

THE EVENT HORIZON



ST. LOUIS ASTRONOMICAL SOCIETY

Devoted to the Interest and Advancement of the Science of Astronomy

**VOLUME 27, Issue 5
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Mid States Region



First Light: Observing the Cosmic Dawn with Paperclips and a Supercomputer

by
Ms. Kara Kundert
University of California - Berkeley

Ms. Kara Kundert of the University of California - Berkeley, will be featured at the May meeting of the St. Louis Astronomical Society. The meeting will begin at 7:30 PM Friday, May 19, in McDonnell Hall, Room 162, on the Washington University campus, Saint Louis, MO 63130. McDonnell Hall is accessible from Forsyth Boulevard via Tolman Way. Yellow zone and street parking are available to the audience. The event, cosponsored by NASA's Missouri Space Grant Consortium, is open to the public free of charge.

Our understanding of the first billion years of the universe is hazy. It was during this time that the first stars and galaxies formed. However, we lack the ability to probe the physical nature and understand the detailed conditions of the seeds that have become our current universe. This stage in the history of the universe is called the Epoch of Reionization (EoR). It is the period of time over which hydrogen gas transitioned from being neutral to ionized. Studying how and when reionization took place will fill in many of the gaps in our understanding of the formation of the modern-day

universe. Ms. Kundert will be speaking about some of the current and proposed techniques for observing this exciting period of our universe's history. She will particularly focus on observations in radio wave cosmology, and what they could tell us about the universe we live in.

Kara Kundert is a graduate student in the Department of Astronomy at UC Berkeley. She is studying the epoch of reionization and a radio telescope technique called radio interferometry. For her thesis, she will be building a low-frequency interferometer with which to observe the 21cm "global signal" of reionization. She will present her lecture from Berkeley via the internet.

ASTRO 101 for May: Sunspotter and Galileoscope Press Releases

Upcoming Meetings:

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

October: Heinric Krawczynski, Wash U

November: William McKinnon, PhD
PLUTO Wash U

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Douglas Brandt Kniffen

February 26, 1960 - May 13, 2017

It is with great sadness that we report that Doug Kniffen passed away Saturday. Visitation will be held on Tuesday, May 23, 2017 from 5:00 pm - 8:00 pm at Martin Funeral Home in Warrenton.

Martin Funeral Home
510 E Booneslick Rd
Warrenton, Missouri 63383
Phone: (636) 456-3316

For more information, [click here](#).

See the article on page 3 for more about Doug.

Presidents Corner - Jim Small

Elections will be held at this month's meeting.. Nominations will be accepted until we vote. Nominees are: President, Jim Small, Vice President, Brad Waller, Secretary, Mark Jones, Treasurer, Bill Winningham, Hospitality, Larry Campbell, Board Member at Large, Tom Nickelson.

THE JUNE MEETING WILL BE HELD FRIDAY, JUNET 16, AT 7:30PM 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!

YOU MUST HAVE A TICKET FOR THE MEETING!.

There are currently 335 people signed up for the Friday meeting at Queeny. Please sign up at www.eclipseexpo.org to get your free ticket for the meeting. In case you forget, I have 50 tickets reserved in my name to make sure people who come that don't know about the tickets can get in. **BUT YOU KNOW ABOUT IT, SO GET A TICKET!** We can help you sign up at the May meeting.

There are currently over 3269 people signed up for the Eclipse Expo. The Eclipse Task Force will be meeting Wednesday, May 17 at the St. Louis Science Center in the T-Rex room from 5-7. If you haven't signed up for the expo, be sure to visit 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 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. We will also be looking for volunteers at a star party for the event on the evening of Saturday, May 27. There also might be an opportunity for some solar viewing if you wish.

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>

MSRAL will be held 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

Find your *Spirit* of
Exploration & Discovery

From the first steel alloy bridge,
To the first transatlantic flight,
To the first manned US orbiter,
And beyond...

Meet me in St. Louis
Meet me at ISDC 2017

International Space Development Conference®
May 25 - 29, 2017
St. Louis Union Station Hotel
isdc.nss.org/2017
Hosted By
National Space Society



And that's a Winner!

At the April meeting, we drew for the winner of the tickets to see Neil de Grasse Tyson at the Peabody Theater, Thursday, May 18.

The winner of the two tickets was Christine Nobbe! (Pictured here on the left) Congratulations, Christine!

**Eclipse Expo!
Saturday, June 17, 2017**

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/>

Doug Kniffen

Doug Kniffen passed away Saturday, May 13. While I don't feel qualified to speak about Doug much, I did some digging and found some photos. I also had one testimony about Doug I thought I would share.

John Beaury was kind enough to relate a recent experience with Doug at Danville under some dark skies. Here are John's thoughts:

I just spent a wonderful night under the stars with Doug on Sunday, April 23rd. I had missed the monthly Saturday night observing session at Danville. Weather looked promising for Sunday night and a few others had posted to indicate they would be going up. I decided to go myself.

I got there in the late twilight and it was already getting dark. As I pulled onto the observing lot there was only one other vehicle there and it appeared to be about to leave. I stopped along side and realized it was Doug Kniffen. He apparently did not want to be alone out there, but with my arrival and urging he agreed to stay a while.

As I setup my telescope and equipment he sat down in a lawn chair. It was just the two of us. This was quality time for any astronomer. The temperature was pleasant, the skies better than expected for Danville, and it was quiet. The nocturnal wildlife was in full song and a chorus of coyotes howling in the distance.

I think this was the first time in probably years I have seen Doug not wearing his signature sunglasses. I always assumed the sunglasses were more than a style statement for him. As he explained it, he suffered from glaucoma which was making it difficult for him at the eyepiece. I shared some views through my telescope for what he could benefit from, but mostly he was content sitting in the lawn chair and just talking in the peace of the night.

He was calm and relaxed, and we had some good conversation through the evening. Naturally, we talked about astronomy, weather and the sky. We also talked about our homes and improving them and our families. We also talked about things like our health and getting older. He did not indicate to me that he was suffering from any serious or terminal problems other than life itself.

I have to say I really enjoyed the evening with Doug. It was my first bit of serious eyepiece time since last fall and I needed to get out and have a good evening. Doug was truly icing on the cake. We finally wrapped things up a little after midnight. I packed the car and we each headed home. In the future as I'm reminded of Doug I am sure my thoughts will drift back to this fine night under the stars with him as my companion.

Doug, may your path be well lit by the Milky Way. Thanks for your time.

-John Beaury, SLAS

Right: Doug talks about taking Milky Way Mosaics at MSRAL 2009

Below Top: Doug's Pickney Observatory in the Fall, 2002

Below Middle: Comet Q2 photo by Doug Kniffen, December 15, 2004

Below Bottom: Pickney Observatory with aurora on November 8, 2004



Danville Stargazing Report

April 22, 2017

by Bill Breeden

Risk. Reward. These two terms are often associated with each other. The risk tonight was simple: Would a drive all the way out to Danville be a waste of time and gas, given that the clear-sky forecast was only marginal for tonight? I had been watching the forecast for Saturday night, April 22 (the SLAS Dark-Sky night) since Thursday. It originally looked as if Friday's complete cloud-cover would lift on Saturday just in time for stargazing, but by Saturday morning, the forecast had worsened. Clouds would persist until after 2am, a no-go for Danville. As the day progressed, the forecast improved - now showing 26% cloud-cover at 8pm and clearing! That was good enough for Cook Feldman - I received a text message from him that he was going to Danville. That was all I needed - and I was on my way out there too!

I arrived at the Danville Wildlife Area, SLAS's de-facto Dark-Sky observing site, at 7pm, to find Cook already there, his 8-inch Dobsonian telescope set up and all. As I unloaded my 8-inch LX90 Schmidt-Cassegrain and all the various gear and creature comforts, I looked up. Gorgeous deep-blue clear sky, with a faint, narrow wisp of clouds in the northeast covering only about 10 degrees of sky. They soon dissipated, leaving us with Totally Clear Skies. Think Risk-Reward - the "reward" part had just begun.

Jupiter appeared first, shining very brightly against a very dark-blue clear sky in the southeast. It was time to give my new 9mm Televue DeLite eyepiece a try, since I had bought it mainly for observing planets. The view of Jupiter was nothing short of amazing! The north and south equatorial bands were clearly visible, with hints of swirls between them. All four Galilean moons (which I learned from Cook that Galileo had originally named the Medician stars, to honor the Medici family) were visible tonight, two on one side of Jupiter, and two stacked vertically on the other side. It was quite a sight!

The real Jupiter treat was located very near the middle of Jupiter's disk. In my 13 years of active observing, I have seen the Great Red Spot (GRS) so few times, that I really don't even look for it, so I am never sure what I am seeing. Is that a shadow transit? No, the moons are not placed properly for that. Is it a seeing phenomenon? No, it is too persistent. It was only when Cook verified that it was the GRS (the next morning) that I know what I saw. Cook and I did suspect it, but just could not be sure at the time of observation. If you do look for the GRS, I can tell you that it is (a) smaller than you expect, (b) persistent (as opposed to bad seeing anomalies), and (c) it is not obviously RED in color. In fact, I don't remember a color at all - it was more like a little bump on the planet between the bands.

It was dark enough now to catch a view of the Orion Nebula (M42) before it was gone for the season. Near the end of April, it is rapidly getting very low in west in the evening twilight. I switched to my 24mm Panoptic eyepiece, and slewed my scope to M42. The evening twilight and M42's low altitude washed it out somewhat, but it was still a pretty sight. The Trapezium was clear and bright, and the nebula's "wings" did not seem to spread out as far as usual due to the twilight and altitude. It was nice to observe M42 in mild weather!

At last, it was time to turn the telescope toward Leo, the signpost constellation of Spring, for some deep-sky observing! I began with the Leo Triplet, which consists of two Messier galaxies (M65 and M66), and one NGC galaxy (NGC3628). M66 appeared brighter and more compact than M65, although I was surprised at how striking these two galaxies are. I should observe them more often! M66 shines at magnitude 9.7, and M65 at 10.3. NGC3628 is actually brighter than the two Messiers (magnitude 9.4), but its light is spread out over a larger area, and thus it appears fainter in the eyepiece. Still, the observation of M65 confirmed that we had skies of at least magnitude 10.3 quality tonight! Did I mention Risk / Reward? Ha! We had only begun...

Leo is a treasure-trove of galaxies. Next, I headed westward to M95, M96, and M105. (Yes, the Messiers still have a hold on me!) M95 is a wonderful face-on spiral shining at magnitude 9.8, and M96 is a slightly tilted spiral, magnitude 9.3 galaxy. Both are great targets! M105 is an elliptical (aka smudge) glowing at magnitude 9.5. It appears basically round, with a core that is hard to place.

Cook began some serious galaxy hunting in Leo. One such galaxy he chose was NGC3226, a magnitude 11.4 galaxy near the star Algeiba. I pointed my scope there as well. This galaxy has a very close companion, NGC3227, at magnitude 10.4. Both galaxies were visible in my 19mm Panoptic eyepiece. In Cook's 20mm Explore Scientific 100-degree AFOV eyepiece, the view was crisp, clear, and awe-inspiring. The pair could be called a double-galaxy; they are so close together in the sky that their cores appear sort of like a double star. Magnificent! Observing this pair also confirmed that our skies were now at a quality of magnitude 11.4. Outstanding!

Another galaxy I selected for hunting in Leo was NGC3640, a small 10.3 magnitude beauty in the southern section of the constellation, just below the line of the ecliptic. It measures about 4 by 3 arcminutes, and it appeared among several background stars in Cook's 20mm Explore Scientific "monster" 2-inch eyepiece. The view was amazing! In my 24mm Panoptic, with "only" a 68-degree apparent FOV, the view was very nice as well.

We hunted numerous other faint-fuzzy galaxies in Leo, some easier to find by star-hopping than others. Occasionally, a goto via my SCT or Cook's digital setting circles was needed to confirm a find, but the selection of objects, as well as the hunt, is all part of the fun. Once the object is found and confirmed, the rest of the fun comes simply from observing a distant galaxy 29 million light-years from earth. It never gets old.

The theme tonight has been Risk and Reward. If it has been awhile since you have made the trip out to our Dark-Sky site (Danville) to observe, I implore you to give it a go during one of SLAS's Dark-Sky nights. Cook and I were the only ones out there tonight, and we thought about all the people that missed out on such a nice night of galaxy hunting. Although the forecast was not perfect, we "risked it," and reaped the beautiful cosmic rewards! Most of these events are posted on Night Sky Network, so if you can make it, RSVP "Yes" and let's have a star party. Won't you join us next time?

Clear Skies,
Bill Breeden

Lunar X Visible June 1 by Grant Martin

On June 1st, the "Lunar X" peaks at 6:53, which for most normal people is usually right after dinner. Think of this as an "Astronomical dessert"!

The Sun is still up but the Moons' angular distance from the sun is over 95 degrees away. This means it is well placed in darker blue sky for a very pretty sight. Personally, I find the lighting within an hour after sunset to be just about right for observing the first and last quarter moons. The moon does not "overwhelm" my eye with excessive brightness against the jet black background. To me, the background seems to enhance the detail as my eyes are not yet jumping back and forth between low light and bright light views.

While the Sun is still two hours from setting when the peak X occurs, the Moon is still a very nice sight and observable in any instrument. If you find the overall brightness a little much, try using a red filter - it can enhance the detail under brighter blue sky conditions.

The Lunar X is a wonderful show-piece on the moon during outreach events. It easily demonstrates the movement of the terminator as the sun "rises" on the moon and the new lunar observer can see and remember the various changes to the image as the sun angle changes in a relatively short period of time - it's a constantly changing view that never gets old!

Some views of the "Lunar X" at specific Sun angles during the event

Times for selected event phases:

"Start" Sun Angle -1.9	Sun angle -1.45	"Mid event" Sun Angle -1.066	Sun Angle -0.54	Peak "X" Sun Angle 0	"End" Sun Angle 1.18
14:46	15:45	16:35	17:43	18:53	21:15

Moon & Sun ALT/AZ values for start and peak times:

At Start (sun angle -1.9)				At Peak (Sun Angle 0.0)			
Moon Altitude at start	Moon Azimuth at start	Sun Altitude at start	Sun Azimuth at start	Moon Altitude at Peak	Moon Azimuth at Peak	Sun Altitude at Peak	Sun Azimuth at Peak
19.15	96.86	61.77	241.79	56.01	161.21	14.79	286.76

FOR SALE:

Brand new 18" Newtonian telescope and mount, great optics! Come take a look!

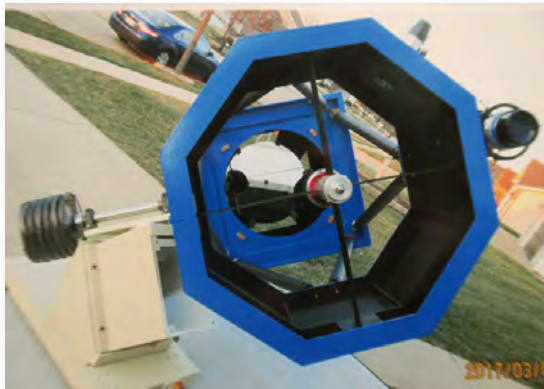
Optical tube assembly

- Mirror box 28"x28" square
- Secondary cage is octagonal 29"x29"
- Struts 1" diameter, 26" long
- Total length of scope 6'4"
- Mirror – Don Loomis Mirror 18", 2" thick, 1/10 wave, RMS 1/32 wave or better.
- 18 point flotation cell
- Total weight 400 lbs

Price: \$5500-6000

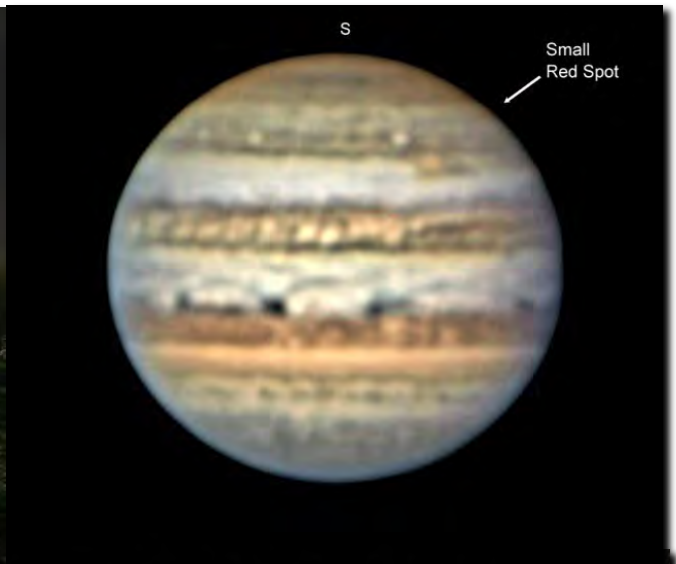
Contact:

**Oliver Deppong
6022 Timber Hollow Lane
High Ridge, MO 63049
Phone: 636-328-4711**





Upper left: Enthusiastic Pattonville astronomy students! **Upper Right:** One of many patrons getting a view of Jupiter through the "planet killer" Stellarvue 4"f11 refractor. **Middle Left:** That's the real JOHN Beury taking a gander at Jupiter. **Below:** May 8th image of Jupiter taken by Jim Melka. **Bottom:** Most of the field at the First Friday event at the James S. McDonnell Planetarium on April 7.



45cm Newt 2017-05-08, 04:34UT Dia 42.9 De -2.9 Ds -2.8 Ls 201
S6/10 T6/6 CM I 288.6° CM II 156.0° CM III 283.2° Mag -2.4
DBK21AU618 AS, PIPP 2.3.7, Registax 5.1 Pic Window 6.0
Jim Melka Chesterfield, MO, 900 raw color frames



SLAS Executive Board Meeting Minutes April 6, 2017

1. Opening Activities: Attending: Jim Small, Brad Waller, Mark Jones, Bill Winningham, Larry Campbell, Brent Buch, Rich Heuermann, Tom Nickelson, Michelle Birch
Meeting opened at 7:00pm. The March meeting minutes were distributed before the meeting. Motion to accept minutes by Tom N seconded by Bill W, minutes approved

Michelle Birch – Michelle raised some very good advertising ideas including: replacing the SLAS Brochure with printed Postcard and starting a Public Facebook Page. Michelle volunteered to look into both of these. Board agreed to have Michelle start the Facebook page as soon as possible.

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

3. Director Reports:

President – Jim Small: ELECTIONS: Elections are in May. Per By-Laws we open nominations in April. What positions do we need to fill? All members who were at the meeting agreed to run for another term. Pres – Small, VP – Waller, Tres- Winningham, Sec – Jones, Hospitality- Campbell, BMAL- Nickelson

MSRAL Convention: June 9-11 Registration page is up. Costs reasonable, format familiar [Registration and Information Page](#)

Eclipse Expo. Update. 2273 tickets 'sold' as of this date. 65 exhibits booked. Speakers are set. See website link <http://eclipseexpo.org/index.php/schedule> for list.

June SLAS Meeting will be at Queeny and have a eclipse panel discussion. 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.

Vice President: Bradley R. Waller Speakers for 2017: *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: Henric Krawczynski *November: William McKinnon, PhD "PLUTO" *December: Amy E Kimball, Skype Event "Radio Quasars & the VLA" January: Carl Bender

August SLAS meeting: Meeting is Friday before the eclipse. Who will be here? Should we partner with SLSC and have an informational meeting: Weather, Safety, Where to go, etc.

Reflective Vests Update: John Beaury has donated free vests. Brad will bring to vests to meeting for people to try on for size. WU won't ticket parking in April due to Thirteen Carnival

Astro 101 – April – Solar Filters, Need ideas for May, July and August

Membership initiatives - Membership Initiative Prizes: Inventory *4 Books: "How I Killed Pluto..." Mike Brown (Signed) *2 Eris 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 Update:** Ticket drawing will be at April SLAS meeting. Tyson will be here 18 May 2017.

Welcome aboard new members meeting still planned for each month.

Secretary – Mark Jones: No report

Treasurer/ALCor – Bill Winningham: Report distributed before the meeting. A \$7300 check received from lens sales since Jan 1st. Insurance per the approved motion last month was paid and signed for \$825. Insurance coverage effective May 1st and will cover Queeny Park Expo. Balance sheet through March 31, 2017 has current assets at \$65K. This includes about \$12K in the eclipse escrow.

Hospitality – Larry Campbell: Larry gave a talk to the Rotary Club on the Library Telescope Program

Board member at large reports

Tom Nickelson: (2017) No report

Brent Buch (2018) – Update on publishing videos of SLAS meetings to Youtube Private YouTube account is very difficult for people to view SLAS videos. Permissions have been difficult to setup. Tom and Brent will discuss YouTube options

Rich Heuermann (2019) ISDC runs Thurs 2pm to Monday Exhibit tables open 2-4pm each day. SLAS will host a Star Party Thursday night and possible another night. ISDC volunteers need to contact Christine Nobbe directly. Also, the SLAS membership approved at the April general meeting the expenditures outlined at the April Board meeting. SLAS will make monetary donation of \$150 in support of the conference, conduct one or more star parties, publicize the ISDC on our website and newsletter and our communication, contribute one or more door prizes (not to exceed \$120).

4. Committee Reports: If needed

Library Telescope Program: (Don Ficken) Replacement rubber eyeguards received from Celestron. (3 dozen). No charge for cups. Our 2017 expansion plans for the Library Telescope Program were scaled back so that we can focus on the August 21, 2017 Total Solar Eclipse. As fortunes would have it, we managed to win a grant to fund a pilot program where "SunSpotter" solar telescopes are placed into libraries for exclusive checkout by teachers. We are not aware of anyone else doing this program. 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 K-12 teachers for a period of one week, beginning April 18, 2017. Also, the Board approved last month the transfer of the SLAS Galileoscope to the Library Telescope Committee for construction of solar projection telescopes. SLAS will provide the scopes and left over 17mm eyepieces. Additional construction materials will be paid for by the receiving libraries. Estimated charge is \$10 per scope.

Membership – Report distributed before the meeting. Our membership count is 164 members compared to 157 members for the same period last year. However, we are down two members from the 166 membership count reported for the beginning of this year.

Merchandise – Infini-tees shirts for sale - \$20, Mugs \$7 TSE mug???

Newsletter – send articles in ready to go format! Plan to have newsletter out Monday or Wednesday.

Website – www.slasonline.org/joomla

(Continued from page 7)

Night Sky Network – SLAS received new Eclipse Toolkit including glasses, activity support, and Powerpoints

Star Parties: Review of outreach events next 3 months

5. Old Business

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
- 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

Loaner Telescope Program– Received donation of equipment from Lynn Fee: Orion 127mm Mak-Cass and case, Vixen 80mm binocular telescope and 3 sets of eyepieces, Orion mount, Pentax 20x60mm binoculars, Coronado PST, Assorted eyepieces, Rigel finder, filters, case, Bogen camera tripod and binocular adapter.

Discussed obtaining cases for PST’s and other equipment in 2018 Budget. Discussed moving the loaner telescope program storage and operation. Idea tabled until after Expo.

7. Closing Activities Mark made motion to adjourn, second by Tom. Meeting adjourned at 9:27



Ray Mueller with the 56’ Eclipse Map above and talking about the eclipse in Missouri below and below left. Bill Bierman is manning the SLAS table in the lower left and explaining the Sunspotter telescope. The event was at Hillsboro on April 28.



St. Louis Astronomical Society Profit & Loss Budget vs. Actual January through April 2017			
	Jan - Apr 17	Budget	\$ Over Budget
Ordinary Income/Expense			
Income			
Magazine Subscription	346.49	98.85	247.64
Membership Dues	1,830.00	860.00	770.00
Total Income	1,976.49	958.85	1,017.64
Cost of Goods Sold			
Magazine Subscriptions	350.45	98.85	251.60
Merchandise	22.50	22.50	(22.50)
Total COGS	350.45	121.35	229.10
Gross Profit	1,826.04	837.50	788.54
Expense			
1-Programs & Events	588.58	1,343.00	(754.44)
2-Newsletter	97.31	58.00	39.31
3-Library expense	100.00	100.00	(100.00)
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	74.04	574.00	(499.96)
Total Expense	1,769.81	2,850.00	(880.19)
Net Ordinary Income	(143.77)	(1,812.50)	1,668.73
Other Income/Expense			
Other Income			
Donations	500.00	0.00	500.00
Eclipse Escrow Receipts	6,815.34	0.00	6,815.34
Interest Income	5.04	33.34	(28.30)
LTP Receipts	1,112.20	0.00	1,112.20
Proceeds from Lens Sales	7,303.37	0.00	7,303.37
Total Other Income	15,735.95	33.34	15,702.61
Other Expense			
Eclipse Escrow Disbursements	357.59	0.00	357.59
Eclipse Escrow Funding	1,000.00	1,000.00	0.00
LTP Disbursements	471.60	0.00	471.60
LTP Escrow Funding	1,000.00	1,000.00	0.00
Total Other Expense	2,829.19	2,000.00	829.19
Net Other Income	12,906.76	(1,966.66)	14,873.42
Net Income	12,762.99	(3,779.16)	16,542.15

* Reflects expanded insurance coverage over prior years

** Outreach budget reflects \$150 approved by membership vote as a donation towards the International Space Development Conference.

St. Louis Astronomical Society Balance Sheet As of April 30, 2017		
	Dec 31, 16	Apr 30, 17
ASSETS		
Current Assets		
Checking/Savings		
Checking - First Bank	3,957.19	2,366.71
Deposit, Certificate of	20,148.49	20,148.49
Library Telescope Escrow	799.33	1,342.73
PayPal	126.42	535.36
Savings - First Bank	29,755.97	37,064.38
SLAS Eclipse Conference Escrow	6,259.97	12,412.69
YMCA Trout Lodge Escrow	542.87	482.87
Total Checking/Savings	61,590.24	74,353.23
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	75,714.15
Total Fixed Assets	0.00	0.00
TOTAL ASSETS	62,951.16	75,714.15
LIABILITIES & EQUITY		
Equity		
Opening Bal Equity	8,137.66	8,137.66
Retained Earnings	24,813.26	54,813.50
Net Income	30,000.24	12,762.99
Total Equity	62,951.16	75,714.15
TOTAL LIABILITIES & EQUITY	62,951.16	75,714.15

**WANTED: Newsletter Articles
and Pictures!**

**The Event Horizon needs articles
and pictures from people like YOU!**

**Interviews, current astronomy
topics, historical articles, star party
reports, you name it, we can use it!**

**Send what you have to:
newsletter@slasonline.org**

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 meet-
ing and we can show you how on the comput-
er 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: 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 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!
2017-06-18 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.umsu.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.

May

15 Mon	Edward Jones YMCA
19 Fri	SLAS Regular Meeting
20 Sat	Sidewalk Solar SLSC
20 Sat	SLAS Dark Sky Observing
21 Sun	SLAS Sky Orienteering
25 Thur	Jamestown Library
25 Thur	ISDC Conference
26 Fri	ISDC Conference
27 Sat	ISDC Conference
27 Sat	SLAS/ISDC Star Party
28 Sun	ISDC Conference
29 Mon	ISDC Conference
30 Tue	Kisker Road Library
31 Wed	Francis Park
31 Wed	Spencer Road Library

June

1 Thur	Belleville West
2 Fri	SLSC Public Telescope Viewing
3 Sat	Library Telescope Build
4 Sun	Stargazing at the Arch
5 Mon	Deer Run Library
5 Mon	St Louis Stake Young Women Cmp
7 Wed	SLAS Board Meeting
8 Thur	Boy Scout UMSL
9 Fri	Natural Bridge Library Solar
9 Fri	MSRAL
10 Sat	Great Rivers Greenway
10 Sat	MSRAL
11 Sun	MSRAL
13 Tues	Leadership Program
14 Wed	Rock Road Library
16 Fri	SLAS REGULAR MEETING AT QUEENY PARK
17 Sat	ECLIPSE EXPO QUEENY PARK
18 Sun	SLAS Sky Orienteering

SLAS Merchandise Available

SLAS merchandise is now set up for embroidery at

Headz n Threadz at <https://hnt.threadthis.com/>

There are two locations:

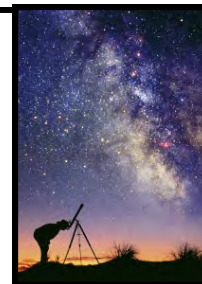
Galleria: 2495 St. Louis Galleria, St. Louis, MO 63117 Telephone: 314.862.2695
galleria@headznthreadz.com

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	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
lirbrarytelescope 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		
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 Breden	314-276-3613
starparty at slasonline.org		
Telescope Making	Bill Davis, Jim Melka	314-469-3061
telescope at slasonline.org		
Webmaster	Jim Small	314-909-7211
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>

Follow us on
Twitter: @stlastro
Facebook: @stlastro

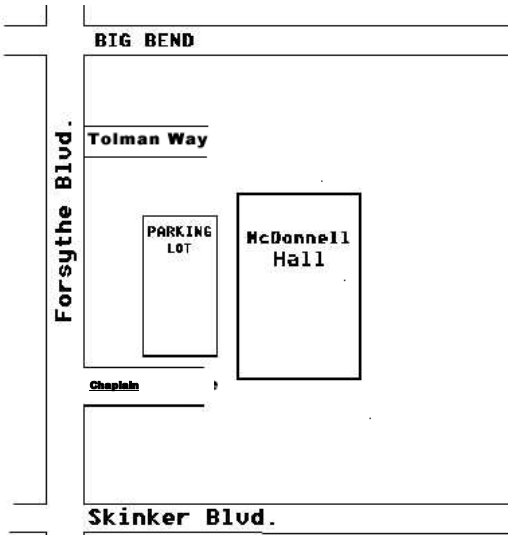


Who We Are and What We Do

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

