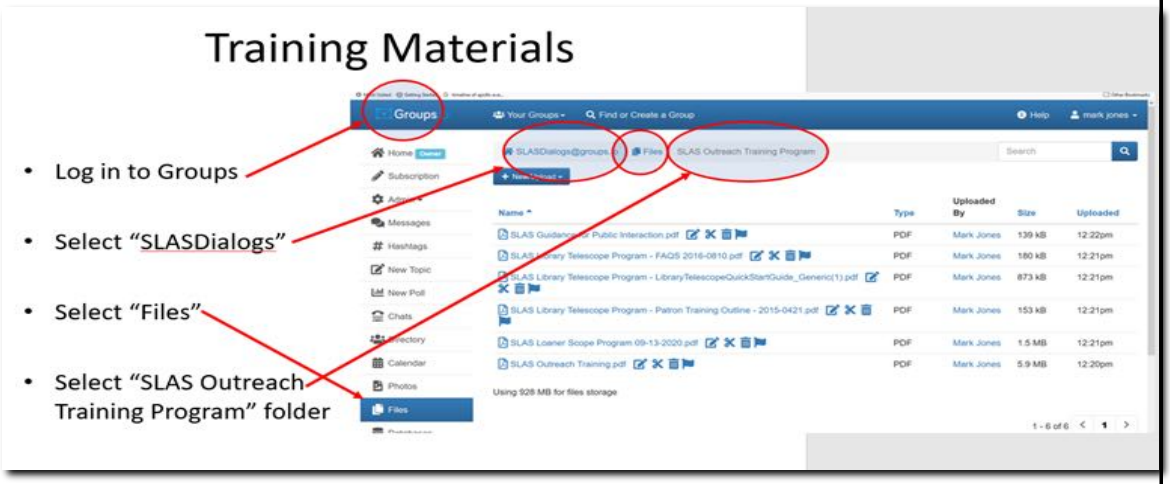
SLAS Public Outreach Training Materials Now Available

Public outreach is one of the really fun activities SLAS members can participate in. Outreach activities include Library Telescope Training session at local libraries; Telescope viewing at the Planetarium and other locations; STEM events at schools; and large outdoor events like the STL Airshow. Between 20 and 30 members every year volunteer their time for one or more of the events. You do not need to be an expert in any field, but be a fellow Astro enthusiast and share your love for the hobby.

Club specific monthly events include: Sundays – Jefferson College Observatory; Wednesdays – Francis Park; Fridays at Science Center; Saturdays – Gateway Arch; and M-F nights at St Louis Library branches

SLAS does NOT require training for anyone wishing to volunteer for outreach. However, this year SLAS created an Outreach Training Program to help members become more confident in performing outreach and to inform members on the resources SLAS has available. Did you know that SLAS has telescopes you can use for outreach. That SLAS Moon, Earth, Mars and Pluto globes you can use for STEM activities. Or that SLAS has solar telescopes and meteorites exhibits. SLAS has banners, tablecloths and signs to use at display tables. Finally, that Night Sky Network and SLAS have toolkits and videos that can help give you engage the public young and old.

The training materials can be found on the SLASDialogs.groups.io website. The training can be done at your own speed, just download and read the training materials. For those who decide to complete the training you can receive a SLAS Volunteer badge and you will also be eligible to receive a SLAS Volunteer t-shirt.



To access the materials go to:

https://groups.io/g/SLASDialogs/files/SLAS%20Outreach%20Training%20Program

or follow the figure above

If you do not have access SLASDialogs.groups.io, or you want the materials send directly to you just send a message to contactus@slasonline.org.

Got Photos?

Many of you have a SLAS coffee mug from 2018. This coffee mug included images taken by a SLAS member of the 2017 total solar eclipse. Our mug inventory is running out and we want to create a new SLAS coffee mug design. We would also like to update our SLAS website and Facebook pages with SLAS member astro-photos. Do you have any astro-photos you would like to share? Planets, Deep Sky, Wide-angle or through a telescope?

You can submit your photos anytime to social@slasonline.org

We have many submissions for the mug already, but if you want a shot at it, please submit your photos asap for the mug.

St. Louis Astronomical Society
Devoted to the Interest and Advancement of the Science of Astronomy
Executive Board Meeting Minutes 9/1/2022

1. Opening Activities a. Attendance: Jim Small, Randy Harrison, Larry Campbell, Brent Buch, Bill Winningham, Mark Jones b. Open Meeting; Meeting opened at 7:06pm c. Approval of last month's meeting minutes approved. Motion to accept by Larry, second by Randy, minutes approved d. Next Board meeting date: Dates for 2022: Oct 6, Nov 3, Dec 1 Meetings will be via Zoom until further notice:
2. Upcoming General Membership meeting topics: a. **Speaker**: Laurie Sibbald , Exoplanets, RASC b. Special Awards needed: perpetual coming c. Speaker Press Release: Brad has sent info to Rich on 8-22-2022, need press release d. Special Business – Equinox Prizes will be drawn at meeting e. A101 – Jim Small to do a Spectroscopy and redshift f. **Hospitality:** Standard drinks and snacks I would like to discuss the formation of a clean-up detail to address our store room at Wash U. The cart and floors have dried cola and other sodas that have turned into a sticky mess. This would also be a good time to organize the contents of the SLAS cart and storage bins. I am available on Friday afternoon to return the bins to the storage room. I have stored them in my van since our Star-B-Q. Scraper, mop, bucket, cleaner for floor, and cleaner for cart, cart, paper towels, trash bags. September 21st – 2pm
3. SLAS Financial Report (as of July 31st) a. Balance Sheet: $1750 in MSRAL profit plus original $2000; Net income $5752 b. Profit/Loss report: Assets $73K, plus material assets c. Annual Budget meetings d. Corporate filings: 2-yr filing for $20, due by end of August, next filing in 2024 Paid IDA $400 sponsor booth at meeting in KC, this was a 2022 budget item ALCOR fees of $1105, in paid August $40K in savings not earning interest, CD rates higher now at First Bank 12-month CDs **Action: Bill to look at moving money to CDs** Homemade expense was posted Action: Bill W. will check into this question from Brad W - Sounds like SLAS may have some money coming from when Jerry Loethen was SLAS Treasurer, see link https://treasurer.mo.gov/UnclaimedProperty/en/Property/SearchIndex?lastName=st.%20Louis%20Astronomical% 0Society&page=1&propertyId=0&searchType=Person #6758173 **Action; Bill was able to access and now will prove ID to state so money can be transferred, $50**
4. Speaker Committee a. Budget - $400 b. Upcoming speakers: **Action: Brad to submit invoices for speakers including coffee mugs and postage. Action: Brad to send mugs to previous 2021 and 2022 speakers. Letters typed and Brad will box ready to ship. Action: Jim to provide addresses for Stephen Hummel, and Scott Roberts**

SLAS Monthly Meeting Presentations 2022-2023

Month	Name	Topic	Sponsor
16-Sep-2022	Laurie Sibbald	Exoplanets	RASC
21-Oct-2022	Nathalie Nguyen-Quoc Ouellette	JWST U Montreal	
18-Nov-2022	Brett McGuire	TBD	MIT
16-Dec-2022	Alan Dyer	Astrophotography	Author

d. Topics of interest Katie Bouman e. Stipends f. Travel **Action: Brad to contact Oct, Dec speakers for Press Release info**
5. Membership Initiatives a. Budget - $500, balance $380 b. Welcome Aboard Meetings – None Planned c. Raffles – None Planned d. Attendance prizes Larry has ordered more lasers for Brad, were direct shipped to Brad **Action: Mark to send personal invitation new members to Sep meeting and to the observatory**
6. Membership Recognition a. Total Budget $550, Balance $11 b. NSN Outreach Awards: **Action: Brad and Jim Small to distribute the 2021 NSN certificates and pins.** c. Membership Report: Attached is the August 2022 membership report. We had a noticeable spike in member expirations and fewer new members resulting in our membership falling to 226 members. This matches our last year's count at this time, but is 19 members below our count at the start of the year. Our Treasurer, Bill Winningham, is sending additional reminders asking for members to renew. Some are longtime members so I suspect that some of this is largely timing. Current Process: Every 2 months send out USPS notices for those about to expire. End of each year Don/Bill send out USPS notices to lapsed members for the year. We move expired memberships from active on NSN to Former Members every time we update ALCOR list. Don's process: 1. Expired memberships removed after 90-120 days. 2. When they renew Don uses their new renewal date unless it is less than 30 days
New email account is slasrenewal@slasonline.org. Bill or Don can login and send emails from this address. Reply will go to treasurer

Ideas: Send out USPS notices every 6 months Send out direct NSN message to expired members, more than 3 months Send out direct NSN message to members about to expire every month Send generic email blast to remind members have expired SLASDialogs, NSN, 3 months or less Publish in expired memberships Newsletter every month Action: Bill to create form letter with links and text form for members to renewal. Include links to magazines and renewal. No need to create distribution lists for each month. Action: Bill to schedule Zoom to review the letter on Sep 8 at 7pm include Don Ficken d. Member anniversary e. New Award program - $600 budget 1. Special Award Committee report: Chairman – Larry Campbell, Jim Small, Mark Jones, Cook Feldman, Sharon Bertram, Fred Schovanez, Bill Neubert 2. New Award Policy and nomination process 3. Submittal deadlines 4. Nomination reviews: 5. Award selection: Awardees have been selected at July 28th meeting 6. Plaques purchased: Jim to purchase plaques for to give out in December, Award letter in October 7. Awards presented: Action: Jim working perpetual plaques Action: Jim to purchase to 2022 plaques for December Action: Larry to send out award letters in October
7. Outreach - a. Budget - $620, balance $541 b. Member Training Program Status: on hold for the time being. c. Purchase of T-shirts for volunteers completed training d. Purchase of lawn signs: none needed e. Upcoming outreach events: Crestwood, Arch, JCO, Tower Grove, Dobson-Fest f. Awards/recognitions – SLAS on Fox2 news for Francis Park - https://fox2now.com/news/missouri/st-louis-astronomical-society-welcomes-all-to-look-to-the-skies/ g. NSN Outreach hours YTD : Total hours reported: 482.5 hours
8. Old Business: Action: Bill to purchase 10,000 eclipse glasses before Oct 1st. Board has decided to go with Option 1 – Missouri Eclipse Task Force printing
9. New Business: Telescope at observatory still having RA motor issues. Have done several fixes. Working ok atm. Consensus decision is if repair work is needed, to have the system upgraded to Explore Scientific's PMC-Eight system. It would be a complete replacement of the electronics and motors/encoders for the scope. – Cost about $3000, approx 3 months down time. We would drive the scope to the company. We would need board approval for the operation and member approval for the funds. To avoid unneeded down time in case it comes to that, I move that the board approve the installation of the PMC-Eight system and that it be brought before the membership as well to be pre-approved. Both of these votes are *IN CASE* we need to do the upgrade, sort of a pre-approval in case we need to pull the trigger on the operation, we can act without the delay of notification and voting by the membership. That will create the least down time for the observatory. *Motion: The SLAS board approves the upgrade of the Meade 16" LX200 telescope for the observatory to the Explore Scientific PMC-Eight system electronics at a cost of $3000 plus transportation costs if needed. The motion will be brought before the membership for pre-approval.* **September Board Meeting – Motion "On Hold" Jim has solicited firm quote specific to our 16" telescope to know exactly what the upgrade will include. Board has decided to delay sending motion to general membership until firm quote can be received and reviewed**
10. Other Committee Reports: If needed
MSRAL 2022: A. SLSC Business: a. First Friday actions – There will be telescope viewing for people to go to the planetarium show and have tickets. The last Solar Sunday is this Sunday Sep 4th b. Other immediate business **Action: Invite Will Snyder to monthly SLAS Board Meeting**
B. SLCL Business a. Annual contract – b. Upcoming events -
C. Jefferson College Business: a. Committee Meeting report: JC capital funding for buying telescopes and/or equipment for Observatory. b. Upcoming Outreach Event: September 4th
D. Library Telescope Committee a. Budget – $300, balance $300 b. Upcoming builds or maintenance events c. Maintenance budget - $100 d. Mileage re-imbursement – see above e. Promotional materials - $200
E. SLAS Social Events a. Budget - $300, balance $45 b. Homemade Fest - $100 budget, balance $40 c. Star-B-Q - $200 budget, balance $5 d. Promoting Dobson-Fest event on Sep 17th
Other
F. SLAS Brochures a. Budget $200, , balance $144 b. Quarter cards –

(Continued on page 9)

St. Louis Astronomical Society
Profit & Loss Budget vs. Actual
January through September 2022

	Jan - Sep 22	Budget	$ Over Bud...
Ordinary Income/Expense			
Income			
Events Income	2,341.46		2,341.46
Magazine Subscription	2,287.55	2,878.45	(590.90)
Membership Dues	4,105.00	4,290.00	(185.00)
Merchandise Sales		585.00	(585.00)
Total Income	8,734.01	7,753.45	980.56
Cost of Goods Sold			
Magazine Subscriptions	2,228.55	2,878.45	(649.90)
Total COGS	2,228.55	2,878.45	(649.90)
Gross Profit	6,505.46	4,875.00	1,630.46
Expense			
1-Programs & Events	1,578.83	2,515.00	(936.17)
2-Newsletter	333.93	450.00	(116.07)
3-Library expense	65.00	375.00	(310.00)
4-Astronomical League D...	1,105.00	945.00	160.00
6-Brochures	56.35	450.00	(393.65)
7-Insurance	1,049.50	1,050.00	(0.50)
8-Website	275.27	640.00	(364.73)
9-Administrative Expenses	496.74	2,889.10	(2,392.36)
Total Expense	4,960.62	9,314.10	(4,353.48)
Net Ordinary Income	1,544.84	(4,439.10)	5,983.94
Other Income/Expense			
Other Income			
Donations	852.45		852.45
Interest Income	18.54	36.00	(17.46)
LTP Receipts	3,013.66		3,013.66
Non-Operating Income	1,749.46		
Proceeds from Lens Sales	2,151.96		
Total Other Income	7,786.07	36.00	7,750.07
Net Other Income	7,786.07	36.00	7,750.07
Net Income	**9,330.91**	**(4,403.10)**	**13,734.01**

St. Louis Astronomical Society
Balance Sheet
As of September 30, 2022

	Dec 31, 21	Sep 30, 22
ASSETS		
Current Assets		
Checking/Savings		
Checking - First Bank	7,447.09	15,560.09
Deposit, Certificate of	15,952.97	15,968.44
Library Telescope Escrow	797.00	2,391.92
PayPal	705.80	1,817.15
Savings - First Bank	41,149.86	41,152.93
Total Checking/Savings	66,052.72	76,890.53
Other Current Assets		
Inventory Asset	675.61	675.61
Investment in Mid-States 2...	2,000.00	0.00
Total Other Current Assets	2,675.61	675.61
Total Current Assets	68,728.33	77,566.14
Fixed Assets	15,783.04	15,506.14
TOTAL ASSETS	**84,511.37**	**93,072.28**
LIABILITIES & EQUITY		
Liabilities		
Current Liabilities		
Accounts Payable	770.00	0.00
Total Current Liabilities	770.00	0.00
Total Liabilities	770.00	0.00
Equity		
Opening Bal Equity	8,497.66	8,497.66
Retained Earnings	74,279.95	75,243.71
Net Income	963.76	9,330.91
Total Equity	83,741.37	93,072.28
TOTAL LIABILITIES & EQUITY	**84,511.37**	**93,072.28**

(Continued from page 8)

G. Loaner scope Program a. Budget - $100, balance $100 b. New donations: Donated by Brooke Myers 80mm Sky Watcher ED 600mm Refractor w/diagonal, finder and metal case, EQ head mount w/o tripod, Telerad and 2 boxes of books Nikon 10x50 and 10x30 binoculars c. Replacement Parts for the LPTs d. Items for sale **several:** Sale for $900 to PayPal for telescopes sold has been corrected **Action: Jim put remaining telescope items for sale in Aug and Sep newsletter. Items for sale: 8" Dob and Meade ETX-90**
H. SLAS Library a. Budget - $500, balance $435 b. Other –
I. Merchandise New coffee mug design (JCO logo, SLAS Logo) - www.startorialist.com We used Discountmugs.com in 2018**Action: Anyone can go take Astro-photo of the JCO for the coffee mug and submit before September Board meeting Action: Mark send email to members to ask for Astro-photos to put on coffee cup**
J. Telescope Making K. Newsletter a. Budget $600, balance $266 **L. Website** - a. Budget $750, balance $475 **M. Social Networking N. Night Sky Network O. SLASdialogs P. Dark Site Q. Observing Programs R. Star Parties Donation: None for this month 11. Closing Activities** Motion to adjourn the meeting by Larry, second by Randy, meeting adjourned at 9:58pm.

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 All meetings are on First Thursdays unless noted. ***Note: Board meetings will be via Zoom until further notice.*** Dates for 2022: Oct 6, Nov 3, Dec 1

SLAS Dark Sky Observing Dates Oct 22, Nov 26, Dec 17

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

Aim for the Stars Public events held on 1st Sundays at the Jefferson College Observatory and Patio.
Nov 6, Dec 4

Stargazing at the Arch Events for the public held at the Gateway Arch
See you next year!

Sky Orienteering Events For members who want to gather and do some relaxed observing at Babler State Park (BSP) or at the Jefferson College Observatory (JCO) Please RSVP if you plan to come!
Nov 6 (JC)),

SLSC Public Telescope Viewing Events: These events are held the first Friday of the month Planetarium shows start at 7pm
On hold until further notice due to Covid 19

Pattonville Observatory Public Viewing Dates 2022-2023: 10/7, 10/14, 11/4, 11/11, 12/2, 12/9, 1/6, 1/27, 2/10, 2/24, 3/10, 3/31, 4/14, 4/28, 5/5, 5/12

Broemmelsiek Astronomy Park Public Viewing
Every Friday

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

September

October

1 Sat	Girl Scout Round Up Camp Cedarledge
1 Sat	International Observe the Moon Night
1 Sat	Camp Vandeventer - Boy Scouts
2 Sun	Aim for the Stars JCO
3 Mon	Cub Scout Pack 778 Meeting
4 Tue	Manchester Parks - Fussner Field
5 Wed	Mascoutah Public Library
5 Wed	Francis Park Stargazing
6 Thur	SLAS Board Meeting
6 Thur	Belleville Public Library
8 Sat	Stargazing at the Arch
14 Fri	Riverside Stargazing
17 Mon	Jamestown Bluffs
19 Wed	Oak Bend Library
20 Thur	JCO Auction Winner (Priv)
21 Fri	SLAS Regular Meeting
27 Thur	Jefferson County Library
29 Sat	Girl Scouts

November

1 Tue	Lewis and Clark Library
2 Wed	Richmond Heights Library
3 Thur	SLAS Board Meeting
3 Thur	Scott AFB Star Party

For other events, watch the calendar on the website. Virtual stargazing events and other online activities will be registered there. We hope you can join us for some of these activities!

SLAS Merchandise Available

SLAS merchandise is now set up for embroidery at **Headz n Threadz at www.headznthreadz.com**

There is now only one location:
1065 Regency Parkway, St. Charles MO 63303
Telephone: 314.528-8100
sales@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 www.Infini-tees.com

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 @ $43.95 / 1 year $_____

(S&T may also be renewed at their website: http://www.skyandtelescope.com)

Astronomy @ $34.00 / 1 year $_____

TOTAL ENCLOSED **$_____**

Check all that apply:

___ Renewal
___ Address Change Only
___ Please send my newsletter by regular mail
___ ***New Member!***

SLAS OFFICERS

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

Vice President ***Bradley R Waller*** 314-481-7250
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Secretary ***Mark Jones*** 636-394-2342
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Treasurer ***Bill Winningham, (Don Ficken - membership)***
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Hospitality ***Larry Campbell*** 636-244-2867
hospitality at slasonline.org

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board23 at slasonline.org

Brent Buch 314-239-0329
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Randy Harrison 618-267-1659
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ALCOR ***Bill Winningham*** 636-357-2763
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Devoted to the Interest and Advancement of the Science of Astronomy

ST. LOUIS ASTRONOMICAL SOCIETY

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

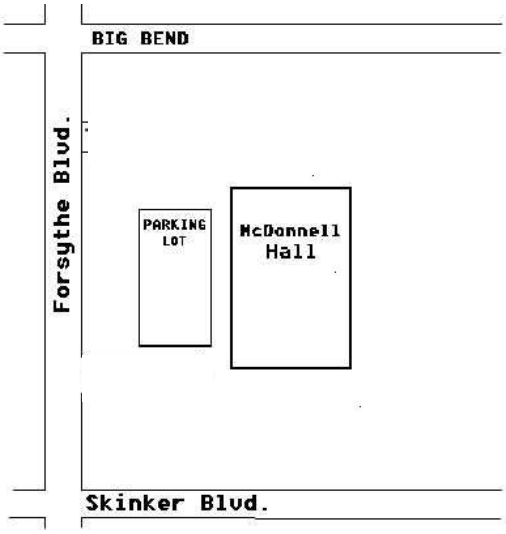
Follow us on
Twitter: @stlastro
Facebook: @stlastro

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
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