

# THE EVENT HORIZON



## ST. LOUIS ASTRONOMICAL SOCIETY

*Devoted to the Interest and Advancement of the Science of Astronomy*

**VOLUME 28, Issue 4  
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Mid States Region



### **The Search For Planet X – Or IX by Michael Medford Univ of California - Berkeley**

Michael Medford of the University of California, Berkeley, was featured at the April meeting of the St. Louis Astronomical Society. In January, 2017, Professor Michael Brown and Dr. Konstantin Batygin of Caltech announced their theory that a very distant, as yet undiscovered, planet may be orbiting the Sun once every 20,000 years.

Their belief was based on some unusual features in the orbits of small icy worlds located well beyond Pluto. A search for the mysterious “Planet X” is now being conducted by several teams of astronomers. If successful, a ninth (“IX” in Roman numerals) planet will be added to the known group of major Sun-circlers. Michael Medford is a member of one of the search teams and he thoroughly

explained why many astronomers believe that Planet X exists and the methods they are currently using to find it. The techniques involve looking for parts of orbits for small objects deeply buried in photographs taken by telescopes. Barely separated from the noise of the images, supercomputers are trained by programs to look for these orbits.

The meeting went well and there was a good response from the members of the audience. Mr. Medford did an excellent job of explaining and answering questions.

Michael Medford is a 3rd year Doctoral student in Astrophysics at the University of California Berkeley. He is developing a computational method for executing the largest telescopic search for Planet Nine yet attempted. He received a Bachelor of Science from Northwestern University in 2011 in both physics and theatre. He worked as a physics teacher and actor in Chicago before entering graduate school in 2014.

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### **Schedule of Speakers Set for Remainder of 2018 Meetings**

If you haven't been paying attention the last year, SLAS Vice President Bradley Waller has been busy! All of the remaining meetings for 2018 have long been booked for speakers and half of 2019 is currently booked. More on that in the next newsletter. For those who are interested in the topic for the next meeting, Here is the upcoming list. You may also find this list on the website. We look forward to seeing you at future meetings!

**May** Michael Bouchard, Washington University, Mars 2020 Rover

**June** Eddie Schlafly, UC Berkeley Big Bang (Zoom)

**July** Erika Gibb, PhD, UMSL Comets

**August** Ryan Clegg-Watkins, PhD, Washington Univ

Exploring the Moon from Orbit: Paving the Way for Future Astronaut Explorers

**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** Brad Joliff, PhD Washington University

Lunar Geology

**December** Pamela Gay, PhD ASP  
Secret Squirrel Part 2

### Presidents Corner by Jim Small

A lot has been happening around SLAS this month! April was packed with star parties as schools wind down. Libraries have been scheduling events since it's warm (well sort of) and we've managed to have a couple of great meetings the last two months.

March saw Dr. Kun Wang present us with the latest information on the formation of the Moon and Michael Medford provided us an excellent talk via Zoom from UC—Berkeley about the hunt for planet IX or X or whatever you wish to call it! Thanks to Bradley Waller for booking those events.

April is our traditional election nomination month and we have a full slate of positions that have been nominated so far. Nominations are still open should you decide you want to run (Brent WAS going to run for Vice President since Bradley already has half the year booked... He figured he would have an easy job...) You may nominate via your favorite form of communication with SLAS. The nominated slate at this time is President-Jim Small, Vice President-Bradley Wallker, Secretary-Mark Jones, Treasurer-Bill Winningham, Hospitality-Larry Campbell, and Board Member at Large-Brent Buch.

The deadline for Early Registration for ALCON is May 6. Be sure to submit if you are planning to go. I was num-

ber 172 when I registered last week. MSRAL early registration deadline is May 19. I have no info on numbers so far for that event. I am registered. Both look like they will be cool events!

We will be asking for funding for new Table Covers from Totally Promotional from the membership at the May meeting. We have a need for the additional covers, one of which will be paid for through the Library Telescope funds and the other will be new money authorized by a vote (pending approval) of the membership to replace the Library budget money that was used to order them to be able to put them into service. The amount requested will be approximately \$167. The covers will also come with free banners we can use.

We need articles. I like doing this newsletter, but I am the editor, not the reporter, writer, photographer, etc. It will help greatly if you can help to provide content for your newsletter. We need articles AND photographs in the following categories.

Star Parties: report on one and take some pics. (you can do that, you DO most likely have a cell phone.

Photos: would love to have people submit their astrophotos. Not going to beg for them, but you are submitting them everywhere but here!

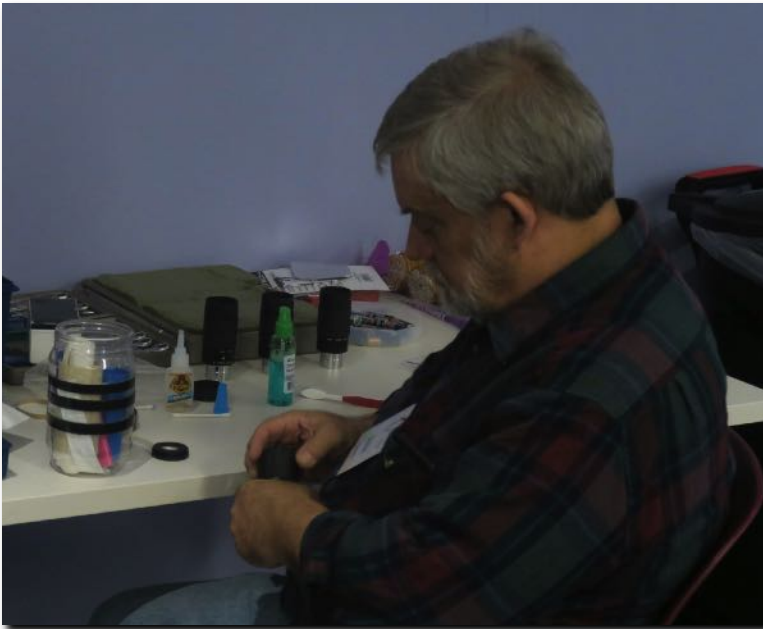
Reviews: How about your evaluation of whatever you use!

Reports on current events/science!



**Left:** Dr. Kun Wang presenting new theories on the origin of the Moon at the March meeting. **Below left:** Dr. Wang discusses his talk with SLAS members after the meeting **Below:** Mark Jones explains collimation to a Post-Dispatch reporter during a repair session.





**Upper left:** John Beaury repairs an eyepiece.

**Upper right:** Don Ficken learning collimation of a Library Telescope

**Below left:** Students observing at the East Central Observatory in Union, MO

**Below right:** The observers at ECC

**Bottom:** The sky at East Central. Sirius on the left with Orion, Taurus and the Pleiades





**Above:**

SLAS members and the setup for National Astronomy Day held April 20.

**Left and Below left:**

Visitors at the Star Party held at Fussner Field and sponsored by Manchester Parks

**Below:**

Astronomy students and visitors at Pattonville Observatory Friday, April 27. Astronomy students in Pattonville Teacher of the Year finalist Amy Schwendeman's astronomy class are required to attend 2 observatory events. One of the visitors below works in aerospace at an assembly plant in St. Charles

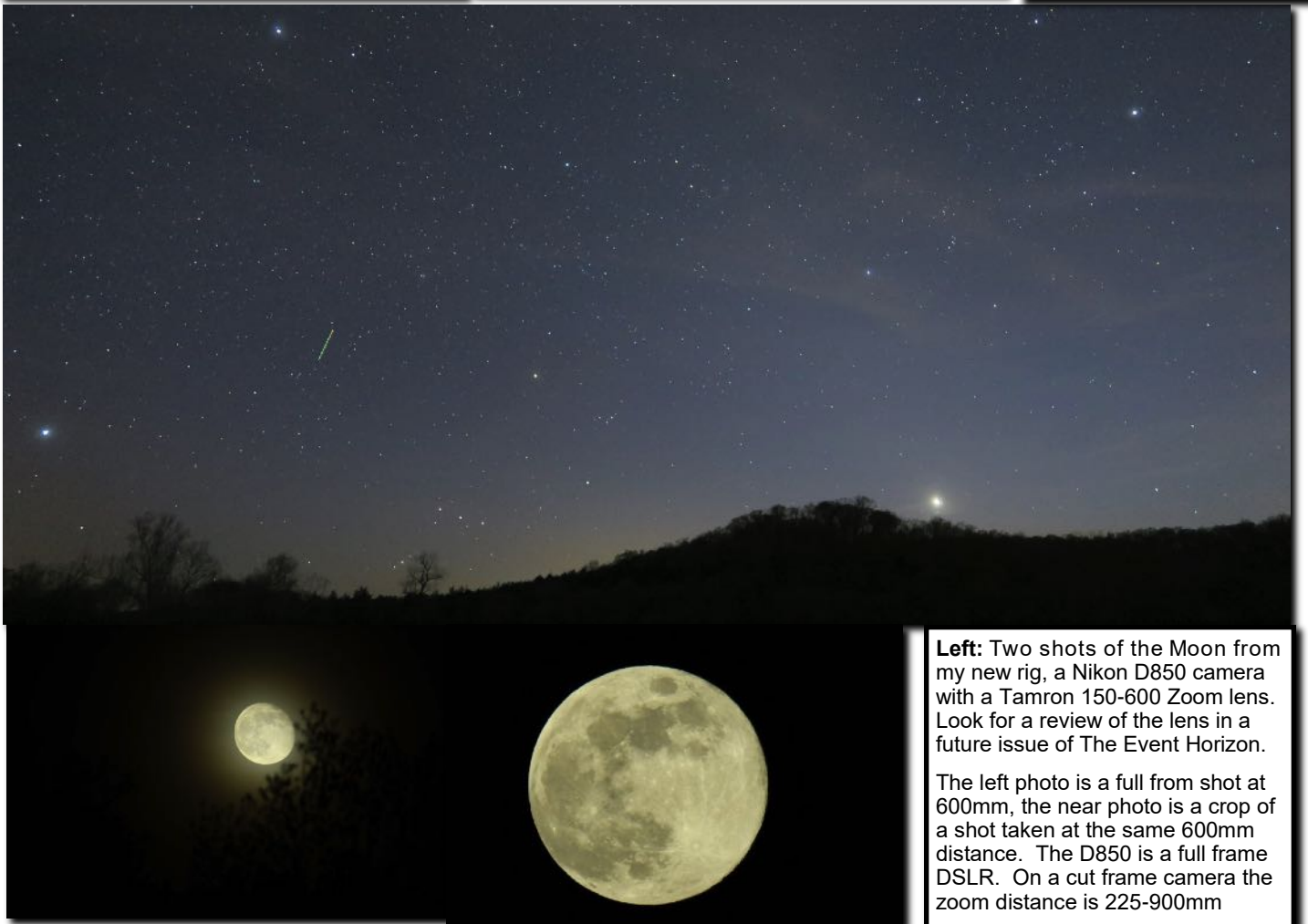




**Above and far left:** The audience enjoys hearing about the hunt for Planet IX from Michael Medford direct from UC—Berkeley via Zoom.

**Left:** SLAS member Lori Jarrel and her C8 at her cabin near Perryville.

**Below:** The sky at the cabin. SLAS members will be invited to a dark sky party at the dark valley in the future for observing.



**Left:** Two shots of the Moon from my new rig, a Nikon D850 camera with a Tamron 150-600 Zoom lens. Look for a review of the lens in a future issue of The Event Horizon.

The left photo is a full from shot at 600mm, the near photo is a crop of a shot taken at the same 600mm distance. The D850 is a full frame DSLR. On a cut frame camera the zoom distance is 225-900mm

## SLAS Executive Board Meeting Minutes March 1, 2018

### 1. Opening Activities: Attending: Attendees: Jim Small, Rich Heuermann, Bradley Waller, Brent Buch, Mark Jones, Tom Nickleson, Bill Winningham

Meeting started at 7:00pm February meeting minutes were distributed prior to meeting. Bill W. made motion to approve the February meeting minutes, second Tom N. Minutes were approved by Board

**Next board meetings:** Apr 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

### 2. External Business

**MSRAL 2018** set for June 22-24 at Explore Scientific. Astronomer and author, David Levy will be banquet speaker  
**ALCON 2018** in Minneapolis 11-14 July 2018

### 3. Director Reports:

**President – Jim Small:** SLAS Eclipse Mugs ordered and are in process. Expected delivery March 7<sup>th</sup>.

**Vice President: Bradley R Waller** Homemade Fest was successful, 15-20 Attendees. Prizes handed out: Cook Feldman-Laser Pointer, Brent Buch-I-Phone Adapter, Robert Drzymala-I-Phone Adapter, Rich Heuermann-CD: "Space Sessions"  
Purchased a protective case for the HDD (Monthly Presentation Videos). Reimbursement will come out of Office Supplies.

#### Presentations for 2018

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-2018	Ryan Clegg-Watkins, PhD	"Exploring the Moon from Orbit: Paving the Way for Future Astronaut Explorers"	Wash U	
15-Jun-2018	Edward Schlafly, PhD (1)	"Mapping the Milky Way's Dust in Three Dimensions"	LBNL	
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	Xiaochen Mao	"The Dawn Mission: Vesta and Ceres"	Wash U	
16-Nov-2018	Michael C Bouchard	"Mars 2020 Rover"	Wash U	
21-Dec-2018	Pamela Gay, PhD	"Secret Squirrel Stuff #2"	ASP	

Denotes Video Event \*LBNL: Lawrence Berkeley National Laboratory \*ASP: Astronomical Society of the Pacific

**Astro 101:** Equinox prizes "**Welcome Aboard Meetings**" for new members are still planned for each month.

**Secretary – Mark Jones** Public FB has 123 followers

**Treasurer/ALCor – Bill Winningham:** Financial report will come out this weekend IRS 990 Form due: 15 May 2018.

**Hospitality – Larry Campbell:** No report

#### Board member at large reports

**Brent Buch (2018)** Brent demonstrated link to SLAS meeting videos. Brent is limited to 20Mb file size as default. Brent will work with Don to enlarge default limit.

**Rich Heuermann (2019)** Rich sent out room reservation procedure to Board. Need to save copy on SLASDialogs.

**Tom Nickelson: (2020)** Wait to warm weather to move shed

### 4. Committee Reports: If needed

**Library Telescope Program:** John Beury is working on repair items. John and Mark helped repair LTP in Union MO LTP build this Saturday Brad conducted his first LTP demonstration at Brentwood Library.

**Membership – Don Ficken** sent report prior to meeting

We have 180 members at the end of February 2018 which is 22 members over the count at end of February 2017

**Newsletter:** Articles and pictures (especially pictures) are welcome to beef up the newsletter and our social media outlets. Please forward to [newsletter@slasonline.org](mailto: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.).

**Dark Site –** Messier Marathon this month at Danville and Buford Mountain

**Publicity – Press Release went out today** Really need help at Kirkwood

**Star Parties-** See report for list. Check NSN for upcoming events

**5. Old Business** None

**6. New Business** None

**7. Closing Activities** Motion to adjourn by Rich H. second by Tom N. meeting adjourned 8:20pm

11:17 PM  
04/04/18  
Accrual Basis

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

**St. Louis Astronomical Society  
Balance Sheet  
As of March 31, 2018**

	<u>Jan - Mar 18</u>	<u>Budget</u>	<u>\$ Over Budget</u>
Ordinary Income/Expense			
Income			
Total Magazine Subscription	281.55	320.50	(38.95)
Membership Dues	1,040.00	1,515.00	(475.00)
Total Income	<u>1,321.55</u>	<u>1,835.50</u>	<u>(513.95)</u>
Cost of Goods Sold			
Total Magazine Subscriptions	281.55	320.50	(38.95)
Merchandise		45.00	(45.00)
Total COGS	<u>281.55</u>	<u>365.50</u>	<u>(83.95)</u>
Gross Profit	<u>1,040.00</u>	<u>1,470.00</u>	<u>(430.00)</u>
Expense			
1-Programs & Events	612.91	713.00	(100.09)
2-Newsletter		44.00	(44.00)
3-Library expense	40.00	75.00	(35.00)
5-Loaner Scopes		600.00	(600.00)
7-Insurance		825.00	(825.00)
8-Website	179.40	170.00	9.40
9-Administrative Expenses	32.95	400.00	(367.05)
Total Expense	<u>865.26</u>	<u>2,827.00</u>	<u>(1,961.74)</u>
Net Ordinary Income	<u>174.74</u>	<u>(1,357.00)</u>	<u>1,531.74</u>
Other Income/Expense			
Other Income			
Donations	220.00	0.00	220.00
Interest Income	21.61	25.00	(3.39)
LTP Receipts	1,774.37	0.00	1,774.37
Total Other Income	<u>2,015.98</u>	<u>25.00</u>	<u>1,990.98</u>
Other Expense			
LTP Disbursements	24.65	0.00	24.65
LTP Escrow Funding	500.00	500.00	0.00
Total Other Expense	<u>524.65</u>	<u>500.00</u>	<u>24.65</u>
Net Other Income	<u>1,491.33</u>	<u>(475.00)</u>	<u>1,966.33</u>
Net Income	<u>1,666.07</u>	<u>(1,832.00)</u>	<u>3,498.07</u>

	<u>Dec 31, 17</u>	<u>Mar 31, 18</u>
ASSETS		
Current Assets		
Checking/Savings		
Checking - First Bank	5,162.74	5,185.13
Deposit, Certificate of	20,188.79	20,198.98
Library Telescope Escrow	299.98	2,035.33
PayPal	563.55	450.27
Savings - First Bank	46,297.03	46,308.45
YMCA Trout Lodge Escrow	482.87	482.87
Total Checking/Savings	<u>72,994.96</u>	<u>74,661.03</u>
Other Current Assets		
Inventory Asset	511.28	511.28
Undeposited Funds	50.00	50.00
Total Other Current Assets	<u>561.28</u>	<u>561.28</u>
Total Current Assets	<u>73,556.24</u>	<u>75,222.31</u>
Total Fixed Assets	0.00	0.00
TOTAL ASSETS	<u>73,556.24</u>	<u>75,222.31</u>
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	1,666.07
Total Equity	<u>73,556.24</u>	<u>75,222.31</u>
TOTAL LIABILITIES & EQUITY	<u>73,556.24</u>	<u>75,222.31</u>

**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](mailto: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 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

May 23, June 20, July 18, August 15, September 12, 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!  
5-6, 6-10, 7-8

**SLSC Public Telescope Viewing Events:** These events are held the first Friday of the month  
Planetarium shows start at 7pm  
5-4, 6-1, 7-6, 8-3, 9-7, 10-5, 11-2, 12-7

**Pattonville Observatory Public Viewing Dates**  
Friday, May 14, *Thursday*, May 17

**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

### May

3 Thur	SLAS Board Meeting
4 Fri	SLSC Public Telescope Viewing
4 Fri	Principia BioBlitz
6 Sun	SLAS Sky Orienteering
12 Sat	SLAS Dark Sky Observing
17 Thur	Florissant Valley Library
18 Fri	SLAS Regular meeting
19 Sat	SLSC Sidewalk Solar
21 Mon	NW branch Jeff County Library
22 Tue	Oak Bend Library
23 Wed	Francis Park
26 Sat	Stargazing at the Gateway Arch
29 Tue	Arnold Library

### June

1 Fri	SLSC Public Telescope Viewing
7 Thur	SLAS Board Meeting
9 Sat	St. Lucas Ballfields
9 Sat	Great Rivers Greenway Festival
10 Sun	SLAS Sky Orienteering
13 Wed	Space Camp
15 Fri	SLAS Regular Meeting
16 Sat	SLAS Sidewalk Solar
16 Sat	SLAS Dark Sky Observing
20 Wed	Francis Park
22 Fri	MSRAL
23 Sat	MSRAL
23 Sat	Stargazing at the Gateway Arch
24 Sun	MSRAL
27 Wed	Jamestown Bluffs Library

### July

5 Thur	SLAS Board Meeting
6 Fri	SLSC Public Telescope Viewing
8 Sun	SLAS Sky Orienteering
9 Mon	Flora borealis
14 Sat	SLAS Dark Sky Observing

### 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](mailto:galleria@headznthreadz.com)

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

[delmar@headznthreadz.com](mailto: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

<b>President</b>	<b>Jim Small</b>	314-307-0692
president at slasonline.org		
<b>Vice President</b>	<b>Bradley R Waller</b>	314-481-7250
vicepresident at slasonline.org		
<b>Secretary</b>	<b>Mark Jones</b>	636-394-2342
secretary at slasonline.org		
<b>Treasurer</b>	<b>Bill Winningham, (Don Ficken - membership)</b>	636-357-2763
treasurer at slasonline.org		
<b>Hospitality</b>	<b>Larry Campbell</b>	636-244-2867
hospitality at slasonline.org		
<b>Board Members at Large:</b>		
	<b>Tom Nickelson</b>	314-346-9565
board20 at slasonline.org		
	<b>Rich Heuermann</b>	314-962-9231
Board19 at slasonline.org		
	<b>Brent Buch</b>	314-239-0329
Board18 at slasonline.org		
<b>ALCOR</b>	<b>Bill Winningham</b>	636-357-2763
(Astronomical League Correspondent ) treasurer at slasonline.org		
<b>MSRAL Rep.</b>	<b>Jim Small</b>	314-909-7211
msral_rep at astroleague.org		

## COMMITTEE CHAIRS

<b>Dark Site Coordinator</b>	<b>Mark Jones</b>	636-394-2342
darksite at slasonline.org		
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librarytelescope at slasonline.org		
<b>Loaner Equipment</b>	<b>Greg Gaines</b>	314-277-3082
loaner at slasonline.org		
<b>Merchandise</b>	<b>Vacant</b>	
merchandise at slasonline.org		
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membership at slasonline.org		
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<b>'SLASdialogs' Moderator</b>	<b>Mark Jones, Rhonda Whelan</b>	
dialogsmoderator at yahoo.com		
<b>Star Party Coordinator</b>	<b>Bill Breeden</b>	314-276-3613
starparty at slasonline.org		
<b>Telescope Making</b>	<b>Bill Davis, Jim Melka</b>	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>

Follow us on  
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Facebook: @stlastro

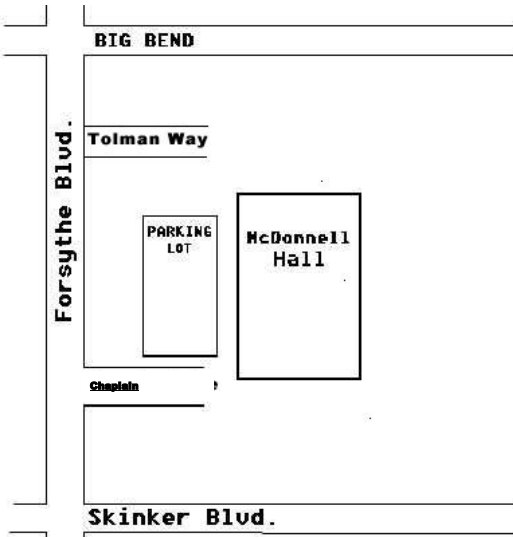


**Who We Are and What We Do**

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

