

THE EVENT HORIZON



ST. LOUIS ASTRONOMICAL SOCIETY

Devoted to the Interest and Advancement of the Science of Astronomy

**VOLUME 28, Issue 3
March, 2018**

The Origin of the Moon by Dr. Kun Wang Washington University

Dr. Kun Wang of Washington University will be featured at the March meeting of the St. Louis Astronomical Society. The meeting will begin at 7:30 PM Friday, March 16, in McDonnell Hall, Room 162, on the Washington University campus, Saint Louis, MO 63130. McDonnell Hall is accessible from Forsyth Boulevard via Tolman Way.

Where did the Moon come from? Its origin has always intrigued humankind. Many myths and theories have emerged throughout history, but only in the last fifty years has it been possible to test modern theories. Lunar samples returned by NASA's Apollo astronauts support the "Giant Impact" theory over other explanations. This theory proposes that the Moon was formed from the debris that resulted from a violent collision between the very young Earth and a Mars-sized object. In the past decade, however, ultra-high precision moonrock analyses have seemed to contradict some of the provisions of this theory. To resolve this, in addition to continued sample testing, new perspectives on the lunar origin theory may need to be devised. Dr. Wang will discuss his research on this problem and describe

some of the advanced analytical equipment he uses in his laboratory.

Dr. Kun Wang is an Assistant Professor in the Department of Earth and Planetary Sciences at Washington University. He received his Doctorate from Washington University in 2013 and then was awarded a post-graduate fellowship position at Harvard University. He joined the Washington University faculty in 2016. His research involves the study of the chemical composition of meteorites to understand the initial physical and chemical conditions during the formation and earliest years of the solar system.

Upcoming Meetings: 2018

- April** Michael Medford, UC Berkeley
Discovering Planet 9 (10) (Zoom event) New Evidence for the Origin of the Moon
- May** Ryan Clegg-Watkins, PhD, Washington Univ
Exploring the Moon from Orbit: Paving the Way for Future Astronaut Explorers
- June** Eddie Schlafly, UC Berkeley Big Bang (Zoom)
- July** Erika Gibb, PhD, UMSL Comets
- August** Michael Bouchard, Washington University
Mars 2020 Rover
- September** Francesc Ferrer, PhD, Washington U.
In the wake of the Higgs, what will the next breakthrough at the LHC?
- October** Mao Xiaochen Washington University
The Dawn Mission: Vesta and Ceres
- November** Bard Joliff, PhD Washington University
Lunar Geology
- December** Pamela Gay, PhD ASP
Secret Squirrel Part 2



Inside This Issue

- President's Corner, Gallery **2**
- Gallery **3**
- Gallery **4**
- For Sale **5**
- Board Minutes **6**
- Financials **7**
- Events **8**

**Commemorative
Total Solar Eclipse
SLAS mugs are HERE!
For Sale @ \$10 each!
Get a whole set!
Available at the meeting!**



Presidents Corner by Jim Small

First off, on behalf of SLAS let me offer my condolences to Don Ficken and Bruce Logan, both of whom lost their mother in the past week. If we can do anything to help, please let us know.

MSRAL registration is up at the website www.msral.org

Be sure to register early to avoid the \$10 late fee!

David Levy will be the keynote speaker and the event will be held at Explore Scientific in Springdale, AK. Sugar Creek Astronomical Society is the host. Hope to see you there!

ALCON this summer is in Minneapolis and registration is available for that conference as well, from this link at the AL website. <https://alcon2018.astroleague.org/registration/> I'll see you at that meeting, too! It looks like their observatory would be a great place to visit from the introductory video!

The Total Solar Eclipse mugs are IN! Be sure to bring plenty of cash to the meeting so you can pick up a mug for your very own! Do your holiday shopping early! Get a whole set of mugs for yourself!

Homemade Fest went very well, with some nice presentations, some of which may be presented down the road as Astro 101 presentations. We already have one presenter for next years event, so keep the day after the February meeting reserved on your calendar!

I know it's dark sky weekend, but we have an event at Kirkwood Park Saturday night that could use some volunteers. Kirkwood parks are generous enough to supply us with the room for free for Homemade Fest in exchange for these events, so hopefully we can convince someone who is not heading for a dark site to bring out a scope!

Last months meeting was great and this one looks to be just as good. New information about the origin of the Moon will be presented, so make sure you get there for this meeting. See you then!



Far Left: Venus and Mercury from the Pattonville Observatory on Pi day.
Left: Mark Jones, Bill Neubert and Bill Winningham pass out NSN Certificates, red flashlights, and NSN pins in recognition of outreach.
Below Left: Dr. Ryan Ogliore presents a great talk on star dust to a nice crowd on hand.
Below: Dr Ogliore showing off a bottle of Elysian Space Dust IPA! How appropriate for this talk!





Above: some of our NSN Outreach award recipients: Mark Jones, Jim Small, Cook Feldman, Bradley Waller, Sharon Bertram, Rick Menendez, Bill Winningham, Larry Campbell, Ray Mueller, Bill Neubert, John Beaury, and Rich Heuermann

Below: Presentations, food and door prizes were the gist of the evening at Homemade Fest this year.

Thanks to the presenters and the attendees and thanks for bringing all the great food!





Upper left: Ray Mueller talks about Stellarium in the top photo and demonstrated the motion of the Moon and Earth on a hand made model while a participant provides the "sunlight" via the flashlight. The STEM event was held at Jana Elementary in Hazelwood School District.

Above: Mark Jones sets up his sand simulation of a galaxy at the STEAM event at La Salle Springs Middle School, an event we participate in every year.

Left: Top: students try making a galaxy with sand, and explore Mars and Pluto via globes.

Left: Mark Jones talks about properties of meteorites with students



For Sale

114mm Newtonian Reflector

I received a new Celestron AstroMaster telescope for Christmas which I cannot use due to physical disabilities and was wondering if any of your members would be interested in purchasing it. I am asking \$140.00 or best offer. My home number is 314-832-4861 and we live in Affton, MO.

Edward J. Olsen, MSgt, USAF, (Ret.)

FOR SALE

8" Ritchey-Cretein

8" LX200R Advanced Ritchey-Chretien Telescope with GPS and AutoStar II Hand Controller. This scope has an additional Right Angle Finder Scope. The original straight thru finder scope is included with the scope.

I have installed a rail and counterweight system on the outside of the tube for additional balance control for photography.

I have also included a Williams Optic Zenithstar SD Doublet APO STM-coated 66 mm.F5.9 scope attached to the main tube. See photos.

Also included, besides the traditional tripod spreader plate, is a base plate that has additional eyepiece holding capability, along with quick setup guide posts on the plate for correctly mounting the telescope base.

This is a very good scope and is in excellent working condition. No scratches or dings. Looks brand new. It breaks my heart to sell it but it is too heavy for me to lift as I will be 80 in February.

This package also contains the 2" steel tubular tripod, 120 volt transformer power supply for DC voltage conversion, a Meade Super Plossl 26 mm. ocular and complete manual.

I paid in the neighborhood of \$2800 not including the right angle finder, additional spreader plate and Williams Optic Scope.

Asking price is \$1200 firm. I live in Webster Groves at 311 Dobbin Rd, close to the corner of Big Bend and Rock Hill. Phone 314 968 5388.



SLAS Executive Board Meeting Minutes February 1, 2018

1. Opening Activities: Attendees: Jim Small, Rich Heuermann, Larry Campbell, Bradley Waller, Brent Buch, Mark Jones, Tom Nickelson Meeting started at 7:00pm This month's meeting held at Nicoletti's restaurant in Twin Oaks. Jan meeting minutes were distributed prior to meeting. Tom N. made motion to approve the January meeting minutes, second Rich H. Minutes were approved by Board

2. External Business Next board meeting: March 1, April 5, May 3, June 7, July 5, August 2, Sept 6, Oct 4, Nov 1, Dec 6 Board meetings will be held at Nicoletti's Restaurant in Valley Park until further notice. **MSRAL 2018** set for June 22-24 at Explore Scientific! **ALCON 2018** set for 11-14 July in Minneapolis

3. Director Reports:

- President – Jim Small: No additional report

- Vice President - Bradley Waller

16-Mar-2018	Kun Wang, PhD	
	"New Evidence for the Origin of the Moon"	Wash U
20-Apr-2018	Michael Medford	
	"Discovering Planet 9 (10)" (1)	Berkeley
18-May-18	Ryan Clegg-Watkins, PhD	"Exploring the Moon from Orbit: Paving the Way for Future Astronaut Explorers Wash U
15-Jun-2018	Edward Schlafly, PhD	
	"Mapping the Milky Way's Dust in Three Dimensions"	LBL
20-Jul-2018	Erika Gibb, PhD	
	Comets	UMSL
21-Sep-2018	Francesc Ferrer, PhD	"In the wake of the Higgs, what will the next breakthrough at the LHC?" Wash U
19-Oct-2018	Mao Xiaochen	
	"The Dawn Mission: Vesta and Ceres"	Wash U
16-Nov-2018	Michael C Bouchard	
	"Mars 2020 Rover"	Wash U
21-Dec2018	Pamela Gay, PhD	
	"Secret Squirrel Stuff #2"	ASP

1 Denotes Video Event *LBL: Lawrence Berkeley National Laboratory
*ASP: Astronomical Society of the Pacific

***Astro 101:** None for Feb 2018. NSN 2017 Award Pins presentation.

*Welcome Aboard Meetings for new members are still planned for each month

- Secretary – Mark Jones: NSN pins ordered and received, certificates ready to be printed. Brad will print certificates. We plan to hand out pins and certificates at February SLAS meeting

- Treasurer/ALCor – Bill Winningham: No report

- Hospitality – Larry Campbell: Homemade fest – Brad will be the Emcee for the event and purchase door prizes. Rich H. will bring projector and laptop. Jim will check with Kirkwood for screen and bring speakers and power strips. Brad will bring ice chest. Mark to bring coffee pots. Larry bring soda, paper goods. Jim will bring power strips.

- Membership recognition – Distribution of membership service pins continues each meeting

- Board member at large reports

- Brent Buch (2018) Brent has given to Brad USB drive with all archived SLAS videos. Jim will send January (zoom) recording to Brent. We don't have videos for the following meetings: 2017: Feb, Aug-Oct, Dec; 2016: May, July, Sept; 2015: Jan-Apr, Jun and Aug. Working with Don F. to install video share module on our web server for testing, setting up ftp account and storage for videos on server and will configure module and test after it's installed

- Rich Heuermann (2019) McDonnell Hall meeting room at Wash U has been scheduled for Feb-April 2018, next round of scheduling is in May. Rich will write up procedure for reserving room and insuring access to room each month. Need to remove our trash bags after the meeting.

- Tom Nickelson: (2020) Need new date for moving Loaner Telescope shed to Jim Small's house.

4. Committee Reports: If needed

- Library Telescope Program: Report by Don Ficken sent prior to meeting: On Saturday, February 24th, thirteen telescopes for Scenic Regional Library will be worked on by me, John Beaury, members of Eastern Missouri Dark Skies. Request from Don Ficken: Saturday, March 3rd – Four telescopes need to be

built for our next library expansion. We will do this at my garage from 9 am – 3pm. John Beaury will already have the Zoom eye-pieces and Red Dot Finders ready to go. We will just need to work on mirrors, apply stickers, and attach the camera bag. We should make short work of this. On Saturday, March 24th – From nine to thirteen telescopes from the Municipal Library Consortium will be at the University City Library ready for maintenance. Our approach will be similar to what we did for St. Louis County Library. We will do this starting around noon.

- Membership – We ended the month at 183 members which is down by two members from the beginning of the year but 26 members above January 2017. We added four new members this month including one youth member. Individual memberships of 119 members are 17 members over last year and family membership are eight members over last year. Youth members increased by one member over last year to 8 members. We are starting the year strong – let's keep it up!

- Merchandise –TSE mugs, Jim contacted mug company for quote as follows: \$314 lot charge includes set up and shipping resulting in cost of \$8.75/mug for 36 mugs. \$445 lot charge resulting in cost of \$6.14/mug for 72 mugs Motion by Brad W.

"Brad to purchase 72 solar eclipse mugs coming from Speakers Budget of which 24 mugs will be used by Speakers budget as speaker prizes. The sale proceeds to go back to speaker's budget to reimburse the purchase cost and all additional profit beyond that point goes into Merchandise Budget." Motion seconded by Tom N. Motion approved by Board

- Newsletter – Articles and pictures (especially pictures) are welcome to beef up the newsletter and our social media outlets. Please forward to newsletter@slasonline.org Discussion about redesign of brochure and what to do with them. (content, replace with cards, supplement with cards, reduce to front and back handout, etc.)

- Social Networking – need new chair to manage FB and Twitter

- Night Sky Network –Notes from NSN newsletter. NSN is holding a contest for clubs that schedule their upcoming 2018 events on the Night Sky Network calendar. All clubs that **schedule at least 10 events for 2018** will be eligible to **win one of NSN prizes**. Enter club events by February 15, 2018 to qualify. One grand prize winner club will receive a special prize, perfect for outreach: A [OneSky Telescope](#) from Astronomers Without Borders! Ten additional clubs will receive three sets of over-size [Cassini posters](#) from NASA!

- Publicity – Rich H will send out monthly Press Release this week

- Star Parties- Bill Breeden submitted report with list of upcoming star parties. Check NSN for upcoming events

5. Old Business None

6. New Business Report on Jefferson College Observatory. An email from Bob Brazzle at Jefferson College suggested that someone from SLAS should serve as "Co-Chair" with on the Jefferson College Observatory Task Force. Bob might be the other co-chair or they may decide on someone else from the college.

- Motion for the board: Motion by Don Ficken. *"The St. Louis Astronomical Society agrees to partner with Jefferson College to support an observatory on campus by providing one astronomical program per month for a period of two years. The two-year support will begin with the month an observatory on the campus of Jefferson College is opened to the public. Programs would be outdoors only. If sky conditions do not make the program possible, the program will be cancelled with no requirement to provide an alternate indoor or backup program during that month. Programs would last no more than three hours. No more than three members of the St. Louis Astronomical Society would be required to support each event. The St. Louis Astronomical Society further agrees to publicize these events on its public calendar."* Second by Tom N. Motion approved by Board Motion by Brad W. "SLAS to authorize Don Ficken to act as SLAS Co-Chair of Jefferson College Observatory Task Force" Second to motion by Tom N. Motion approved by Board

7. Closing Activities Movement to close the meeting adjourned at 9:05

7:39 AM
03/12/18
Accrual Basis

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

	<u>Jan - Feb 18</u>	<u>Budget</u>	<u>\$ Over Budget</u>
Ordinary Income/Expense			
Income			
Total Magazine Subscription	158.75	191.70	(32.95)
Membership Dues	660.00	995.00	(335.00)
Total Income	818.75	1,186.70	(367.95)
Cost of Goods Sold			
Total Magazine Subscriptions	158.75	191.70	(32.95)
Merchandise		45.00	(45.00)
Total COGS	158.75	236.70	(77.95)
Gross Profit	660.00	950.00	(290.00)
Expense			
1-Programs & Events	110.85	576.00	(465.15)
2-Newsletter		29.00	(29.00)
3-Library expense	40.00	50.00	(10.00)
8-Website	179.40	170.00	9.40
9-Administrative Expenses	6.35	275.00	(268.65)
Total Expense	336.60	1,100.00	(763.40)
Net Ordinary Income	323.40	(150.00)	473.40
Other Income/Expense			
Other Income			
Donations	120.00	0.00	120.00
Interest Income	17.67	17.00	0.67
LTP Receipts	1,774.37	0.00	1,774.37
Total Other Income	1,912.04	17.00	1,895.04
Other Expense			
LTP Disbursements	24.65	0.00	24.65
LTP Escrow Funding	500.00	500.00	
Total Other Expense	524.65	500.00	24.65
Net Other Income	1,387.39	(483.00)	1,870.39
Net Income	1,710.79	(633.00)	2,343.79

**St. Louis Astronomical Society
Balance Sheet
As of February 28, 2018**

	<u>Dec 31, 17</u>	<u>Feb 28, 18</u>
ASSETS		
Current Assets		
Checking/Savings		
Checking - First Bank	5,162.74	5,414.72
Deposit, Certificate of	20,188.79	20,198.98
Library Telescope Escrow	299.98	2,035.33
PayPal	563.55	319.34
Savings - First Bank	46,297.03	46,304.51
YMCA Trout Lodge Escrow	482.87	482.87
Total Checking/Savings	72,994.96	74,755.75
Other Current Assets		
Inventory Asset	511.28	511.28
Undeposited Funds	50.00	0.00
Total Other Current Assets	561.28	511.28
Total Current Assets	73,556.24	75,267.03
Total Fixed Assets	0.00	0.00
TOTAL ASSETS	73,556.24	75,267.03
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	1,710.79
Total Equity	73,556.24	75,267.03
TOTAL LIABILITIES & EQUITY	73,556.24	75,267.03

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

SLAS EVENTS

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 the Edward Jones YMCA* All meetings are on Thursdays unless noted.
2018: Feb 1, Mar 1, April

Dark Sky Observing Dates

See you when it gets warmer!! Use SlasDialogs or Facebook to coordinate winter events!

Francis Park Events: These events are on **Wednesdays the week nearest the first quarter Moon** See you in 2018!

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!
Feb 4, March 11

SLSC Public Telescope Viewing Events: These events are held the first Friday of the month
Planetarium shows start at 7pm
1-5, 2-2, 3-2

YMCA Edward Jones Star Parties (generally third Mondays)
Finished for the year

Pattonville Observatory Public Viewing Dates

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:

March

16 Fri	SLAS Regular Meeting
16 Fri	Messier Marathon Buford Mountain
17 Sat	SLAS Dark Sky Observing
17 Sat	Kirkwood Park Star Party
21 Wed	SLPL - Central Library Star Party
21 Wed	Natural Bridge Library
22 Thurs	Cliff Cave Library
26 Mon	SLCL Headquarters Library
27 Tue	Wild Horse Elementary STEAM
27 Tue	Hampton Midtown Kiwanis Meeting
28 Wed	Daniel Boone Library

April

5 Thur	SLAS Board Meeting - Nicoletti's
6 Fri	SLSC Public Telescope Viewing
8 Sun	SLAS Sky Orienteering
11 Wed	Every Childs Hope
12 Thur	Manchester Parks
13 Fri	Wildwood Middle School
14 Sat	SLAS Dark Sky Observing
18 Wed	Francis Park
19 Thur	Indian Trails
20 Fri	Snores and Smore Family Campout
20 Fri	SLAS Regular Meeting
21 Sat	Astronomy Day
23 Mon	Bridgeton Trails
23 Mon	Babler Elementary
24 Tue	De Soto Public Library
26 Thur	Premier Charter School STEAM
27 Fri	Hillsboro Elem STEM
28 Sat	Stargazing at the Gateway Arch

May

3 Thur	SLAS Board meeting
4 Fri	SLSC Public Telescope Viewing

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

Delmar: 6662C Delmar Blvd St. Louis, MO 63130 Telephone: 314.863.2695

delmar@headznthreadz.com

[Delmar Map](#)

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:		
	Tom Nickelson	314-346-9565
board20 at slasonline.org		
	Rich Heuermann	314-962-9231
Board19 at slasonline.org		
	Brent Buch	314-239-0329
Board18 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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Social Media	Michelle Birch	636-373-1102
social at slasonline.org		
'SLASdialogs' Moderator	Mark Jones, Rhonda Whelan	
dialogsmoderator at yahoo.com		
Star Party Coordinator	Bill Breeden	314-276-3613
starparty at slasonline.org		
Telescope Making	Bill Davis, Jim Melka	314-469-3061
telescope at slasonline.org		

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

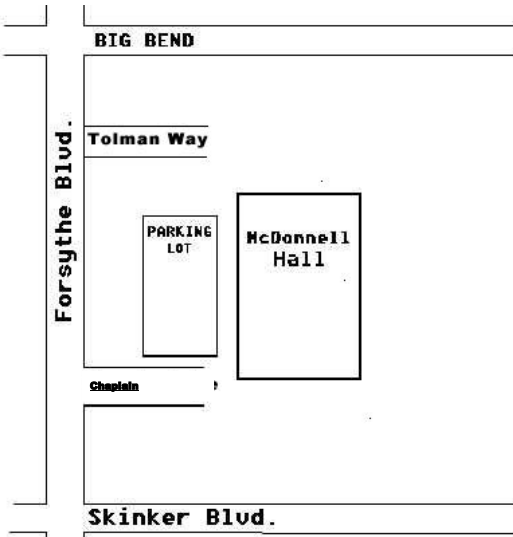


Who We Are and What We Do

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

