

THE EVENT HORIZON



ST. LOUIS ASTRONOMICAL SOCIETY

Devoted to the Interest and Advancement of the Science of Astronomy

**VOLUME 28, Issue 10
October, 2018**

Asteroids Ceres and Vesta Up Close: the Dawn Spacecraft Mission by Xiaochen Mao Washington University

Xiaochen Mao of Washington University will be featured at the October meeting of the St. Louis Astronomical Society. The meeting will begin at 7:30 PM on Friday, October 19, in McDonnell Hall, Room 162, on the Washington University campus.

Asteroids are small bodies of rock and metal that orbit the Sun. Most lie between the orbits of Mars and Jupiter, but some have elliptical paths that can cross Earth's orbit. At 583 miles across, the largest asteroid, Ceres, was discovered in 1801. The second largest, Vesta was found six years later. Although they lie in the same region of our solar system, Ceres and Vesta are quite different. Ground-based telescopes reveal few surface and composition details. NASA's Dawn

robot spacecraft, launched in 2007, provided the first close-up views. First it traveled to Vesta, where it orbited the asteroid in 2011 and 2012. Then it moved on to Ceres, arriving in March 2015. It is now concluding its Ceres observations. Xiaochen Mao will present a brief history of the discovery of Vesta and Ceres, comment on the scientific merit of the Dawn Mission, and, discuss some of the major discoveries made by Dawn's telescopes and instruments.

Xiaochen Mao is a fifth-year graduate student in the Department of Earth and Planetary Sciences at Washington University. His work focuses on Ceres' internal structure, revealed by modeling from its gravity field, and Ceres' spin evolution, deduced from its cratering record.

Upcoming Meetings: 2018

November Brad Joliff, PhD Washington University Lunar Geology

December Pamela Gay, PhD ASP Secret Squirrel Part 2

Mid States Region



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November Meeting Lunar Geology by Brad Joliff, PhD Washington University Friday, November 16, 7:30pm

Join us as Dr. Joliff gives us the latest on Lunar Geology! We will also present the budget for 2019 at the meeting. There will also be some exciting news about cooperating with local colleges about an observatory to be built on the campus of Jefferson College.

Mark Your Calendars Now! Homemade Fest Saturday, February 16 5-10 pm Kirkwood Community Center Kirkwood Park

See Mark Jones if you wish to make a presentation!

Presidents Corner by Jim Small

SLAS members had a terrific time at the St. Louis Air Show this year. It was a two day event and well attended by SLAS volunteers. Thanks to all for volunteering for it and thanks to Don Ficken for organizing the event! Besides the airplanes, the most popular item at the booth were the meteorites loaned for display to us by Mike Reynolds. They were spectacular and HUGE. Thanks so much to Mike.

It's star party season as schools are back and we have tons of star parties in October and November. Included among these are some STEM and STEAM type events that involve an information table. We need volunteers for all these events so check Night Sky Network to make sure you're signed up to help us out!

Speaking of schools, the number of school events is increasing and we could really use a person to coordinate just school events for us. Bill Breeden currently does all of our coordinating except for library star parties which are taken care of by Don Ficken. We could really use someone to coordinate school events like Don does for library events. If you are interested, see myself, Don or Bill.

The Annual SLAS Star B Q was held on Saturday, September 29th! Mark Jones prepared the food and the annual quiz, a different format this time! It was tough and Larry Campbell was the winner! He gets the privilege of creating next years quiz. A good time was had by all!

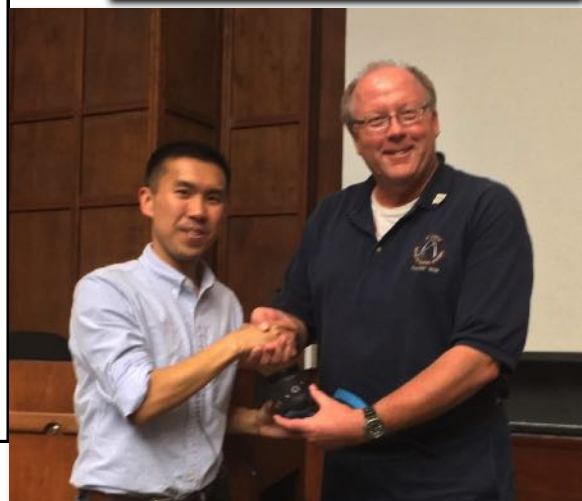
Homemade Fest was booked last week for February 16th, the day after our February meeting. We look forward

to learning about new items and ideas you might have about astronomy. Think about making a presentation of any aspect of astronomy you are interested in. It could be a new software package or app you are using, piece of equipment you bought or designed.... we would like to hear about it!

The budget will be sent out with the next newsletter. It will be voted upon at the November board meeting. We will do a presentation and discussion of the budget at the November meeting. The membership will vote on it at the December meeting. New items in the budget will include purchase of more globes for displays at school and other large events where we have tables. We will also include funds to help out with big shows such as the air show which will feature the Blue Angels on September 7-8.

We will also be looking into helping with the Jefferson College Observatory which is in the planning stage. It is possible that SLAS may have access to an observatory at that location. We will keep you posted.

Bradley has put together a quality line up for speakers for 2019 and is even starting to look at 2020 already. The 2019 lineup will be published beginning with the November newsletter.



NCRAL 2019 Annual Convention
Presented by the **Popular Astronomy Club**
Astronomical Voyages of Discovery:
Past, Present and Future
May 3 – 4, 2019

Convention Location: Stoney Creek Hotel & Conference Center 101 18th St.,
Moline, IL 61265

To be the first to know as plans are finalized, please send your name, club affiliation, and email address to: 2019NCRALinfo@gmail.com



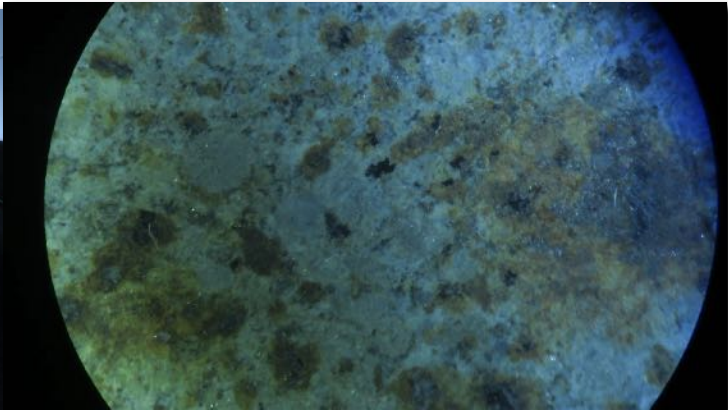
Above: Gemini, Taurus and the Pleiades along with M35 and a comet passing through.

Left: Folks enjoying the StarBQ

Below: Setting up to observe at Babler Park in the Walnut Grove area after the StarBQ

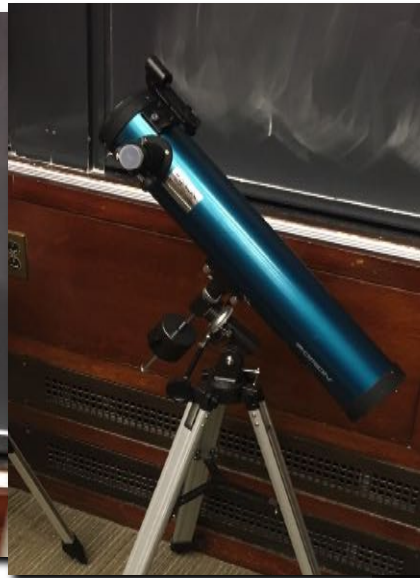
Bottom: SLAS members set up at the Air Show at Spirit of St. Louis Airport



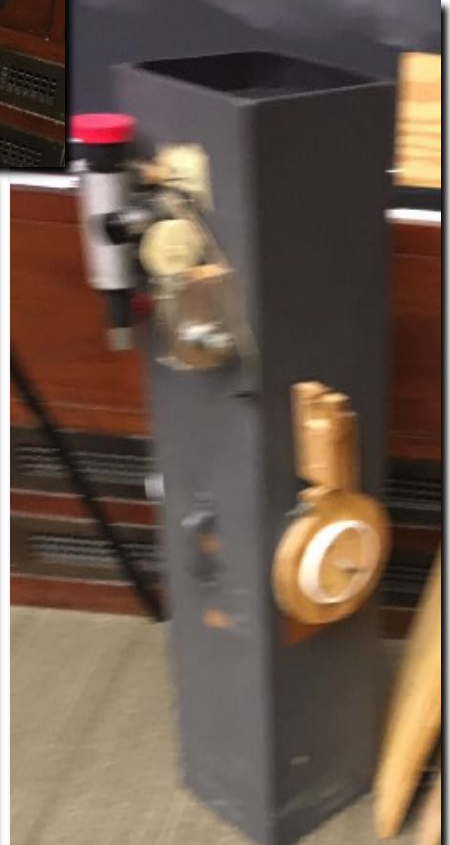


Top left: Mark Jones talks meteorites with patrons at the Air Show.
Top right: Close up through a stereomicroscope of a meteorite.
Above: Large meteorite collection. Dr. Mike Reynolds was kind enough to loan us some of his prized collection! Some of them were REALLY heavy!
Left: Mark Jones at the Pattonville Observatory taking a look as a thin crescent Venus sets.
Below: Photo of Venus through the 10" Meade SCT just before it set.





These photos represent telescopes that were donated to SLAS that were sold at the October meeting to provide interested parties with a telescope. The sale resulted in \$120 to be put toward the loaner scope program and new homes for telescopes. Watch for more periodic sales in the future.



SLAS Executive Board Meeting Minutes September 6, 2018

1. Opening Activities: Attending: Larry Campbell, Rich Heuermann, Jim Small, Bradley Waller, Brent Buch, Mark Jones, Bill Winningham. Guests: Danny Maloney, Nick Morgan **Meeting started at 7:40pm** August minutes distributed before meeting. Motion to approve by Larry C second by Jim S. Minutes were approved with changes.

2. External Business Next board meeting: Oct 4, Nov 1, Dec 6 Board meetings are at Nicoletti's Restaurant in Valley Park

3. Director Reports: President – Jim Small: The following motion was approved by the Board at the August Board meeting and will be presented to the general membership at the next SLAS meeting. Jim will publish in Sep newsletter. Motion was tabled at the last meeting: I propose that SLAS invest with member approval \$166 +Shipping (about \$16.17) to purchase a second table cover and new Banner for use at outreach events (OR \$144 each plus 16.17 shipping for two covers and banners). Multiple events on the same day deems it necessary to have duplicate materials. New SLAS mugs arrived -Item security, 3 geology samples passed around at August meeting by our guest speaker went missing immediately after the meeting ended

Vice President: Bradley R Waller

SLAS Monthly Meetings

Presentations 2018

21-Sep-2018 Francesc Ferrer, PhD Gravitational Waves from Black Hole Mergers: Did LIGO Detect Dark Matter? Wash U

19-Oct-2018 Mao Xiaochen The Dawn Mission: Vesta and Ceres Wash U

16-Nov-2018 Brad Jolliff, PhD Lunar Geology Wash U

21-Dec-2018 Pamela Gay, PhD Super-Secret Squirrel Stuff...Again :) ASP: Astronomical Society of the Pacific

Presentations 2019

18-Jan-2019 Erika Gibb, PhD Comets UMSL

15-Feb-2019 K Michael Malolepszy The Year in Planetary Exploration SLAS

15-Mar-2019 Bruce Stinchcomb, PhD Meteorites Flo-Valley

19-Apr-2019 Bob King Astro Bob

17-May-2019 Craig O'Mara Flying SOFIA NASA

21-Jun-2019 Josiah Lewis, PhD Presolar Grains: Solids from Other Stars Studied in the Lab Wash U

19-Jul-2019 Ryan Clegg-Watkins, PhD Exploring the Moon from Orbit: Paving the Way for Future Astronaut Explorers Wash U

16-Aug-2019 Angela Speck, PhD 2019 Solar Eclipse Results Mizzou

20-Sep-2019 Don Hampton, PhD Aurora Borealis & Steve UAF University of Alaska: Fairbanks

15-Nov-2019 Claire Chandler, PhD Super-Earths and the Formation of the Solar System NRAO

20-Dec-2019 Duncan Lorimer, PhD Fast Radio Bursts: "Lorimer Bursts" UWVA University of West Virginia

Skype Event NRAO: National Radio Astronomy Observatory UAF:

***Astro 101:** Jim Small will present java applets from Univ of Nebraska on stellar motion Other ideas are: spotlight an object, fundamentals such as sky coordinates, telescope operation, and spectroscopy ***Welcome Aboard Meetings** for new members are still planned for each month.

Secretary – Mark Jones: Public Facebook page is growing with about 800 people reached each month.

Treasurer/ALCor – Bill Winningham: Board discussion of concerns raised by Cook Feldman in a recent email, responses were reviewed and Bill will send to Cook. Letter for Pat Tocco. Bi-annual corporate filing was done in August cost \$20 Bill had a lot of transactions this month. Library telescope invoices were a big portion of that. Donations YTD \$1329 through end of August Had S&T subscription issue due to club's debit card for 2 members. S&T was automatically renewing subscription. Bill has corrected issue Time to start working on 2019 Budget timeline. 2019 Budget timeline. -First 2019 budget meeting Sunday Sep 30 at 4pm @ Young's Restaurant Other meetings as necessary to reach Board consensus on 2019 Budget and narrative -Draft 2019 budget approved by Board at November Exec Board meeting -Publish Board approved Budget in Nov newsletter -Present Budget to General Membership at November meeting, open discussion -Publish Budget in Dec newsletter -Vote of Budget by General membership at December meeting -Publish membership approved Budget in Jan newsletter

Hospitality – Larry Campbell: Hospitality - our cookie supply was missing from the cart after the August meeting. We will buy limited amounts for each meeting in the future to limit any leftovers that need to be stored till the next meeting.

Membership recognition – Membership Recognition - Bill and Rita Breeden picked up their certificates and pins at the Aug meeting.

Board member at large reports

Rich Heuermann (2019) Rich has created and sent out the September meeting press release to local media. Trout lodge escrow, Rich will meet with program coordinators and propose repairs and improvements to existing three telescopes

Tom Nickelson: (2020) No report

Brent Buch (2021) Brent has fixed the video link on the website. Confirmed the html5 viewer is working. Next task to upload content Goal to get some of 2018 meeting videos on website by November meeting.

4. Committee Reports: If needed

Membership – Our current membership count is 182 members. The good news is that the count is five members over the 177 reported last year at this time and three fewer members than the 185 count reported for the start of this year. The bad news is that we are trending a high member loss rate which has already exceeded that of last year.

Newsletter – Will add statements and articles about the motions from today's meeting and an announcement regarding the missing rock samples. Articles and pictures (especially pictures) are welcome to be put up the newsletter and our social media outlets. Please forward to newsletter@slasonline.org

Loaner – Scopes We have a surplus of donated telescopes. We need to schedule a sale at a future SLAS meeting

Star Parties- August 11 Perseid Event at Jefferson College. See report for list. Check NSN for upcoming events

5. Old Business None

6. New Business Request from Don Ficken. In the next few days, Bob Brazzle is planning to submit a "Capital Request" to Jefferson College as part of the annual planning process. It would greatly strengthen his capital request if we could have the SLAS Board approve the following (or something similar in spirit): -Don Ficken submitted the following motion: "Upon approval of Jefferson College to build a functional observatory on the college campus, the St. Louis Astronomical Society agrees to assist the college to equip the observatory with one or more telescopes and supporting equipment as agreed to by both parties." Second by Rich H. Motion approved by Board

7. Closing Activities Motion to adjourn Mark J, second by Brent B, meeting adjourned at 9:17pm

8:29 PM
10/15/18
Accrual Basis

**St. Louis Astronomical Society
Profit & Loss Budget vs. Actual
January through September 2018**

	<u>Jan - Sep 18</u>	<u>Budget</u>	<u>\$ Over Budget</u>
Ordinary Income/Expense			
Income			
Total Magazine Subscription	1,389.00	1,401.25	(31.35)
Membership Dues	3,300.00	3,470.00	(170.00)
Total Income	4,689.00	4,871.25	(201.35)
Cost of Goods Sold			
Total Magazine Subscriptions	1,378.85	1,401.25	(22.40)
Merchandise			
Inventory Adjustment	(69.35)	0.00	(69.35)
Merchandise - Other	208.67	45.00	163.67
Total Merchandise	139.32	45.00	94.32
Total COGS	1,518.17	1,446.25	71.92
Gross Profit	3,151.73	3,425.00	(273.27)
Expense			
1-Programs & Events	1,162.00	1,737.00	(575.00)
2-Newsletter (postage)	130.00	132.00	(2.00)
3-Library expense	248.40	225.00	23.40
4-Astronomical League Dues	825.00	760.00	65.00
5-Loaner Scopes	512.14	800.00	(87.86)
7-Insurance	825.00	825.00	
8-Website	288.37	170.00	118.37
9-Administrative Expenses	415.44	1,244.00	(828.56)
Total Expense	4,406.35	5,063.00	(1,286.65)
Net Ordinary Income	(1,254.62)	(2,268.00)	1,013.38
Other Income/Expense			
Other Income			
Total Donations	1,804.50	0.00	1,804.50
Interest Income	83.34	75.00	8.34
LTP Receipts	4,714.98	0.00	4,714.98
Proceeds from Lens Sales	1,803.29	0.00	1,803.29
Total Other Income	8,206.09	75.00	8,131.09
Other Expense			
LTP Disbursements	4,755.71	0.00	4,755.71
LTP Escrow Funding	500.00	500.00	0.00
Total Other Expense	5,255.71	500.00	4,755.71
Net Other Income	2,950.38	(425.00)	3,375.38
Net Income	1,695.76	(2,693.00)	4,388.76

**St. Louis Astronomical Society
Balance Sheet
As of September 30, 2018**

	<u>Dec 31, 17</u>	<u>Sep 30, 18</u>
ASSETS		
Current Assets		
Checking/Savings		
Checking - First Bank	5,162.74	7,330.28
Deposit, Certificate of	20,188.79	20,219.02
Library Telescope Escrow*	299.98	95.94
PayPal	563.55	401.79
Savings - First Bank	46,297.03	46,350.14
YMCA Trout Lodge Escrow	482.87	482.87
Total Checking/Savings	72,994.96	74,880.04
Other Current Assets		
Inventory Asset	511.28	371.96
Undeposited Funds	50.00	0.00
Total Other Current Assets	561.28	371.96
Total Current Assets	73,556.24	75,252.00
Total Fixed Assets	0.00	0.00
TOTAL ASSETS	73,556.24	75,252.00
LIABILITIES & EQUITY		
Equity		
Opening Bal Equity	8,137.66	8,137.66
Retained Earnings	54,813.50	65,418.58
Net Income	10,605.08	1,695.76
Total Equity	73,556.24	75,252.00
TOTAL LIABILITIES & EQUITY	73,556.24	75,252.00

* Note that there are \$108 in Library Telescope funds in the Paypal account awaiting transfer as of September 30. Following the transfer from Paypal the LTP Escrow has a positive balance of approximately \$200.

We could use articles for the newsletter. The following topics are fine for submission.

- 1. Star party reports. Let us know how a star party you attended went! Photos would be most welcome in addition to the article.**
- 2. Observing reports. Actually made it out observing? Let us know how it went. Taken some astro photos? Please submit!**
- 3. Bought something or built something? How about a review or an article!**

Send to newsletter@slasonline.org

Upcoming Star Parties and Other Events

For details on these and other upcoming events, check out the Night Sky Network Calendar linked on the Home Page for SLAS at <http://www.slasonline.org>

SLAS Executive Board Meetings *Location will be at Nicoletti's Restaurant in Valley Park* All meetings are on First Thursdays unless noted.

2018: Nov 1, Dec 6

Dark Sky Observing Dates

October 6, November 3

Francis Park Events: These events are on Wednesdays of the week nearest the first quarter Moon
October 17

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

10-5, 11-2, 12-7

Pattonville Observatory Public Viewing Dates

11-9, 11-30, 12-7, 12-14, 1-11, 1-25, 2-8, 2-22, 3-8, 3-22, 4-12, 4-26, 5-10, 5-24

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

October

17 Wed	Francis Park
18 Thur	Grand Glaize Library
18 Thur	Glen Carbon Library
19 Fri	SLAS Regular Meeting
20 Sat	Sidewalk Solar Observing
20 Sat	Stargazing at the Arch
22 Mon	Grant's View Library
23 Tue	St. Charles Library
24 Wed	Jamestown Bluffs Library
27 Sat	Night Skies Over Babler
28 Sun	SLAS Sky Orienteering
30 Tue	Prairie Commons Bluffs Library

November

1 Thur	SLAS Board Meeting
2 Fri	SLSC Public Telescope Viewing
3 Sat	SLAS Dark Sky Observing
8 Thur	Soulard School Stargazing
9 Fri	Blackburn Park
10 Sat	STEAM Fair -Youth and Family Center
10 Sat	Stargazing - Jefferson College
12 Mon	Girl Scout Troop 3519
13 Tue	Bridgeton Trails Library
13 Tue	St. Charles Library
14 Wed	Machaek Library
14 Wed	Scott AFB Library Telescope
15 Thur	Scott AFB Library Telescope
15 Thur	Daniel Boone Library
16 Fri	SLAS Regular Meeting
19 Mon	Central Library
20 Tue	Headquarters Library
27 Tue	Pathways Through Nature

December

2 Sun	SLAS Sky Orienteering
6 Thur	SLAS Board Meeting

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 _____

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 @ \$29.95 / 1 year \$ _____
TOTAL ENCLOSED \$ _____

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

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)	636-357-2763
treasurer at slasonline.org		
Hospitality	Larry Campbell	636-244-2867
hospitality at slasonline.org		
Board Members at Large:		
	Rich Heuermann	314-962-9231
Board19 at slasonline.org		
	Brent Buch	314-239-0329
Board21 at slasonline.org		
	Tom Nickelson	314-346-9565
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 slasonline.org		
Merchandise	Vacant	
merchandise at slasonline.org		
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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 Breden	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

Devoted to the Interest and Advancement of the Science of Astronomy

ST. LOUIS ASTRONOMICAL SOCIETY

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

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Facebook: @stlastro

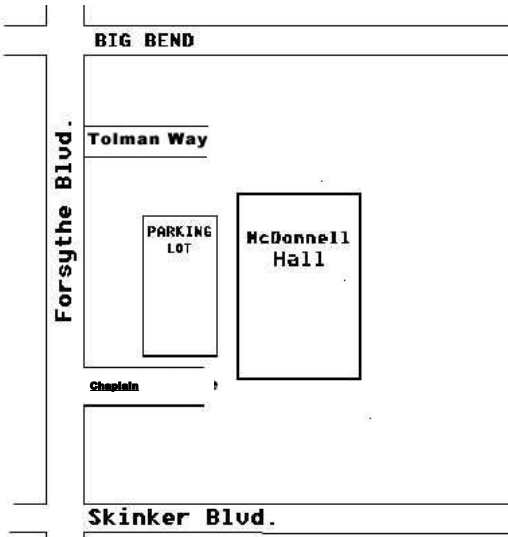


Who We Are and What We Do

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 anyone with an interest in astronomy.

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

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



St. Louis Astronomical Society
Jim Small
13128 Cozyhill Drive
St. Louis, MO 63122

