

# THE EVENT HORIZON



## ST. LOUIS ASTRONOMICAL SOCIETY

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

**VOLUME 28, Issue 5  
May, 2018**

### **NASA's Mars 2020 Rover and Its Search For Ancient Martian Life** by **Mr. Michael Bouchard** **Washington University**

Mr. Michael Bouchard of Washington University, will be featured at the May meeting of the St. Louis Astronomical Society. The meeting will begin at 7:30 PM on Friday, May 18, in McDonnell Hall, Room 162, on the Washington University campus.

NASA's Mars 2020 Rover will search for habitable environments and for evidence of past microbial life on the Red Planet. Scheduled for a July or August, 2020 launch, it will land on Mars in February 2021. The Rover is a mobile robotic laboratory packed with an array of instruments, including twenty-three cameras and a ground-penetrating radar device. Mr. Bouchard will talk about how the Mars 2020 Rover will use its instruments to explore the Martian surface and perhaps find traces of fossil microbial life.

Michael Bouchard is a Doctoral candidate in the Department of Earth and Planetary

Sciences at Washington University. He is currently a member of the NASA team examining possible landing sites for the Rover.

### **Upcoming Meetings: 2018**

**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** Bard Joliff, PhD Washington University

Lunar Geology

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

### **Mid States Region**



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### **SLAS Elections at the May Meeting**

Nominations for the Executive Board were held at the April meeting and they are still open. Nominations so far are:

President: Jim Small

Vice President: Bradley Waller

Secretary: Mark Jones

Treasurer: Bill Winningham

Hospitality: Larry Campbell

Board Member at Large: Brent Buch

### **MSRAL and ALCON Conferences coming up**

**MSRAL** (Mid-States Region of the Astronomical League) Convention will be held June 22-24 in Springdale Arkansas at the Explore Scientific facilities. David Levy will be the keynote speaker for the banquet Saturday night.

**DEADLINE for EARLY registration is MAY 19.** Here is a link:

<http://nwa.space/msral-2018>

**ALCON** (Astronomical League Convention) will be held in Minneapolis, Minnesota July 11-14. Here is a link:

<https://alcon2018.astroleague.org/>

### Presidents Corner by Jim Small

It's been an eventful month with lots of star parties as school winds down. There are plenty of events coming up to keep you entertained and busy during the summer months.

Dark Sky observing is in full swing now that it is finally warm outside. See Bill Breeden's article inviting you to join us at Danville or other dark sites to get some serious observing in. Never been? Don't hesitate to ask anyone about the experience.

There are a number of events coming up soon. At the end of May, there will be a Starlight Festival held at Yerkes Observatory. I'm not sure of the future status of Yerkes, so I will make my way up there to check it out. See the article below for details about the event.

MSRAL is coming up June, 22-24 in Sprindale, Arkansas in NW Arkansas. It will be held at the Explore Scientific facility and David Levy will be the keynote speaker. The deadline for early registration is SATURDAY, MAY 19.

If you are planning on attending, be sure to sign up by that time! I will see you there!

Early deadline has already passed for ALCON 2018 to be held in Minneapolis, Minnesota. I will see you there if you're going!

There are a number of large events going on this summer, so keep in touch with Don Ficken for most of them. Be sure to RSVP for events you want to help with on Night Sky Network.

Elections will be held at the May 18 meeting. See the front page for a current list of nominees. Nominations are still open and will remain so until such time as the elections are held.

We have a motion in place to have the membership vote on funding for additional table covers and banners for our booths at various events. We need the additional materials as we have multiple events that need them.

See you at the meeting Friday, May 18!

### Motion for a Vote at the Meeting Friday Night

Totally Promotional ran a sale last month on banners and table covers. We purchased two table covers and they came with free banners. We used money from the library budget to cover the cost of these materials as they were sorely needed for events. We are starting to have multiple events that need display materials and we didn't anticipate it in the budget. The board approved submitting a motion to the membership to replace the money from the Library budget by authorizing money to cover the cost of the additional materials. The motion that will be voted upon is below:

***Motion to buy two additional table covers matching our existing table cover. As part of purchase we will get 2 free banners having same design as table cover. Vendor already has artwork on file. Cost is \$288 plus shipping. To fund this purchase 50% of the cost will come from the LTP budget and 50% from the SLAS Library budget. Since these items are durable goods the Board feels that using library budget is appropriate alternative. The Board will then forward motion to general membership to credit/reimburse SLAS library budget. If not approved by general membership, then Library budget will not be reimbursed.***

**Below:** Rich Jennings at a SLAS table using the table covers purchased in addition to the one we had.



### Starlight Festival to be Held at Yerkes Observatory May 26, 27

Wondering what to do on Memorial Day weekend? How about a trip to Williams Bay, Wisconsin to visit Yerkes Observatory at the annual Starlight Festival! The event is free (but still requires a ticket), with \$9 tours available both Saturday and Sunday every half hour. Close parking costs, but there are free lots with shuttles provided. There will be plenty of exhibits and vendors and the speaker list includes the following:

Dr. Linda Spilker NASA Jet Propulsion Laboratory, Pasadena, CA "The Secrets of Saturn"

Dr. Mike Reynolds NASA's Teacher in Space - Professor of Astronomy at Florida State College Dr. Seth Shostak SETI Institute

Marcia Bartusiak Massachusetts Institute of Technology, Cambridge, MA "The Day We Found the Universe"

Samuel D. Hale Mount Wilson Observatory, Pasadena, CA "The Legacy of George Ellery Hale"

Michael E. Bakich Astronomy Magazine, Waukesha, WI "Star Death"

Mr. Freeze Fermi National Accelerator Laboratory, Batavia, IL "The Wonders of Cryogenics"

Pranvera Hyseni Astronomy Outreach of Kosovo, Prishtina, Kosovo "Little Things Make a Big Difference"

There will also be rocket and drone demos and Space Art by Carlos Hernandez

Viewing through the large telescopes at Yerkes will be held on a first come first serve basis

Here is a link to the page for the event where you may obtain tickets. <https://starlightfestival.com/>

## Danville Observing Report – May 5, 2018 *by Bill Breeden*

DANVILLE, MO - I know, I know. The SLAS Dark Sky event is each month on New Moon Saturday. But why wait? Tonight – Saturday, May 5 – is the Last Quarter Moon Saturday. I checked the Night Sky Network calendar and there were no competing SLAS events scheduled. I checked the NOAA weather forecast – favorable! So why not garner up some interest in an impromptu visit to Danville. Even on a New Moon Saturday, many members are packing up just after midnight anyway, so a Last Quarter Moon Saturday works just as well for them. Only a handful of hardy observers and imagers routinely stay until the wee hours of the morning.

So I posted an impromptu Danville event for Saturday, May 5 on the day before, based on the favorable weather forecast. Night Sky Networks RSVPs allow a last-minute gathering to be planned, so no one should have to worry about showing up out there alone. Watch your email and the Night Sky Network calendar for these impromptu dark-sky observing opportunities – this is one way we can improve the odds for clear sky observing!



Saturday night's weather did not disappoint. Myself, Cook Feldman, Opal Andrews (all from SLAS), and one gentleman named Jim (from ASEM) arrived at Danville under the clearest skies we have seen for a very long time! The wind was nearly non-existent, and humidity was pleasantly low. In a word, the weather and sky were perfect. The trip out to Danville was already worth it, even before it was dark!

*As darkness fell, we could see that it was going to be fantastic clear night at Danville!*  
Photo by Bill Breeden

For the benefit of our newer members, I will go over the telescopes we used. Cook had his home-built 8-inch Dobsonian telescope with 2-inch focuser, at f/6.75, fitted with digital setting circles. Cook used several Hyperion eyepieces, and his prized Explore Scientific 20mm 100-degree apparent field-of-view (APOV) eyepiece. I had my 8-inch Meade LX-90 goto Schmidt-Cassegrain telescope (SCT) with 1.25-inch focuser at f/10. I used my 9mm Televue DeLite 62-degree APOV eyepiece for high power, and two Televue Panoptic 68-degree APOV eyepieces for lower power: a 24mm and a 19mm. Opal brought an Orion library telescope and a pair of 20x70 binoculars.



*Cook Feldman's 8-inch home-built Dobsonian is all set up and ready for some galaxy observing.*  
Photo by Bill Breeden



(Continued from page 3)

Spring is Galaxy Season. We had our sights set on the galaxies of Leo, Virgo, and Coma Berenices. Other than Venus, only galaxies would be observed tonight. It was just too nice of a night to waste observing objects that can be seen from anywhere – we wanted to probe deep, outside of our home galaxy the Milky Way, and we sure did! The Leo Triplet beckoned first, and I had planned to spend a lot of time with these three galaxies in my eyepiece. I planned to observe and study each one using my 9mm DeLite eyepiece at 222x.

What a delight (pun intended)! I began with M66, the brightest member of the Leo Triplet, shining at magnitude 8.2. It is a grand-design spiral, tilted mostly toward Earth. In my 9mm DeLite eyepiece, it appeared as a surprisingly bright oval with a bright core, and I could make out some mottling effects. M66 spans about 9' across, and my eyepiece gives me a view about 17' across, which perfectly framed the galaxy. Seeing was marvelous, and transparency was very good. I spent more time on M66 than I ever have before, and I was rewarded with a new familiarity with this deep-sky wonder.

After many minutes, I moved the telescope to M65, the second member of the Triplet. It is about half the brightness of M66, at magnitude 9.3. M65 is about the same size as M66, and in my 9mm eyepiece, I could spot two dust lanes. I studied the galaxy at length, pondering the fact that I was gazing 35 million light-years into space. This is the wonder of observing at the eyepiece – when you do, you are not looking at a screen or a picture. In this day and age of technology, that is an ever-more important distinction. You are looking at the actual galaxy, with nothing between your eye and that distant galaxy except some glass and Earth's atmosphere. *Ponder it again: You are looking at the actual galaxy!*



ied the galaxy at length, pondering the fact that I was gazing 35 million light-years into space. This is the wonder of observing at the eyepiece – when you do, you are not looking at a screen or a picture. In this day and age of technology, that is an ever-more important distinction. You are looking at the actual galaxy, with nothing between your eye and that distant galaxy except some glass and Earth's atmosphere. *Ponder it again: You are looking at the actual galaxy!*

*Observing the Leo Triplet tonight will be a joy with my 8-inch Meade LX-90 SCT.*

*Photo by Bill Breiden*

I traveled to the third member of the Triplet, NGC3628. This galaxy is fainter by another magnitude, at 10.2. It extends more sky at an apparent size of 15', which stretched most of the way across my eyepiece's 17' true field of view. Even at this faintness (I usually draw the line at magnitude 9.9), the galaxy offered much detail to my eye. Images make the galaxy appear rectangular, but in my eyepiece it was a faint, thin line cut in half by an obvious dust lane. The core stood out nicely.

To explore more galaxies, I switched to lower power with my 24mm and 19mm Televue Panoptic eyepieces. These are always a treat! The 24mm gives a true field of 46' in my SCT, and the 19mm gives 37'. This would provide more of a "spacewalk" view than the 9mm did, although the 9mm provided a wonderful view for close study of the Triplet galaxies. To give you an idea of the difference, I can see M66 and M65 at the same time in the 24mm and the 19mm, whereas in the 9mm, each galaxy stands alone in the field of view for closer scrutiny.

Cook and I spent the rest of the night observing galaxies in Leo, Coma Berenices, and Virgo. Here is a partial list:

Leo  
Leo Triplet (M66, M65, NGC3628).  
NGC3596, NGC3593, NGC3666, NGC3705, NGC3489, NGC3655.

(Continued on page 5)

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### Coma Berenices

NGC4494, which is inside the large open cluster Melotte 111.

M88, M91, NGC4565 (Needle Galaxy, or Caldwell 38), NGC4571, NGC4474, NGC4456, NGC4477.

NGC4889 (mag. 11.5 elliptical galaxy, near the threshold of my telescope and observing abilities).

### Virgo

Markarian's Chain: M84, M86, NGC4438, NGC4435, NGC4461, NGC4458, NGC4473, NGC4477.

M90 (always a favorite), M89, M87 (this one contains a black hole!), M58, NGC4564, NGC4567, NGC4568, NGC4528.

No visit to Danville would be complete without taking some time for unaided-eye and binocular viewing. The May sky was marvelous. Leo stood brightly high overhead. Arcturus shined with its reddish light high up in the east. Setting in the west was the constellation Auriga with its bright star Capella. The four bright stars of Corvus the Crow dominated the low southern sky. Later in the night, three stars in a line rose in the southeast: Scorpius was giving us a sneak-preview of the summer to come! At zenith was Melotte 111, the large, sparkly star cluster in Coma Berenices. The Big Dipper was amazingly bright, pouring out its bowl high up above Polaris. And what is that bright, bluish star over there low in the northeast? Could it be...Vega...already? WOW. I am SO GLAD we are here tonight!

Cook and I shared many of our views with Opal, and she enjoyed using a library telescope under these dark skies. By 11:00PM, Opal packed up and headed for home, and Cook and I did the same about midnight.

On the eastward drive home, I was treated to the spectacular sight of the Last Quarter Moon rising over I-64. It looked huge – the Moon Illusion works even for the half-lit Moon. It began with a reddish hue, then as it rose higher, more orange. Beautiful ending to a great night of astronomy!

By the time you read this, we will all know whether or not the weather cooperated for SLAS' "official" dark-sky night on May 12. But either way, we got in a wonderful night of observing on May 5. Newer members – if you have not taken an opportunity to come out to a dark site to observe, I implore you to give it a try, and enjoy one of the best benefits of your SLAS membership – observing companions. I know it takes much effort and time to pack up equipment and creature comforts and make the drive out there. It is so worth it – and easier than you may think. The drive is mostly interstate, and you can set up your telescope right beside your vehicle. Also, you are not obligated to stay out all night. There is usually a "first shift" that packs up around midnight. Look for future impromptu or scheduled dark-sky observing opportunities, and we hope to see you out there!

Clear Skies,

Bill Breeden



**Above:** I'm sure it doesn't do the view justice, but above is a view of the Southern Skies photographed by Mark Jones as he was in Mexico for his daughter's wedding. Three southern features are visible, including Omega Centauri, Alpha Centauri and the Southern Cross. *Photo by Mark Jones*

## SLAS Executive Board Meeting Minutes April 5, 2018

**1. Opening Activities:** Attending: Jim Small, Rich Heuermann, Mark Jones, Brent Buch, Brad Waller, Larry Campbell  
Minutes from March distributed before the meeting. Motion to accept March minutes by Rich H, second by Larry C. Minutes approved.

**2. External Business Next board meeting:** 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** in Minneapolis July 11-14

### 3. Director Reports:

**President: Jim Small:** SLAS could use a second set of table runners and/or banner for outreach events. Motion to buy two additional table covers matching our existing table cover. As part of purchase we will get 2 free banners having same design as table cover. Vendor already has artwork on file. Cost is \$288 plus shipping. To fund this purchase 50% of the cost will come from the LTP budget and 50% from the SLAS Library budget. Since these items are durable goods the Board feels that using library budget is appropriate alternative. The Board will then forward motion to general membership to credit/reimburse SLAS library budget. If not approved by general membership, then Library budget will not be reimbursed. Motion by Jim Small second Rich H. Motion passed.

**Vice President: Bradley R Waller**

#### Presentations for 2018

20-Apr-2018	Michael Medford	Discovering Planet 9 (10)	Berkeley (1)
18-May-2018	Michael C Bouchard	Mars 2020 Rover	Wash U
15-Jun-2018	Edward Schlafly, PhD	Mapping the Milky Way's Dust in Three Dimensions	LBNL (1)
20-Jul-2018	Erika Gibb, PhD	Comets	UMSL
17-Aug-2018	Ryan Clegg-Watkins, PhD	Exploring the Moon from Orbit: Paving the Way for Future Astronaut Explorers	Wash U
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	Brad Jolliff, PhD	Lunar Geology	Wash U
21-Dec-2018	Pamela Gay, PhD	Super-Secret Squirrel Stuff...Again :)	ASP

(1) Denotes Video Event

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

\***Astro 101:** No A101 planned for April    \***Welcome Aboard Meetings** for new members are still planned for each month.

Brad working on new SLAS brochure card. Card will have SLAS photo on one side and SLAS info on the other. Card will include: logo, website, free lectures, social media, free telescope viewing, mission statement. If anyone has ideas for card bring prototype to May Board meeting

**Secretary: Mark Jones:** No lens sales this year to report. I did ship another lens to SCE last month. FaceBook – Public Page doing well up to 136 follows. Have added most public events to FB page. SLAS-only FB page has 37 members. Orienteering planned for this Sunday, likely to cancel based on weather forecast

**Treasurer/ALCor: Bill Winningham:** Financial reports sent before meeting. First Quarter net income \$1,666.

**Hospitality: Larry Campbell:** Hospitality always seem to have enough food left over. If you have any ideas for refreshments contact Larry **Membership recognition** – Still have a lot of membership recognition pins to give away

#### Board member at large reports

**Brent Buch (2018)** Don has built a login for view meeting videos on new SLAS Joomla site. Still working on resolving play-back on full size videos

**Rich Heuermann (2019)** No report

**Tom Nickelson: (2020)** No report

### 4. Committee Reports:

**Library Telescope Program:** Don working on contract and schedule dates for St Louis County Library Telescope training. Don working on new Educator Telescope Program business cards. We had many library patrons compliment the St. Louis Astronomical Society for their in-depth presentation of the telescopes. The libraries also had some of the elderly comment that a power point presentation would be greatly appreciated due to sight issues. We had several inquiries of when we were going to have another session. Patrons expressed their excitement to go outside with the Astronomical Society and receive hands on practice in finding stars.

**Membership** – Attached is the latest SLAS Membership report which shows that we have 183 members at the end of March 2018. This figure is two members lower than the beginning of the year but 19 members above last year at this same time. Notably for year-to-date 2018, we gained 12 new members but lost 14 members resulting in a two-member decline from the start of the year. Member retention should be a focus of club for the remainder of this year.

**Merchandise** – Eclipse coffee mugs being sold by Brad

**Librarian** – Table banners ordered will be shipped April 20<sup>th</sup>

**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.)

**Social Networking** – Would like volunteer to chair networking committee

**Loaner scopes:** LTP all 4 scopes checked out

**Publicity** – Press release out

**Star Parties-** Bill Breeden sent out star party list before the meeting. Twenty-four public and private events scheduled for April! Check NSN for event details

**5. Old Business** None

**6. New Business** None

**7. Closing Activities** Brad made motion to adjourn meeting, second by Larry. Meeting adjourned 9:20pm



5:53 PM  
05/03/18  
Accrual Basis

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

	Jan - Apr 18	Budget	\$ Over Budget
<b>Ordinary Income/Expense</b>			
Income			
Magazine Subscription			
Astronomy Magazine Sales	247.70	119.80	127.90
Sky & Telescope Sales	230.65	230.65	
<b>Total Magazine Subscription</b>	<b>478.35</b>	<b>350.45</b>	<b>127.90</b>
Membership Dues	1,605.00	1,655.00	(50.00)
<b>Total Income</b>	<b>2,083.35</b>	<b>2,005.45</b>	<b>77.90</b>
Cost of Goods Sold			
Magazine Subscriptions			
Astronomy Magazine Cost	149.75	119.80	29.95
Sky & Telescope Cost	131.80	230.65	(98.85)
<b>Total Magazine Subscriptions</b>	<b>281.55</b>	<b>350.45</b>	<b>(68.90)</b>
Merchandise	153.44	45.00	108.44
<b>Total COGS</b>	<b>434.99</b>	<b>395.45</b>	<b>39.54</b>
Gross Profit	1,648.36	1,610.00	38.36
Expense			
1-Programs & Events	637.19	851.00	(213.81)
2-Newsletter		58.00	(58.00)
3-Library expense	192.09	100.00	92.09
5-Loaner Scopes		600.00	(600.00)
7-Insurance	825.00	825.00	
8-Website	179.40	170.00	9.40
9-Administrative Expenses	53.03	574.00	(520.97)
<b>Total Expense</b>	<b>1,886.71</b>	<b>3,178.00</b>	<b>(1,291.29)</b>
Net Ordinary Income	(238.35)	(1,568.00)	1,329.65
<b>Other Income/Expense</b>			
Other Income			
Donations	620.00	0.00	620.00
Interest Income	25.41	34.00	(8.59)
LTP Receipts	1,790.65	0.00	1,790.65
<b>Total Other Income</b>	<b>2,436.06</b>	<b>34.00</b>	<b>2,402.06</b>
Other Expense			
LTP Disbursements	1,356.93	0.00	1,356.93
LTP Escrow Funding	500.00	500.00	
<b>Total Other Expense</b>	<b>1,856.93</b>	<b>500.00</b>	<b>1,356.93</b>
Net Other Income	579.13	(466.00)	1,045.13
Net Income	340.78	(2,034.00)	2,374.78

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

	Dec 31, 17	Apr 30, 18
<b>ASSETS</b>		
Current Assets		
Checking/Savings		
Checking - First Bank	5,162.74	5,343.00
Deposit, Certificate of	20,188.79	20,198.98
Library Telescope Escrow	299.98	703.04
PayPal	563.55	384.04
Savings - First Bank	46,297.03	46,427.25
YMCA Trout Lodge Escrow	482.87	482.87
<b>Total Checking/Savings</b>	<b>72,994.96</b>	<b>73,539.18</b>
Other Current Assets		
Inventory Asset	511.28	652.43
Undeposited Funds	50.00	0.00
<b>Total Other Current Assets</b>	<b>561.28</b>	<b>652.43</b>
<b>Total Current Assets</b>	<b>73,556.24</b>	<b>74,191.61</b>
<b>Total Fixed Assets</b>	<b>0.00</b>	<b>0.00</b>
<b>TOTAL ASSETS</b>	<b>73,556.24</b>	<b>74,191.61</b>
<b>LIABILITIES &amp; EQUITY</b>		
Equity		
Opening Bal Equity	8,137.66	8,432.25
Retained Earnings	54,813.50	65,418.58
Net Income	10,605.08	340.78
<b>Total Equity</b>	<b>73,556.24</b>	<b>74,191.61</b>
<b>TOTAL LIABILITIES &amp; EQUITY</b>	<b>73,556.24</b>	<b>74,191.61</b>

**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 Nicoletti's Restaurant in Valley Park* All meetings are on First Thursdays unless noted.

2018: June 7, July 5, August 2, Sept 6, Oct 4, Nov 1, Dec 6

### Dark Sky Observing Dates

June 16, July 14, August 11, September 8, October 6, November 3

**Francis Park Events:** These events are on Wednesdays of 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!

June 10, July 8

**SLSC Public Telescope Viewing Events:** These events are held the first Friday of the month  
Planetarium shows start at 7pm

6-1, 7-6, 8-3, 9-7, 10-5, 11-2, 12-7

### Pattonville Observatory Public Viewing Dates

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

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  
16 Sat Babler Park  
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  
18 Wed Francis Park  
20 Fri SLAS Regular Meeting  
21 Sat SLSC Sidewalk Solar  
21 Sat Stargazing at the Gateway Arch

### 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
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<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
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## COMMITTEE CHAIRS

<b>Dark Site Coordinator</b>	<b>Mark Jones</b>	636-394-2342
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<b>Librarian</b>	<b>Jim Small</b>	314-909-7211
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<b>'SLASdialogs' Moderator</b>	<b>Mark Jones, Rhonda Whelan</b>	
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<b>Star Party Coordinator</b>	<b>Bill Breden</b>	314-276-3613
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<b>Telescope Making</b>	<b>Bill Davis, Jim Melka</b>	314-469-3061
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***Devoted to the Interest and Advancement of the Science of Astronomy***

**ST. LOUIS ASTRONOMICAL SOCIETY**

We're on the Web!  
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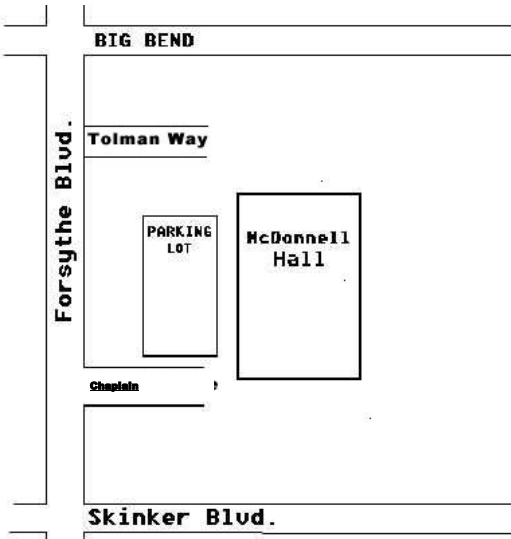


**Who We Are and What We Do**

St. Louis Astronomical Society is a not-for-profit organization established in 1936. SLAS is devoted to the interest and advancement of the science of astronomy. Our mission is to promote an understanding of the science of astronomy to our members and to the public. Membership is open to 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

