

# THE EVENT HORIZON



## ST. LOUIS ASTRONOMICAL SOCIETY

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

**VOLUME 27, Issue 4  
April, 2017**

### Mid States Region



### Uncovering A Missouri Meteorite Crater: The Weableau Impact Structure

*by*  
**Dr. Kevin R. Evans**  
**Missouri State University,**

Dr. Kevin Evans will be featured at the April 21 meeting of the St. Louis Astronomical Society. The meeting will begin at 7:30 PM Friday, April 21, in McDonnell Hall, Room 162, on the Washington University campus.

While many craters on the Moon are visible in even small telescopes, craters on the Earth are far fewer and much harder to see. Most of them have been covered up by erosion, movement of the Earth's surface, and vegetation. Some ancient craters have been uncovered by geologists who have precisely mapped the surface and analyzed unusual rock formations and composition. One such crater, thought to have formed over 340 million years ago, is hidden away in Saint Clair County, Missouri. It is the Weableau Impact Structure, named for the nearby town, which is about 50 miles

north-northwest of Springfield, Missouri. Dr. Evans has mapped the central crater and studied the broken and melted rocks formed in that ancient impact. He will talk about how he studies Earth's ancient craters, and what he has discovered about the Weableau.

Kevin Evans is a professor in the Department of Geography, Geology, and Planning at Missouri State University, Springfield, MO. His research interests include meteorite impacts, carbonate depositional systems, and sequence stratigraphy..

### **ASTRO 101: Solar Eclipse Filters** **Upcoming Meetings:**

**May** - Kara Kundert - Cosmic Epoch of Re-ionization "Skype" - UC Berkeley

**June Panel on Solar Eclipse (Meeting will be at Queeny Park!)**

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

**August:** TBA

**September** SLAS Collective Solar Eclipse Results

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### A RAFFLE for

**Dr Neil deGrasse Tyson**  
**Peabody Opera House**  
**Wednesday**  
**May 18, 2017, 7:30pm**



### *For SLAS members only*

The raffle is for TWO tickets to this event. The drawing will be held at the **April SLAS monthly meeting**. You do not need to be in attendance to win.

Contact person:

Bradley R Waller

SLAS Vice President

[bwaller@stlouisco.com](mailto:bwaller@stlouisco.com)

314-481-7250

1 ticket: \$2.00

Buy 5 tickets for \$10.00 and get a 6<sup>th</sup> one free!!!

**Presidents Corner - Jim Small**

There are currently over 2300 people signed up for the Eclipse Expo. The St. Louis Eclipse Task Force held its meeting Wednesday night at the SLSC to discuss the expo and plans for the eclipse. Angela Speck spoke to us via a Zoom videoconference about the plans and recommendations for schools for the day of the eclipse. If you haven't signed up for the expo, be sure to visit [www.eclipseexpo.org](http://www.eclipseexpo.org) and get your free tickets. Be sure to sign up to volunteer for the event; we will need people to man tables, help set up on Friday and tear down tables Saturday at 5 pm when the expo ends.

**The June meeting will be held Friday June 16 at 7:30 pm AT THE QUEENY GREENSFELDER CENTER FACILITY where the expo will be held.** It will be a panel discussion and will also provide an opportunity to talk to some of the vendors if you arrive between 6 and 7:30pm. Be sure to mark the change on your calendar!

The International Space Development Conference to be held here in St. Louis will take place over Memorial Day weekend from Thursday through Sunday. If you would like to

attend this extensive conference without spending a lot of money, just agree to volunteer as stated below:

**Volunteers who work at least six hours on Conference tasks and duties may register for the basic conference for \$25, and attend regular Conference events when not working. Meals and special events are not included in the \$25 registration rate. <http://isdc2017.nss.org> .**

This month we will discuss solar filters in the A101 part of the meeting. If you have solar filters you can bring to the meeting, that would be terrific! We will also talk about some of the very inexpensive equipment you can purchase to view the Sun safely. Explore Scientific just announced a new line of materials and they are very inexpensive.

MSRAL is coming from June 9-11. It will be held on the campus of Missouri State University. Dorms will be available and the format will be familiar. Friday night StarBQ and tour of Baker Observatory, Saturday meetings and banquet and Sunday morning meetings. Registration may be found at [www.msral.org](http://www.msral.org)

**Elections will be held in May. Nominations will be accepted at the April meeting.**

**Outreach Volunteers Jan-April 9, 2017**

Through early April 2017, SLAS members have logged 351 hours for 150 NSN outreach events!

Members with 5 or more events, for 2017, qualify for the Night Sky Network pin. Check NSN for opportunities and sign up today.

Thank you to all our volunteers! RSVP for more events now! See the calendar at the end of this issue for dates.

Member Name	# of events,	# of Hrs	
Donald Ficken	31 events,	51.7	hrs
Cook Feldman	18 events,	59	hrs
Michelle Birch	11 events,	21.8	hrs
Larry Campbell	10 events,	21	hrs
James Small	9 events,	25.5	hrs
Bradley Waller	8 events,	36	hrs
John Beaury	8 events,	22.5	hrs
Rich Heuermann	7 events,	20	hrs
Mark Jones	7 events,	18.5	hrs
Richard Jennings	7 events,	14	hrs
William Neubert	5 events,	13.5	hrs
Sharon Bertram	5 events,	11	hrs
Frank Mack	4 events,	7	hrs
Richard Fefferman	2 events,	6	hrs
John Boncek	2 events,	5	hrs
Rick Menendez	2 events,	3	hrs
Josh Zitko	1 event,	4	hrs
Bill Breeden	1 event,	3	hrs
Rita Breeden	1 event,	3	hrs
Tom Keutzer	1 event,	2.5	hrs
Gregory Pernoud	1 event,	2	hrs
Raymond Mueller	1 event,	1.5	hrs



**Left:** Larry Campbell and Rich Heuermann receive their Night Sky Network Pins for outreach with SLAS for 2016



## **Exploring the Constellation Orion**

*by*  
**Bill Neubert**

Our monthly Sky Orientation events are excellent opportunities to learn how to use a star map to identify constellations, bright stars and planets. It can also be fun to take one constellation and get to know it in depth. And, you can use your expert knowledge to impress your friends.

Orion is one of the most identifiable constellations after the Big Dipper. Most cultures describe Orion as the hunter, though some cultures have other legends. I was intrigued when Sky and Telescope provided a Native American star map, where Orion is shown as "the Winter Maker".

The constellation is bounded by four bright stars. Betelgeuse (meaning "shoulder" or "hand" of the "central one"), to the northeast and forming the shoulder, is a bright "red super giant star" and is nearing the end of its life. If it were at the center of our solar system, it would extend past the orbit of Mars. It was the first star to have its angular size measured. Astronomers have detected a shell of expelled gas, indicating it has started to shed its outer layers as a part of the pre-nova death process. Its relative orange color can be seen with some effort.

To the west of Betelgeuse and forming the other shoulder is the star Bellatrix (meaning "female warrior"). Though the fifth brightest star in the constellation, this is actually a truly massive star at approximately 9 times the mass of our sun.

Directly south from Bellatrix and forming the southwest extreme is the very bright and bluish star Rigel. It forms the foot of Orion. This is more than a massive star; it is a massive collection of multiple large stars that closely orbit each other. Compare the color of Rigel and Betelgeuse and decide if you see the color differences. Continuing east, in the south east corner is the star Saiph.

In the center of the constellation is the best known trio of stars in the sky: Orion's belt. From southeast to northwest, the stars are Alnitak, Alnilam and Mintaka. Mintaka is very near the celestial equator.

Away from city lights, the next stars to look for are the "sword" stars south of the belt stars. The center sword "star" is actually the glorious Orion Nebula, where new stars are forming. I always enjoy viewing this nebula in binoculars when under dark skies.

Finally, once you become an expert with this constellation, you can try to find the "club", the "head" and the "shield" (or bow) stars. But, those do require darker skies and some practice. The included star map on the next page will help you locate all the stars that I mentioned.

## **Sky Orienteering at Babler State Park Monument Area**

To put Bill's article and the map on the next page in practice, join us at the next sky orienteering event this coming Sunday night at Babler State Park in the Monument Area in the parking lot past the monument. If it's clear, we usually have several members participating in this relaxed event. Bring a lawn chair, binoculars, star maps and a red flashlight and enjoy perusing the stars together. It's a great opportunity to learn the sky and to share with others some of your favorite objects and how to find them. If you don't have the above items, just bring yourself and enjoy some naked eye viewing and constellation hunting.

This month will be one of the last for Orion for the season as it, along with the rest of the winter "6 Pack" of Orion, Taurus, Auriga, Canis Major, Canis Minor and Gemini are gradually working their way westward in the early evening sky as the Earth makes its way around the Sun. Bring the map on the next page or another map of the sky of your choice! Don't have any maps and want some? Pick up a copy of "Nightwatch" by Terrance Dickenson at the local bookstore. It has excellent maps for this purpose!

### **Eclipse Expo!**

**Saturday, June 17, 2017**

**[www.eclipseexpo.org](http://www.eclipseexpo.org)**

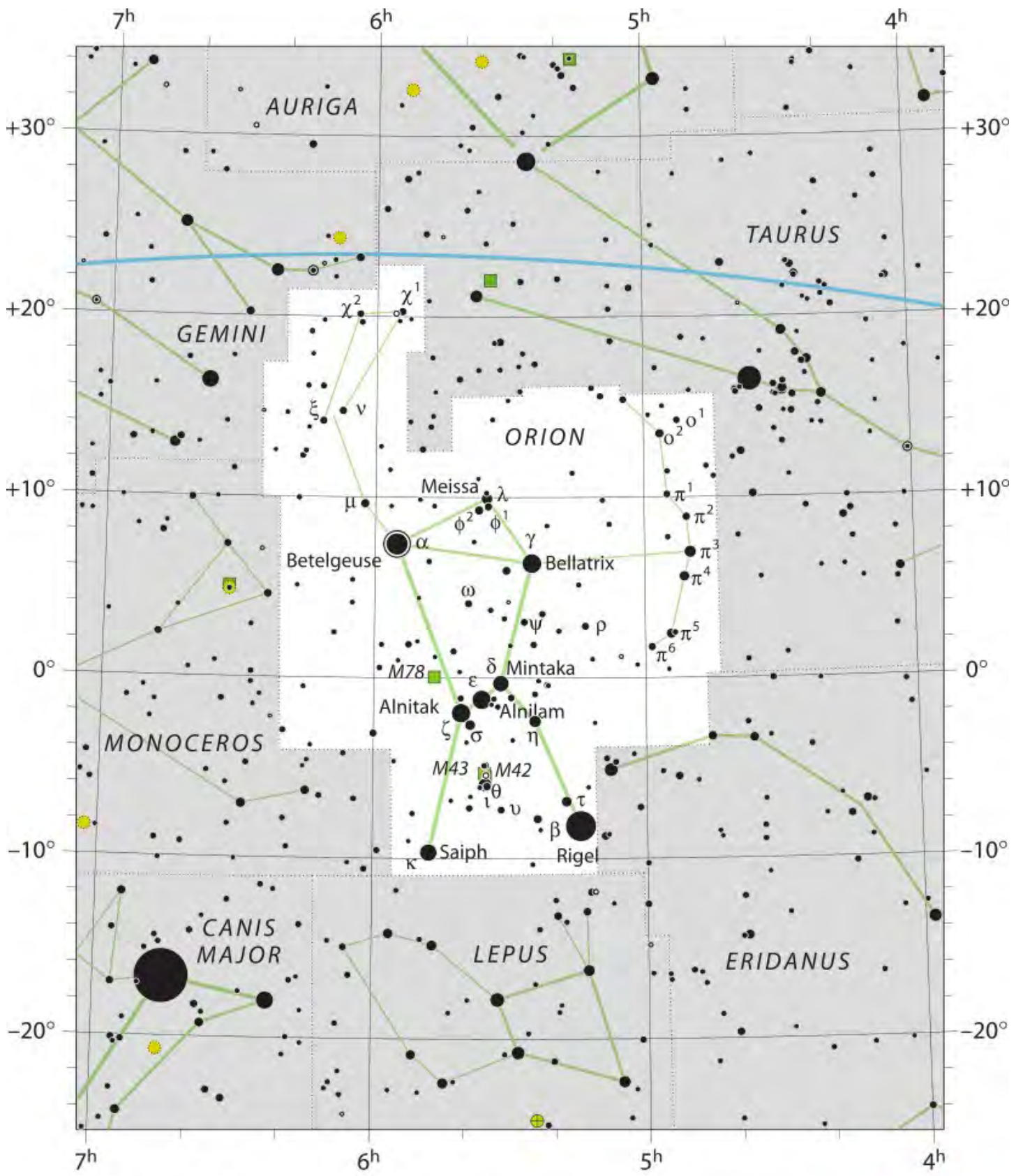
**This is one event you DON'T want to miss! We already have great exhibitors and speakers like nothing St. Louis has seen before. Be sure to sign up on the website for your FREE tickets for the expo! They are free as long as you sign up before the day of the expo! We already have nearly 2000 people signed up to attend at this writing!**

**Here is the link for tickets!**

**<http://eclipseexpo.org/index.php/>**

### **Joe Marcus to Speak on Rosetta Tuesday, April 25, 1:00pm—2:30pm**

SLAS members are welcome to attend the presentation, "Rosetta at Comet 67P," on Tuesday, 1:00-2:30 p.m., in the Earth and Planetary Sciences Dept. at Washington University, in Rudolph Hall, classroom #204? There will be significant updates to the Rosetta presentation at the April, 2015 SLAS meeting. This class is part of the course, "Planetary Geochemistry," taught by Prof. Bruce Fegley, Jr., and he has kindly granted permission for any interested SLAS members to sit in as guests on this date.



## SLAS Executive Board Meeting Minutes March 9, 2017

**Opening Activities:** Attending: Jim Small, Rich Heuermann, Larry Campbell, Tom Nickelson, Brad Waller, Mark Jones, Bill Winningham Meeting opened at 7:10 Minutes from Feb meeting distributed before the meeting. Brad submitted comments before the meeting. Motion to approve minutes with changes made by Tom N seconded by Rich H. Minutes approved.

**2. External Business Next board meeting:** Apr 6, May 4, Wed, Jun 7, Jul 6, Wed, Aug 9, Sep 7, Oct 5, Nov 9, Dec 7

### 3. Director Reports:

**President – Jim Small: Eclipse Expo.** Update. Speakers set. See <http://eclipseexpo.org/index.php/schedule> for list. Nearly 2000 tickets "sold"

**June SLAS Meeting at Queeny Park.** Friday night panel set. Plan for Friday night 6:00 – 7:30 interaction with vendors and astronomers. Hospitality during this time. At 7:30, introduction by President. Introduce Christian Greer as moderator for panel discussion. Meeting to last about an hour or a little more. We must be out of the facility at 9:30 pm. Brown paper ticket system for Friday meeting separate from expo ticket. Ticket "sales" are already well under way! Will try to accommodate up to 500 people for Friday night meeting. A block of 50 tickets reserved for Jim Small to use in case regular attendees of SLAS meetings did not get signed up. We will have signup sessions after each of the next three meetings.

### Bradley R Waller Speakers for 2017:

\*March: Christine Floss, PhD *"Astronomy with a Microscope: Studying Stardust in the Laboratory"*

\*April: Kevin Evans, PhD *"Weaubleau Impact Structure"*

\*May: Kara Kundert *"Skype Event" "First Light: Observing the Cosmic Dawn with Paperclips and a Supercomputer"*

\*June: *Eclipse Panel Discussion* with Angela Speck, Mike Reynolds, Michael Zeiler, Mitzi Adams, John Weis

\*July: Ryan Clegg-Watkins, PhD *"Exploring the Moon from Orbit: Paving the Way for Future Astronaut Explorers"*

\*August: TBD

\*September: *"Results from TSE"*

\*October: TBA

\*November: William McKinnon, PhD *"PLUTO"*

\*December: Amy E Kimball, *Skype Event "Radio Quasars & the VLA"*

Reflective Vests

**Astro 101** – March Ameren UE New LED Outdoor Lighting; April – Solar Filters

**Membership initiatives - Membership Initiative Prizes:** Inventory \*4 Books: "How I Killed Pluto..." Mike Brown (Signed) \*2 Eric photos signed by Mike Brown \*1 book: "An Astronauts Guide to Life on Earth" Chris Hadfield (Signed) \*1 CD: "Space Sessions" Chris Hadfield (Signed) Jim and Mark may have some books for give away

\*Neil deGrasse Tyson here in 18 May 2017. 2 tickets were purchased for a raffle event.

Welcome aboard new members meeting still planned for each month.

**Secretary – Mark Jones:** No report

**Treasurer/ALCor – Bill Winningham:** Sketches by Thane Bopp from 2017 Homemade Fest have been electronically scanned See motion for new insurance under **New Business**

**Hospitality – Larry Campbell:** No report

**Board member at large reports**

**Tom Nickelson: (2017):** No report

**Brent Buch (2018) –No report**

**Rich Heuermann (2019)** Discuss ISDC plans. See motion under **Old Business**

### 4. Committee Reports: If needed

**Membership** – See separate report. 158 members as of 2/28/2017. 21 new members last 12 months

**Library Telescope Program** – See separate proposal for Galileo-telescope Telescope Solar Program discussed under **New Business**

**Merchandise** – Infini-tees shirts for sale - \$20, Mugs \$7

**Librarian** – Started using the CLZ app to record books/videos

**Newsletter** – send articles in ready to go format! Plan to have newsletter out Sunday.

**Website** – [www.slasonline.org/joomla](http://www.slasonline.org/joomla)

Facebook page. Eclipse Expo website created

**Star Parties:** Review of outreach events next 3 months

**5. Old Business** ISDC – Rich H. coordinating with Christine Nobbe. ISDC's parent organization does lobbying. Board agreed we should support ISDC like we support IDA which conducts lobbying. Christine to present A101 to SLAS in Feb. Need Rich H to prepare overview of ISDC and SLAS contribution and benefits to SLAS members. Solar binocular, or LTP Rich is going to talk to Christine about prizes ideas.

Draft proposal from Dec 2016: The Board proposes that SLAS participate in the following way: sponsor one exhibitor table (\$100), make monetary donation \$150, conduct one or more of star/solar parties, publicizing on our website and newsletter and our communication, contribute one or more door prizes (need \$ amount), provide volunteers for conference logistics including registration. ISDP volunteers with 6hrs of work during conference would qualify for \$25 reg fee. No food or special programs Telescope viewing and SLAS table hours don't qualify. Rich will confirm POC for ISDC volunteer committee. Rich H will coordinate with Bill Breeden about setting up telescope viewing Friday and Saturday for ISDC on NSN. Table volunteers needed also Rich H will ask Christine about exhibit times

**Board proposing 2 pair binoculars totals of \$120.** Final motion: The Board proposes that SLAS participate in the ISDC in the following way: make monetary donation \$150 in support of the conference, conduct one or more star parties, publicizing of ISDC on our website and newsletter and our communication, contribute one or more door prizes (not to exceed \$120). In return SLAS members can qualify to a \$25 conference registration fee. (normally priced at \$330 IDSC non-member, \$230 member) by contributing 6 additional volunteer hours directly to the ISDC committee. Food and special events are not included. Motion by Brad W second by Tom N. Motion passed and will be taken to General membership for vote. Board further agrees that posting motion in Newsletter and through NSN messaging that Motion will be voted on at the March meeting.

**Board agrees to table the proposal to Membership committee. Recognition Proposal from December 2016.** An annual membership recognition award called "The Lois Fitter Lifetime Outreach Award" be created to recognize long-time outreach volunteers who have volunteered for 5 or more years of outreach for the society with a minimum of 5 events per year. A nomination form and selection committee will be created by the membership recognition chair and the award will be presented (if nominations are available) when outreach volunteer recognition pins are presented. Discussion took place with Board. Proposal was moved to Recognition Committee for development of a comprehensive recognition program that goes beyond Outreach. Prior to meeting Mark Jones sent out the following ideas for recognition awards for members and non-members who support our mission: The Lois Fitter Outreach Award - given to most dedicated or most improved outreach participant or coordinator must be a SLAS member

(Continued from page 5)

The Stuart O'Byrne Founders Award - given to board or committee person for service to SLAS, must be a SLAS member  
The Dick Schwartz Supportive Faculty Award - given to local educator at HS or college level who support SLAS mission don't have to be SLAS member

The Robert Cox Popular Astronomy Award - given to person having major contribution to popularizing astronomy does not have to be SLAS member

The Al Woods Mentoring Award - given to local amateur contributing to mentorship in astronomy, telescope and gadget making.

**6. New Business** SLAS insurance. Bill W obtained quotes for liability insurance (\$2M per occurrence). Special event insurance \$828 for 2 days coverage). Best company through Astronomical League through Fireman's Trust one-year policy for \$738. Board and directors insurance would be \$90/year. Insurance is an operational expense. Current policy expires May 1<sup>st</sup>.

**Motion-** Whereas, SLAS currently pays for \$1M coverage for annual general liability insurance as part of the operating budget Whereas, industry minimums for comparable organizations and event are normally for \$2M or more SLAS should increase their annual coverage to \$2M. Also comparable organizations cover directors and officers coverage SLAS should add this coverage as part of the annual operating expense. Whereas Article IX of the SLAS By-Laws states that operating expenses do not require membership vote. I (Bill Winningham) make a motion that the Board approve the operating expenditures needs to secure the \$2M general liability coverage and the \$100,000 Directors and Officers insurance. Current quotes received indicate this coverage will cost SLAS approximately \$900 per year as compared to current insurance premium of \$380/year. Motion seconded by Brad W. Motion passed by Board.

The St. Louis Astronomical Society agrees to transfer a quantity of Galileoscopes in the St. Louis Astronomical Society inventory to the Library Telescope Project Team. The total transfer quantity will be determined as follows:

1. To meet the demand of libraries who apply to participate in the program
2. To outfit the number of library telescopes that will be built for the K-12 checkout program (initially five/six, but expected to grow).
3. To outfit all library telescopes "trainer" scopes used by support teams

The \$10.00/telescope received from the libraries will be used to purchase the parts/supplies. Existing 17mm eyepieces already in the library telescope program stock will be used. Any excess funds over the build cost will be retained by the library telescope program in their escrow.

Motion by Don Ficken second by Tom N. Motion passed by Board.

**7. Closing Activities** Brad motion second Tom meeting adjourn at 9:05pm

### **NEW PROGRAM MAKES SOLAR TELESCOPES AVAILABLE TO LOCAL TEACHERS**

The Saint Louis Astronomical Society, in partnership with local libraries, announces a new program that makes solar telescopes available to local pre-college teachers. Teachers can borrow a "Sunspotter" solar telescope from participating library branches for use in the classroom. An information package provided with each telescope contains directions about the operation of the instrument as well as instructions for several activities related to the Sun and solar eclipses. The telescopes were funded by a grant from the

American Astronomical Society's National Science Foundation award to promote eclipse awareness. A total solar eclipse will occur on August 21, 2017. The eclipse path sweeps through portions of Missouri and Illinois.

Twelve solar telescopes will be placed in library branches in Saint Louis City, Saint Louis County, and Jefferson County. An additional telescope will be donated by the Astronomical Society of Eastern Missouri for circulation in the Saint Charles area. Each of the thirteen instruments will be available for loan to currently active pre-collegiate teachers for a period of one week, beginning April 18, 2017. The participating libraries will be De Soto, Ferguson Municipal, Jefferson County, St. Charles City-County, St. Louis County, St. Louis Public and University City. For loan periods prior to August 21, information about the upcoming total solar eclipse will be included. The loan program is planned to be continued after the solar eclipse.

"Sunspotter" telescopes are instruments used exclusively for viewing the Sun. They employ a small refracting telescope and a set of mirrors to project an image of the Sun safely, onto a white screen within the telescope. Several persons can view the image at a time. The telescopes display solar surface features such as sunspots on any clear day. They will also show the progress of the Moon's shadow on the Sun during the partial eclipse phases on August 21.

Funding for the Saint Louis area telescopes was provided by the Julena Steinheider Duncombe Mini-Grants Program of the American Astronomical Society Solar Eclipse Task Force, with support from the National Science Foundation. Only thirty-one proposals were funded nationwide. The Duncombe Mini-Grants are intended to inform and engage the public with the solar eclipse of August 21, 2017.

This solar telescope project is the first phase in an expansion of the library telescope program to local educators. Over 130 telescopes are now in circulation by participating libraries in eastern Missouri and southwestern Illinois. They are designed for night sky viewing by the general public. Library patrons may borrow a telescope for a one-week loan period. This expansion is intended to make a solar telescope available to local educators now, and night-sky telescopes available in the near future. The library telescope program for the general public will continue, offering the night-sky viewing instruments to library patrons. For more information about the solar telescope program and participating library branches, please visit the "Library Telescope" link available on [www.slasonline.org](http://www.slasonline.org). For information about the August 21 total solar eclipse, including maps of the eclipse path, safe viewing techniques, and the area's eclipse-based programs and activities, please go to [www.stlouiseclipse2017.org](http://www.stlouiseclipse2017.org).

The St. Louis Astronomical Society is an organization for individuals interested in astronomy and telescopes. The public is invited to attend its meetings, telescope observing sessions, and special events. For more information about St. Louis Astronomical Society events, please visit the website, [www.slasonline.org](http://www.slasonline.org), or call 314- 962-9231.

**St. Louis Astronomical Society**  
**Profit & Loss Budget vs. Actual**  
January through March 2017

	<u>Jan - Mar 17</u>	<u>Budget</u>	<u>\$ Over Budget</u>
Ordinary Income/Expense			
Income			
Total Magazine Subscription	316.54	98.85	217.69
Membership Dues	1,485.00	635.00	830.00
Total Income	1,781.54	733.85	1,047.69
Cost of Goods Sold			
Total Magazine Subscriptions	320.50	98.85	221.65
Merchandise		22.50	(22.50)
Total COGS	320.50	121.35	199.15
Gross Profit	1,461.04	612.50	848.54
Expense			
1-Programs & Events	498.21	787.00	(288.79)
2-Newsletter	13.03	44.00	(30.97)
3-Library expense		75.00	(75.00)
5-Loaner Scopes	5.00	25.00	(20.00)
7-Insurance*	825.50	380.00	445.50
8-Website	179.40	170.00	9.40
9-Administrative Expenses	48.48	424.50	(376.02)
Total Expense	1,569.62	1,905.50	(335.88)
Net Ordinary Income	(108.58)	(1,293.00)	1,184.42
Other Income/Expense			
Other Income			
Donations	250.00	0.00	250.00
Eclipse Escrow Receipts	6,023.06	0.00	6,023.06
Interest Income	3.83	25.00	(21.37)
LTP Receipts	1,015.00	0.00	1,015.00
Total Other Income	7,291.89	25.00	7,266.89
Other Expense			
Eclipse Escrow Disbursements	357.59	0.00	357.59
Eclipse Escrow Funding	1,000.00	1,000.00	0.00
LTP Disbursements	471.80	0.00	471.80
LTP Escrow Funding	1,000.00	1,000.00	0.00
Total Other Expense	2,829.39	2,000.00	829.39
Net Other Income	4,462.50	(1,975.00)	6,437.50
Net Income	4,353.92	(3,268.00)	7,621.92

\* Reflects expanded insurance coverage over prior years

**St. Louis Astronomical Society**  
**Balance Sheet**  
As of March 31, 2017

	<u>Dec 31, 16</u>	<u>Mar 31, 17</u>
ASSETS		
Current Assets		
Checking/Savings		
Checking - First Bank	3,957.19	2,200.20
Deposit, Certificate of	20,148.49	20,148.49
Library Telescope Escrow	799.33	1,342.73
PayPal	128.42	97.58
Savings - First Bank	29,755.97	29,759.80
SLAS Eclipse Conference Escrow	8,259.97	11,912.89
YMCA Trout Lodge Escrow	542.87	482.87
Total Checking/Savings	61,580.24	65,944.16
Other Current Assets		
Inventory Asset	1,360.92	1,360.92
Total Other Current Assets	1,360.92	1,360.92
Total Current Assets	62,951.16	67,305.08
Total Fixed Assets	0.00	0.00
TOTAL ASSETS	62,951.16	67,305.08
LIABILITIES & EQUITY		
Equity		
Opening Bal Equity	8,137.68	8,137.68
Retained Earnings	24,813.28	54,813.50
Net Income	30,000.24	4,353.92
Total Equity	62,951.16	67,305.08
TOTAL LIABILITIES & EQUITY	62,951.16	67,305.08

**Wanted: Volunteers!**

**Be sure to sign up on Night Sky Network for upcoming star parties. Lead volunteers need to know who will be there so they can tell where we are falling short. If you aren't sure how to RSVP, please ask anyone at the meeting and we can show you how on the computer after the meeting. Or contact any board or committee member to find out. See you at the next star party!**

## 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.

2017: Apr 6; May 4; Jun 7 (Wed); Jul 6; Aug 9 (Wed); Sep 7; Oct 5; Nov 9; Dec 7

#### 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 3, May 31, June 28, July 26, August 30, September 27, October 25

**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!

2017-04-23	7:30 PM		
2017-05-21	8:00 PM	2017-06-18	8:30 PM
2017-07-16	8:00 PM	2017-08-13	8:00 PM
2017-09-17	7:00 PM	2017-10-15	6:30 PM
2017-11-12	6:00 PM	2017-12-10	5:30 PM

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

**YMCA Edward Jones Star Parties** (generally third Mondays)

**Pattonville Observatory Public Viewing Dates**

**Broemmelsiek Astronomy Park Public Viewing**  
Every Friday night with ASEM members

**UMSL Observatory**  
For directions and map  
<http://www.umsi.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.

#### April

20 Thur	Manchester Parks and Recreation
20 Thur	Jana Elementary STEM
21 Fri	SLAS Regular Meeting
21 Fri	Kirkwood Park Snores and Smores
21 Fri	Belleville West Astronomy Club
22 Sat	SLAS Dark Sky Observing
23 Sun	SLAS Sky Orienteering Event
26 Wed	Lone Dell Eclipse Presentation
28 Fri	Hillsboro Elementary
29 Sat	National Astronomy Day
29 Sat	Ballwin Family Campout

#### May

1 Mon	De Soto Public Library
1 Mon	Corporate Parkway
2 Tue	Lewis and Clark Library Eclipse
3 Wed	Francis Park
3 Wed	Middendorf-Kredell Library
4 Thur	Jamestown Bluffs
4 Thur	St. Clair Library
4 Thur	Deer Run Library
4 Thur	SLAS Board Meeting
5 Fri	Public Telescope Viewing SLSC
5 Fri	Forsyth School
6 Sat	Stargazing at Crestwood Park
9 Mon	Lone Dell Eclipse
9 Mon	Mississippi Valley
9 Mon	Union Library
10 Tue	Clyde Hamrick
10 Tue	Arnold Library Eclipse
13 Sat	Prairie Commons Library
13 Sat	Night Skies Over Babler
13 Sat	St Clair Solar Ambassadors
15 Mon	Edward Jones YMCA
19 Fri	SLAS Regular Meeting
20 Sat	Sidewalk Solar SLSC
20 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

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

**Vice President** *Brad Waller* 314-481-7250  
 vicepresident at slasonline.org

**Secretary** *Mark Jones* 636-394-2342  
 secretary at slasonline.org

**Treasurer** *Bill Winningham, (Don Ficken - membership)* 636-225-0269  
 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  
 Board18 at slasonline.org

*Tom Nickelson* 314-346-9565  
 board17 at slasonline.org

**ALCOR** *Bill Winningham* 636-225-0269  
 (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

**Membership** *Don Ficken* 636-225-0269  
 membership at slasonline.org

**Newsletter Editor** *Jim Small* 314-909-7211  
 newsletter at slasonline.org

**Observing Programs** *Mark Jones* 636-394-2342  
 observing at slasonline.org

**Publicity** *Rich Heuermann* 314-962-9231  
 publicity at slasonline.org

**Recognition** *Larry Campbell* 636-244-2867  
 recognition 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

**Webmaster** *Jim Small* 314-909-7211  
 webmaster 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>

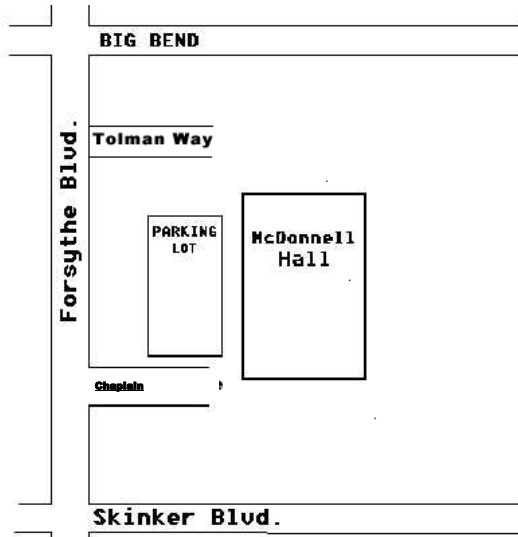


**Who We Are and What We Do**

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

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