

# THE EVENT HORIZON



## ST. LOUIS ASTRONOMICAL SOCIETY

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

**VOLUME 24, Issue 1**  
**January, 2014**

### **Astrophotography: Pro Results Using Amateur Tools**

*by*  
**Dan Crowson**

**Astrophotographer Dan Crowson** will be featured at the January meeting of the St. Louis Astronomical Society. The meeting will begin at 7:30 PM Friday, January 17, in McDonnell Hall, Room 162, on the Washington University campus, Saint Louis, MO 63130.

Photographing objects in the night sky is a challenging activity. Most astronomical objects are quite dim, so just finding them in a telescope can be difficult. Then the Earth's spin puts the sky in constant motion, so keeping the object in view can be difficult. But advances in telescope and imaging technology make it possible for amateur astronomers to meet the challenges and achieve professional results. Dan Crowson is well known for his astrophotography. His images have been featured on NASA's Astronomy Picture of the Day web site, as well as in several magazines. Mr. Crowson will use a workshop -demonstration approach to show how to produce high quality astronomical images with modest equipment, using readily available image processing software

**February meeting:** Grant Martin and Bill Biermann - Archaeoastronomy

**March meeting:** Matthias Beilicke - Gamma Ray Astronomy

**April meeting:** Bob Criss - Rotational Dynamics of Planets, Stars and Galaxies

**May meeting:** Pamela Gay - Topic TBD

### **John Dobson 1915-2014**

John Dobson had to make a decision, help a friend make a telescope and get kicked out of the monastery, or leave things be. Fortunately for amateur astronomers everywhere, he got kicked out of the monastery. Ever since, John was involved in helping people make telescopes and doing all he could to help people to see the universe. He organized the Sidewalk Astronomers in 1968 after spending every clear evening at the corner of Jackson and Broderick in San Francisco showing anyone who passes by the universe. He insisted



John at MSRAL 2006 in St. Louis

that "of course everyone wants to borrow the telescope" and look through it because it is the only way most people ever get a chance to look at the universe. One person asked him if

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## President's Corner

by Jim Small

THANK YOU so much for all the members who volunteered at outreach events this past year. Night Sky Network pins have been ordered and we will celebrate those that volunteered at the February meeting. I can't state enough how much we appreciated those that give their time so others may see the universe!

Homemade Fest will be held on March 22nd at the Kirkwood Community Center this year. Kirkwood Parks has generously provided us a room to hold the event free of charge because of the star parties we are providing them over the course of the year.

We will be dedicating this year's event to John Dobson, in honor of all he did to promote astronomy and the building of telescopes. Several members of SLAS attended classes he taught and ground their own mirrors. You can get a snapshot of his life in this YouTube video biography. Steve Sands may be seen in one of the shots of the mirror class. [http://www.youtube.com/watch?v=ght\\_w7BAHaA#t=330](http://www.youtube.com/watch?v=ght_w7BAHaA#t=330)

MSRAL 2014 is coming along very well. The next committee meeting will be a big one and is scheduled for **Sunday, January 26th at 6:00 pm** at Young's Restaurant in Valley Park at 141 and Marshall just north of the railroad tracks. This is an important meeting and we will be organizing volunteers and working out the scheduling details for the convention.

Costs will be as follows as of this writing (subject to changes). Registration: \$30, StarBQ: \$25, Saturday lunch: \$12, Banquet \$40. Coffee and a light continental breakfast will also be provided for both Saturday and Sunday. Rooms will be available at the Knight Center for \$99 plus tax. Not all of the speakers are established at this point, so if you have a paper to present or a speaker to suggest, contact myself or Mark Jones.

The order for the equipment for helping disabled people use a telescope will take place this month and we will hopefully be able to put it to use this spring.

We have a great talk from Dan Crowson slated for this month. If you haven't seen his work, don't miss this meeting as he is doing spectacular work!

If you have photos, stories, etc of John Dobson you would like to share, please get them to me before the meeting tomorrow and I'll try to get them assembled into a presentation for the meeting tomorrow. You may forward them to [president@slasonline.org](mailto:president@slasonline.org)

We'll see you Friday night!

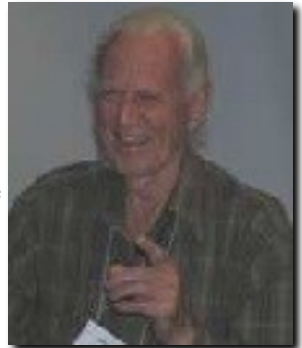
(Continued from page 1)

## Dobson

it was a study he was doing when his 24" was pointed at the Moon and he said "no, it's a study that YOU are doing" At our 75th Anniversary Celebration, John said "When I was a kid, it was nearly hopeless for anybody to get a chance to see through a telescope. Now it's easy. Getting telescopes out to the public had to be done. Somebody had to do it, and I'm not sorry that I did it." When we told him our club was 75 years old, he responded "well that's just a kid" John said that his favorite experience was a three night star party in Bryce Canyon. With 100 or so telescopes at the ready in the parking lot, the public was held to listen to a one hour lecture first, then at 9 o'clock, was released to head for the telescopes. They were told what telescope to visit if they wanted to see a particular object until a particular time. After that time, the telescopes were released to view whatever they wanted. At 1 am, the lights were turned on and everyone drove home. John gave the lecture the middle evening.

**"You see the importance of a telescope is not on how big it is, it is not on how well made it is, it's how many people, less fortunate than you, got to look through it"**

"But if the amateurs do not solve the problem of making it possible for the public to have a look at this universe, nobody will solve that problem. The professionals cannot solve that problem. So if the general public is to see what the universe looks like, they are going to have to do it through telescopes, they're going to have to do it at night, and they are going to have to do it through amateur telescopes, there is no other way. So if, you see, there were something like a million sidewalk astronomers worldwide, by "sidewalk astronomers" I simply mean people that are willing to get their telescopes out and let the other people use or look through them, **If there were a million such people and a few thousand people looked through each telescope, there would be a chance for most of the people who live on this world who want to see, to see.**"



John Dobson built a 24" telescope in a 30" concrete form (which slept 3 people on two occasions before it was ruined in the rain) which followed behind John's bus to the National Parks "because that's where the people are." He put in more than 80,000 miles of travel with that scope and others and millions of people got to look through his telescopes.

John Dobson was a friend inspiration to all and the all-time champion Sidewalk Astronomer. We can carry on his mission by letting as many people as possible view through our telescopes and inspiring them to wonder about their uni-



## 2013 Year in Review

Looking back at 2013, SLAS had another action-packed year. SLAS member participated in more than 50 events during 2013. These included public star parties and SLAS private functions such as monthly dark sky viewing, and the annual Star-B-Q and Homemade Fest. Here is a chronological review of some of those events.



**Feb 16, 2013 - Homemade Fest  
McDonnell Planetarium**

Since 2001, SLAS has held the annual Homemade Fest dinner, where SLAS members enjoy a potluck dinner and presentations by fellow members. The 2013 event was held in the Mission Control room at the McDonnell Planetarium. About 30 members were in attendance



**April 20, 2013 Astronomy Day  
at McDonnell Planetarium**

Larry Campbell manning one of 3 tables of exhibits set up by SLAS. More than 2500 people visited the Planetarium during

## THE EVENT HORIZON

the day. The SLSC and SLAS gave away 7 telescopes as attendance prizes.



**May 16-18, 2013 – Mid-States Regional Convention  
Omaha Nebraska**

SLAS members attending the 2013 MSRAL convention. The 3-day event featured a public telescope viewing, tours of the Strategic Air Museum and talks by local amateurs. SLAS will host MSRAL2104 June 6-8. SLAS members have been attending the MSRAL since its inception in 1950 and hosted the event in 1952, 1960, 1964, 1968, 1971, 1976, 1984, 1990, 1997 and 2006. SLAS is the host again this June in 2014.



**July 19, 2013 – I Waved at Saturn,  
Washington University**

After the July SLAS meeting, members got together for a group photo to wave at the planet Saturn as the Cassini spacecraft photographed Earth. This was a NASA sponsored activity, and SLAS posted their photo on the NASA website along with thousands of others.



**August 17, 2013 – SLAS Annual Star-B-Q  
Babler State Park**

Around 30 SLAS members got together at Babler Star Park for the 11<sup>th</sup> annual Star-B-Q. We had food, games and prizes. Photo above shows the lucky Astro-Quiz prizes winners.

**November 16, 2013 – Challenger Learning Center,  
10<sup>th</sup> Anniversary, Berkely, MO**



SLAS members setup telescope and meteorite exhibit at the Challenger Center in north St. Louis County. In addition to SLAS, many science organizations were also exhibiting and providing demonstrations. More than 500 children and adults attended this event

**Astronomical Events for 2014**

**by Mark Jones**

2014 will offer St. Louis observers a variety of Astronomical events.

As the year begins, Jupiter will reach opposition in January, followed by Mars in April and Saturn in May. Mars will reach a size of 15 arc-seconds at opposition. Venus will be a morning object most of 2014, reaching greatest elongation from the Sun in March. Neptune and Uranus reach opposition in August and October respectively.

The showpieces of the year will be three eclipses. On April 15<sup>th</sup> the Moon will be totality eclipsed just after midnight. In October the Moon and Sun will have eclipse. The solar eclipse will be partial at sunset and is the last one visible from St Louis until the Total Solar Eclipse in 2017. A separate article about these eclipses will be published in separate *Event Horizon* article.

The Moon will be in close conjunction with several objects in 2014, including Venus, Mars, Jupiter, Saturn, Spica, and Aldeberran. Notable will be the occultations of Lambda Gemini in March, the Hyades cluster in April, and Saturn in August. Observers with DSLR or video cameras may be able to capture the Moon occulting these objects.

Other lunar photo opportunities include the smallest Full Moon of the year on January 16<sup>th</sup> and the largest, “Super Moon”, on August 10<sup>th</sup>. Also the transient “Lunar-X” might be visible for 3-4 hours in the evenings of Aug 2<sup>nd</sup>, September 30<sup>th</sup> and December 28<sup>th</sup>.

The two brightest asteroids, Vesta and Ceres will remain close together most of the year and reach opposition in April. In July Ceres and Vesta will form a 0.2 degree pairing. Since both can be photographed with a tripod mount camera, this would be a very good opportunity to capture their motion during July.

Meteor showers occur throughout the year. Most showers have predictable rates, however two showers this year may offer surprises. On January 12<sup>th</sup> there could be a brief shower as the Earth passes through remains of Comet ISON’s debris. On May 23<sup>rd</sup> the Camelopardalis meteors associated with Comet 209P/Linear may generate a burst around 2am.

This list below identifies some of the most interesting events for 2014. In some cases, times for the event, altitude of the event above the horizon is also given if critical for viewing location.

2014 Date	Description
5-Jan	Jupiter at Opposition. Mag=-2.7; dia=46.7 arc-sec
2-Jan	Quadrantids Meteor Shower.
3-Jan	Mars at Aphelion
12-Jan	Possible Comet ISON Meteor Shower
16-Jan	Smallest Full Moon of Year, dia= 29.8 arc-min
23-Jan	Spica 1.3 deg S of Moon, 3am, Alt=36 deg.
25-Jan	Saturn 1deg N of Moon. 5am, alt=26 deg



- 6-Feb Jupiter Double Shadow Transit  
 9-Mar Daylight Saving Time Begins  
 9-Mar Jupiter Double Shadow Transit  
**10-Mar Moon Occults Lambda Gem (mag=3.6) at 9:59pm, Alt=56 degrees. Reappearance at 11:15pm**  
 16-Mar Jupiter Double Shadow Transit  
 18-Mar no good  
 19-Mar Regulus Occultation by Asteroid Erigone. Brightest Star ever predicted  
 20-Mar March Equinox  
 22-Mar Venus Greatest Elongation Morning Sky  
 23-Mar Jupiter Double Shadow Transit (Io and Ganymede)  
 8:10CDT  
**3-Apr Moon in Hyades Cluster, 8pm Alt=30deg, multiple occultations**  
**8-Apr Mars at Opposition. (mag=-1.5, dia=15 arc-sec)**  
**13-Apr Vesta at Opposition (mag=5.7, dia=0.56 arc-sec)**  
 14-Apr Mars Closest to Earth  
**15-Apr Total Lunar Eclipse. Partial start=12:58amCDT, Alt=40 deg; Total start=2:06am; total end=3:25amCDT; Partial end=4:33am, Alt=20 deg**  
**15-Apr Ceres at opposition (mag=7, dia=0.77 arc-sec)**  
 17-Apr Saturn N of Moon, 11pm Alt=22 deg.  
 22-Apr Lyrids Meteor Shower  
 5-May Eta Aquarids Meteor Shower.  
**10-May Saturn at Opposition. (mag=0; rings 22 deg, dia=18.6 arc-sec)**  
**10-May Astronomy Day**  
 12-May Moon between Spica and Mars, 11pm Alt=35 deg.  
 13-May Jupiter Double Shadow Transit  
 14-May Saturn N of Moon, 3am, Alt=20 deg.  
 16-May Uranus 1 deg N of Venus  
 17-May Jupiter Double Shadow Transit  
 20-May Jupiter Double Shadow Transit  
 23-May Camelopardalids Meteor Shower associated with Comet 209P/Linear. 2-3am CST  
 27-May Jupiter Double Shadow Transit  
 3-Jun Jupiter Double & Triple Shadow Transit. (Callisto, Europa, Ganymede)  
 7-Jun Mars 2 deg N of Moon at Sunset  
 10-Jun Jupiter Double Shadow Transit  
 21-Jun June Solstice.  
 23-Jun Venus 5 deg S of Pleiades, 5am, Alt=22 deg.  
 24-Jun Venus 2 deg N of Moon, 5:30am, Alt=30 deg.  
 5-Jul Mars 0.25deg S of Moon, 7:30pm Alt=40deg.  
 7-Jul Saturn 1 deg N of Moon, 7:30pm, Alt=35 deg.  
 7-Jul Ceres and Vesta Conjunction 0.2 degs, 10pm, Alt=20 deg  
 13-Jul Mars 1 deg N of Spica  
 28-Jul Delta Aquarids Meteor Shower.  
 2-Aug 11:50pm. Lunar-X Visible on Moon about 4 hours around this time  
 3-Aug Moon between Mars and Saturn, 7:30pm, Alt=32 deg.  
**10-Aug Full Moon. Super Moon. Biggest of Year, 11pm, dia=33.82 arc-min**  
 12-Aug Perseids Meteor Shower  
 18-Aug Venus 0.2deg N of Jupiter and 1 deg from Beehive Cluster, 4:30am, Alt=7 deg.  
 18-Aug Venus 1deg S of Beehive, 4:30am, Alt=7 deg.  
 18-Aug Conjunction of Venus and Jupiter. (1/4 deg), , 4:30am, Alt=7 deg.  
 23-Aug Moon-Jupiter-Venus Conjunction, 3:30am, Alt=10 deg.  
 24-Aug Mars 3 deg S of Saturn  
**29-Aug Neptune at Opposition 9mag=7.8, dia=2.4 arc-sec)**  
 31-Aug Saturn Occultation with Moon, Reappearance 11am, Alt=10 deg.
- 5-Sep Venus 0.8 deg N of Regulus, 4am, Alt=5deg  
**9-Sep Full Moon. Super Moon**  
 23-Sep September Equinox.  
 28-Sep Mars 3deg N of Antares  
 28-Sep Jupiter Double Shadow Transit  
 30-Sep 11:50pm. Lunar-X Visible on Moon about 4 hours around this time  
 4-Oct Ceres 0.5deg S of Saturn, 6pm Alt=5 deg  
**7-Oct Uranus at Opposition (mag=5.7, dia=3.7 arc-sec)**  
**8-Oct Moonset Eclipse. Total Lunar Eclipse. Partial start=4:14amCDT, Total start=5:24am; total end=6:26amCDT; Moon sets=7:07am; Partial ends=7:35am**  
 8-Oct Draconids Meteor Shower  
 12-Oct Aldeberran S of Moon, 5am, Alt=50 deg  
 22-Oct Orionids Meteor Shower  
**23-Oct Sunset Eclipse. Partial Solar Eclipse. Start=4:48pm, Alt=16 deg; max=5:48pm, Mag=0.505; Alt=4deg**  
 2-Nov Daylight Saving Time Ends  
 5-Nov Taurids Meteor Shower  
 17-Nov Leonids Meteor Shower.  
 1-Dec Uranus 0.2 deg S of Moon, 5pm, Alt=35deg.  
 5-Dec Aldeberran S of Moon, 8pm, Alt=50deg  
 8-Dec Jupiter Double Shadow Transit (Io and Europa) 10:18pm CST  
 12-Dec Jupiter Double Shadow Transit  
 13-Dec Geminids Meteor Shower.  
 15-Dec Jupiter Double Shadow Transit  
 21-Dec December Solstice  
 22-Dec Ursids Meteor Shower  
 28-Dec 7:20pm. Lunar-X Visible on Moon about 4 hours around this time

**Globe at Night Campaign Dates for 2014**  
*from*  
**Constance E. Walker (NOAO & GLOBE at Night Campaign Director [www.globeatnight.org](http://www.globeatnight.org) )**

The Globe at Night (<http://www.globeatnight.org/>) program is an international citizen-science campaign to raise public awareness of the impact of light pollution by inviting citizen scientists to measure their night-sky brightness and submit their observations (at <http://www.globeatnight.org/webapp/>) from a computer or smartphone. Light pollution threatens not only our "right to starlight," but also can adversely affect energy consumption, wildlife, and health. Nearly 100,000 measurements have been contributed from people in 115 countries during the campaigns over the last 8 years, making Globe at Night the most successful light-pollution-awareness program to date. For 2014 Globe at Night offers four ways to measure night-sky brightness: the traditional method of matching what you see in a constellation with star charts; the use of a handheld digital device called a Sky Quality Meter (<http://unihedron.com/projects/sqm-1/>); the use of the Loss of the Night app on Android phones (<https://play.google.com/store/apps/details?id=com.cosalux.welovestars&hl=en>), which asks you to find certain stars as a measure of star visibility; or the use of the Dark Sky Meter app on iPhone 4s and iPhone 5/5s/5c (<http://www.darkskymeter.com/>), which uses the phone's

camera to measure night-sky brightness. Explore the last 8 years of data in our interactive map (<http://www.globeatnight.org/map/>), or see how your city did with our map app (<http://www.globeatnight.org/mapapp/>). The Globe at Night website is easy to use, comprehensive, and holds an abundance of background information. The database is usable for comparisons with a variety of other databases, such as how light pollution affects the foraging habits of bats.

For 2014, we will be collecting observations during particular dates each month, roughly between 8pm-10pm local time, when the Moon is not up. Those dates are:

-	January	20-29
-	February	19-28
-	March	21-30
-	April	20-29
-	May	19-28
-	June	17-26
-	July	16-25
-	August	15-24
-	September	15-24
-	October	14-23
-	November	12-21
-	December	11-20

We look forward to your participation in the campaign! Visit [www.globeatnight.org](http://www.globeatnight.org) for more information.

### **Winter has just started, but are you going a little stir crazy and need some sky viewing?**

The **Pattonville Observatory** has an 10-inch Schmidt-Cassgrain telescope which is used to view planets, stars, nebulae, galaxies and globular clusters. Approximately two Fridays every month during the school year in the early evening after sunset. Please see the Pattonville [Announcements page](#) and the [Calendar page](#) for details.

**Where:** The white dome atop [Pattonville Heights Middle School](#) located at 195 Fee Fee Rd., Maryland Heights, MO 63043. Please enter the door directly below the dome. Click on this link to obtain a [map](#)

Cost: **Totally and completely Free!!**

What if it is cloudy? In the event of rain or clouds, they also have a fully functional planetarium and substitute a planetarium program instead. The planetarium is located at

the opposite end of the building from the blue dome but all you need do is follow the signs inside the building. The planetarium is a small theater with seating for 25 around a Spitz projector which illuminates a 360 degree hemispheric screen overhead.

### **Upcoming Dates to Mark on Your Calendar Pattonville Observatory**

**January 10, 2014 Friday 7:00-9:00 p.m.** Public Program Half Moon, Jupiter, Uranus, Star Birth Factories (M42), Clusters (M45), Charles Messier, star colors,

**January 31, 2014 Friday 7:00-9:00 p.m.** Public Program Jupiter, M44, M36, M37, Charles Messier, Orion, Taurus and Auriga, Pleiades, M42, star colors, star clusters

**February 7, 2014 Friday 7:00-9:00 p.m.** Public Program Half Moon, Jupiter, Celestial Hexagon, M44, M45, Star life cycles, star colors, variable stars

**February 21, 2014 Friday 7:00-9:00pm.** Public Program Jupiter, M45, M44, Star colors, brighter winter constellations

**March 7, 2014 Friday 7:00-9:00 p.m.** Public Program Quarter Moon, Jupiter, celestial hexagon, M42, star birth, star life cycle, star colors

**March 21, 2014 Friday 8:00-10:00 p.m.** Public Program Jupiter, celestial hexagon, M45, M44, Mizar (Double Star)

**April 4, 2014 Friday 8:30-10:30 p.m.** Public Program Small Crescent Moon, Jupiter, Saturn and Mars (late), M44 (the Beehive Cluster), M45 (the Pleiades), Mizar, stars and star colors

**April 25, 2014 Friday 9:00-11:00 p.m.** Public Program Jupiter, Saturn, Mars, M104 (Sombrero Galaxy), M96, M44, Double Stars and various constellations

**May 2, 2014 Friday 9:00-11:00 p.m.** Public Program Jupiter, Saturn, Mars, M104, M96 and globular cluster of M3 and M5, open cluster of M44

**May 16, 2014 Friday 9:00-11:00 p.m.** Public Program Jupiter (early), Saturn, Mars, M13 (the Great Hercules cluster), M104, M96, globular clusters, constellations and stars

### **Eclipses for 2014**

**by Mark Jones**

2014 will offer St Louis with three eclipse opportunities, two lunar, and one solar.

#### **April 15: Total Lunar Eclipse**

This is the first total lunar eclipse visible in St Louis since December 10, 2011. April's event is observable across North America. It's an early-morning event as the Moon

*(Continued on page 5)*

skims though the Southern portion of the Earth's shadow. This means that the southern portion of the Moon will be brighter than the northern part. The star Spica will be just 2 degrees west of the Moon. This should be an excellent visual and photo opportunity.

Partial phase starts at 1:00am, with the Moon, due south and 40 degrees above the horizon. Totality begins at 2:06am and ends at 3:25am. When Totality ends, the Moon will be 30 degrees high in the southwest. Partial phase ends at 4:33am with the Moon 20 degrees high in the southwest.

Photo: The last Total Lunar Eclipse seen from St. Louis, on Dec 10, 2011



**October 8: Total Lunar Eclipse**

The year's second lunar eclipse will also be a morning event. This time, closer to sunrise, which means the Moon will be very low in the southwest.

The Moon skims though the northern portion of the Earth's shadow. This means that the northern portion of the Moon will be brighter than the southern part.

Partial phase starts at 4:14am, with the moon 31 degrees high in the southwest. Totality begins at 5:24am with the Moon 18 degrees high. The planet Uranus will be 1 degree to the east of the Moon. By the time Totality ends at 6:24am, the Moon will be 8 degrees high above the western horizon. The Moon will set at 7:07am before the Partial phase ends at 7:35am.

You will need an extremely good southwest horizon. On Dec 10, 2011 several SLAS members set up on the parking deck at West County Mall to view the Moon and it set while still eclipsed.

Photo: Total Lunar Eclipse seen from West County Mall parking garage on Dec 10, 2011. Sequence as the Moonsets behind power poles.



**October 23: Partial Solar Eclipse**

The last Solar eclipse visible from St. Louis was on May 20, 2012. However the weather was terrible in St. Louis that day and the eclipse was not observed for any length of time.

Prior to 2012, there was a "tiny" eclipse in 2005 with only 1% of the Sun obscured by the Moon. You need to go back to June 10, 2002 for the last "good" Solar eclipse visible from St Louis. Like the 2002 event, the 2014 eclipse will be at sunset.

Let's hope the weather cooperates because this is our final trial run for solar eclipses until the Total Solar Eclipse visible in St Louis on Aug 21, 2017! So get your equipment ready, buy your solar filters and viewing glasses now.

The partial phase starts at 4:48pm with the Sun only 16 degrees above the southwest horizon. Maximum eclipse at 5:48pm with the Sun only 4 degrees above the horizon, so find a site with a flat horizon. At that time, 51% of the Sun's diameter will be obscured. The Sun will set at 6:07pm with the eclipse still underway just like in 2002

Photo: June 10, 2002 eclipse as seen from Chesterfield Mall parking lot as the Sun set over St. Charles County.





**St. Louis Astronomical Society  
Balance Sheet  
As of December 31, 2013**

11:45 AM  
01/05/14  
Accrual Basis

**St. Louis Astronomical Society  
Profit & Loss Budget vs. Actual  
January through December 2013**

	Dec 31, 13	Dec 31, 12
<b>ASSETS</b>		
<b>Current Assets</b>		
Checking/Savings		
Checking - First Bank	3,283.28	1,710.18
Deposit, Certificate of	20,020.23	19,958.46
Merchandise Change Fund	20.00	20.00
PayPal	24.15	0.00
Savings - First Bank	3,367.46	3,084.77
YMCA Trout Lodge Escrow	877.87	877.87
<b>Total Checking/Savings</b>	<b>27,582.99</b>	<b>25,651.28</b>
<b>Other Current Assets</b>		
Inventory Asset	1,722.52	2,086.08
Investment in Mid-States 2014	2,000.00	0.00
<b>Total Other Current Assets</b>	<b>3,722.52</b>	<b>2,086.08</b>
<b>Total Current Assets</b>	<b>31,285.51</b>	<b>27,737.32</b>
<b>Fixed Assets</b>		
Accum Depr - Office Equip	(216.65)	(72.16)
Office Equipment	216.65	216.65
<b>Total Fixed Assets</b>	<b>0.00</b>	<b>144.49</b>
<b>TOTAL ASSETS</b>	<b>31,285.51</b>	<b>27,881.81</b>
<b>LIABILITIES &amp; EQUITY</b>		
<b>Liabilities</b>		
<b>Current Liabilities</b>		
Accounts Payable	40.99	0.00
<b>Total Accounts Payable</b>	<b>40.99</b>	<b>0.00</b>
<b>Other Current Liabilities</b>		
SLAS Bucks	286.00	530.00
<b>Total Other Current Liabilities</b>	<b>286.00</b>	<b>530.00</b>
<b>Total Current Liabilities</b>	<b>326.99</b>	<b>530.00</b>
<b>Total Liabilities</b>	<b>326.99</b>	<b>530.00</b>
<b>Equity</b>		
Opening Bal Equity	8,137.66	8,137.66
Retained Earnings	19,214.15	21,112.92
Net Income	3,606.71	(1,898.77)
<b>Total Equity</b>	<b>30,958.52</b>	<b>27,351.81</b>
<b>TOTAL LIABILITIES &amp; EQUITY</b>	<b>31,285.51</b>	<b>27,881.81</b>

	Jan - Dec 13	Budget	\$ Over Budget
<b>Ordinary Income/Expense</b>			
<b>Income</b>			
Magazine Subscription	1,847.40	3,803.55	(1,956.15)
Membership Dues	3,530.00	3,700.00	(170.00)
Merchandise Sales	4.00		
<b>Total Income</b>	<b>5,381.40</b>	<b>7,503.55</b>	<b>(2,122.15)</b>
<b>Cost of Goods Sold</b>			
Magazine Subscriptions	1,847.40	3,803.55	(1,956.15)
Merchandise	2.51		
<b>Total COGS</b>	<b>1,849.91</b>	<b>3,803.55</b>	<b>(1,953.64)</b>
<b>Gross Profit</b>	<b>3,531.49</b>	<b>3,700.00</b>	<b>(168.51)</b>
<b>Expense</b>			
1-Programs & Events	896.63	2,200.00	(1,303.37)
2-Newsletter	364.67	330.00	34.67
3-Library expense	69.64	60.00	9.64
4-Astronomical League Dues	695.00	705.00	(10.00)
5-Loaner Scopes	40.99	350.00	(309.01)
6-Brochures	144.99	250.00	(105.01)
7-Insurance	380.00	380.00	
8-Website	197.83	198.00	(0.17)
9-Administrative Expenses	414.78	723.10	(308.34)
<b>Total Expense</b>	<b>3,204.51</b>	<b>5,196.10</b>	<b>(1,991.59)</b>
<b>Net Ordinary Income</b>	<b>326.98</b>	<b>(1,496.10)</b>	<b>1,823.08</b>
<b>Other Income/Expense</b>			
<b>Other Income</b>			
Donations	3,376.93		
Interest Income	63.83	105.00	(41.17)
<b>Non-Operating Income</b>	<b>200.00</b>		
<b>Total Other Income</b>	<b>3,640.76</b>	<b>105.00</b>	<b>3,535.76</b>
<b>Other Expense</b>			
Non-operating Expense	361.03		
<b>Total Other Expense</b>	<b>361.03</b>		
<b>Net Other Income</b>	<b>3,279.73</b>	<b>105.00</b>	<b>3,174.73</b>
<b>Net Income</b>	<b>3,606.71</b>	<b>(1,391.10)</b>	<b>4,997.81</b>

**Homemade Fest 2014**  
**Saturday March 22, 2014**  
**Kirkwood Community Center**

Join fellow SLAS members for our annual winter pot-luck dinner meeting. Doors open at 5pm to unload equipment and food. We will begin eating at 6pm. Formal Opening and presentation begin at 6:45pm.

This is a show-n-tell meeting. Members are encouraged to present anything of astronomical interest they have built, refurbished, improved or just can't do without. This is your chance to share with your fellow SLAS members.

**SLAS will provide the soda, coffee and paper goods. So bring a favorite dish or dessert to share and let's enjoy each other's company and love for Astronomy on this long winter's night.**

**Attendances prizes will be drawn throughout the evening**

If you have questions or wish to present, please contact Mark Jones for more information. This event is free to all SALS members and their families. RSVP on SLAS Night Sky Network is optional but encouraged.

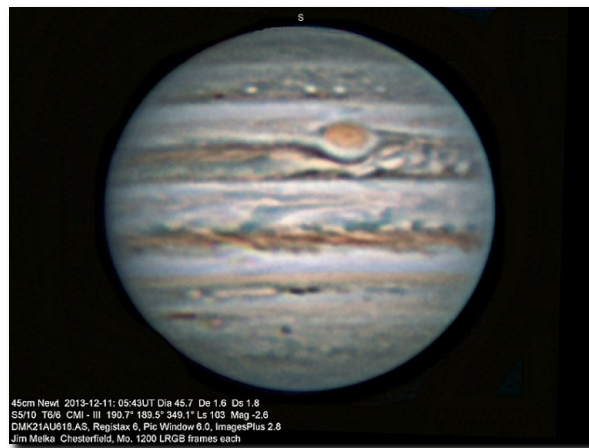


Photo by Jim Melka

45cm Newt 2013-12-11: 0543UT Dia 46.7 De 1.6 Ds 1.8  
SS10 T88 CM - M 199.7 188.9 240.1 Ls 103 Mag 2.8  
DMK21AU018.AS\_Registax 6, Pic Window 0.0, ImagesPlus 2.8  
Jim Melka Chesterfield, Mo, 1200 LRGB frames each



**SAINT LOUIS ASTRONOMICAL SOCIETY****MINUTES OF EXECUTIVE BOARD MEETING:****December 12, 2013****1. Opening Activities**

Meeting called to order at 7:10pm

Attendees : Jim Small, Larry Campbell, Tom Nickelson, Grant Martin, Brad Waller

Jim Small made motion to approve the November minutes and seconded by Tom Mickelson. Motion passed.

**2. External Business**

SLSC Next First Friday will be Jan 3<sup>rd</sup>.

**MSRAL 2014** Ad for MSRAL2014 placed on page 22 of the *Reflector* magazine. The MSRAL2014 webpage is active, suggested registration form created. Powerpoint created to publicize the weekend's activities. The Star-B-Q menu is confirmed. Meeting with Bon Appetit next week.

Next MSRAL2014 committee meeting will be December 15, 6:00 pm at Young's.

Need to add meeting dates to NSN calendar

Will present our plans at the ASEM meeting which is the second Saturday of the month, Jan 11<sup>th</sup>

Lunch menu still in process

**Next board meeting January 9**

**Future board meeting dates: 2/6, 3/6, 4/10, 5/8, 6/12, 7/10, 8/7, 9/11, 10/9, 11/6, 12/11 are suggested. They still need to be confirmed for YMCA** Check with Don Ficken for YMCA availability

**3. Director Reports:****President – Jim S**

No additional report

**Vice President – Bill Biermann**

**Speakers:** December Ed Guinness; January Dan Crowson, February Bill Biermann and Grant Martin December A101 – Dale Engelbrect will present his binocular mount

**Secretary – Mark J**

Former SLAS member, Ernie Sciaroni passed away December 5<sup>th</sup>. A sympathy card will be sent from SLAS.

**Treasurer/ALCor – Cook Feldman (acting)**

**Budget approval** 2013 Balance sheet reviewed. Jan –Nov, expenditures are under budget for 2013.

2014 Budget worksheet was reviewed by Board and approved. Cook will prepare Budget narrative. Budget will be published in newsletter and put to a vote for approval at the December general meeting.

**Hospitality – Grant M**

Discussion on the need to purchase 2014 Budget for NSN pins. NSN will supply two free pins but others will cost \$2 each. We have 15-20 members qualify for NSN pins for 2013. Estimate \$40 is needed.

Budget for 2014 should cover cost of NSN pins under membership initiative or recognitions

**Board Member at Large reports****Larry Campbell**

Bought a 12" Skywatcher reflector and plan to use it at public viewing sessions

**Tom Nickelson**

Space Grant for people with disabilities. First round of equipment out for bid.

Request for quote sent to OPT for telescope, video eyepiece.

Will still need to procure carrying case and video monitor, easy arm, powerpack and accessory cables

**Brad Waller**

No report

**4. Committee Reports: If needed**

Membership – report was submitted prior to the meeting. Membership now at 153. This is down from last year's 160.

Librarian – RASC handbook Ottwell calendar on order

Newsletter - deadline for articles is Saturday morning Dec 14th

Night Sky Network – write up suggestion for a pooled supply of recognition pins

Publicity – Rich H did send out press release for December meeting

Observing Programs - Sky Puppy award for Bill Biermann's daughter Annalisse will be presented at the December meeting.

**5. Old Business**

Discussion held about getting volunteers for star parties. We had to cancel some recent star parties because we did not have a enough volunteers. Board decided to review upcoming events posted on NSN at each board meeting to verify volunteers are identified. December events was a short list and no shortages were identified.

**6. New Business Any new business to bring before the board.**

Membership committee is looking for names of members deserving of future recognition. Committee plans to present at SLAS meeting early in 2014.

**7. Closing Activities**

Motion to adjourn meeting by Grant Martin, seconded by Larry Campbell. Meeting adjourned at 9:00pm.

**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*

- 2/13/2014
- 3/6/2014
- 4/10/2014
- 5/8/2014
- 6/12/2014
- 7/10/2014
- 8/7/2014
- 9/11/2014
- 10/9/2014
- 11/6/2014
- 12/11/2014

**Dark Sky Observing Dates**

**Francis Park Events:** These events are on **Wednesdays the week nearest the first quarter Moon**

- April 9 (9 day old Moon) (2nd Wed.)
- May 7 (7 day old Moon) (1st Wed.)
- June 4 (6 day old Moon) (1st Wed.)
- July 2 (4 day old Moon) (1st Wed.)
- August 6 (9 day old Moon) (1st Wed.)
- September 3 (8 day old Moon) (1st Wed.)
- October 1 (7 day old Moon) (1st Wed.)
- October 29 (6 day old Moon) (5th Wed.)

**SLSC Public Telescope Viewing Events:** These events are held the first Friday of the month-

\*Planetarium shows start at 7pm for the summer months

- January 3, 2014
- February 7, 2014
- March 7, 2014

**YMCA Edward Jones Star Parties (dates are tentative at this time)**

- 4/7/2014
- 5/5/2014
- 6/2/2014
- 6/30/2014 (two in June is because of Moon timing)
- 8/14/2014

**SLAS EVENTS**

**January**

**17 (FRI) SLAS Reg Meeting**

**February**

**6 (THUR) Woerther/Ballwin Science Night**  
**7 (FRI) SLSC PTV**  
**13(THUR) SLAS Board Meeting**  
**20 (THUR) Incarnate Word Science Olympiad**  
**21 (FRI) SLAS Regular Meeting**

**March**

**6 (THUR) SLAS Board Meeting**  
**7 (FRI) SLSC PTV**  
**8 (SAT) Kirkwood Park**  
**14 (FRI) Creve Coeur Stargazing**  
**21 (FRI) SLAS Regular Meeting**  
**22 (SAT) HOMEMADE FEST !! (Kirkwood Community Center)**

**JUNE 6-8**

**Mid-States Region of the  
Astronomical League Convention**

**Volunteer Hours for Outreach. NSN pin awardees (5 or more outreach events)**

Cook Feldman	26	events	93	hours
John Beaury	23	events	72	hours
Donald Ficken	22	events	65	hours
James Small	20	events	57	hours
Mark Jones	16	events	56	hours
Bill Breeden	13	events	37	hours
Jim Trull	13	events	39	hours
Grant Martin	12	events	41	hours
Rick Menendez	11	events	29	hours
Bill Biermann	8	events	26	hours
Larry Campbell	6	events	21	hours
Richard Jennings	6	events	19	hours
Ann Trull	5	events	16	hours
Connie Gleason	5	events	15	hours
Nathan Biermann	5	events	17	hours

**Other Volunteers THANKS TO ALL VOLUNTEERS !!**

Abby Gordon	4	events	11	hours
Daniel Corso	4	events	12	hours
Rita Breeden	4	events	14	hours
Lois Fitter	3	events	14	hours
Wayne Clark	3	events	10	hours
Joe McHugh	2	events	6	hours
Lee Halbeck	2	events	6	hours
Michael Malolepszy	2	events	10	hours
Paul Baldwin	2	events	9	hours
Beverly Wrobel	1	events	2	hours
Brent Buch	1	events	4	hours
Bryan White	1	events	3	hours
Dale Engelbrecht	1	events	3	hours
Doug Blum	1	events	4	hours

**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. For more information about events, such as Moon phase, clear sky clock, weather report or a map of what's up, see the calendar online.





# 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 @ \$34.00 / 1 year \$ \_\_\_\_\_  
**TOTAL ENCLOSED \$ \_\_\_\_\_**

Please send completed form with check (no cash please) made payable to  
 St Louis Astronomical Society  
 Don Ficken, Treasurer  
 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		201309.pub
<b>President</b> <i>Jim Small</i>	president at slasonline.org	314-307-0692
<b>Vice President</b> <i>Bill Biermann</i>	vicepresident at slasonline.org	314-596-6738
<b>Secretary</b> <i>Mark Jones</i>	secretary at slasonline.org	636-394-2342
<b>Treasurer</b> <i>Rhonda Whelan, Cook Feldman, Don Ficken (membership)</i>	treasurer at slasonline.org	636-225-0269
<b>Hospitality</b> <i>Grant Martin</i>	hospitality at slasonline.org	
<b>Board Members at Large:</b>		
<i>Tom Nickelson</i>	board14 at slasonline.org	
<i>Vacant</i>	board15 at slasonline.org	
<i>Bradley Waller</i>	board16 at slasonline.org	314-481-7250
<b>ALCOR</b> <i>Rhonda Whelan</i> (Astronomical League Correspondent )	treasurer at slasonline.org	314-750-0262
<b>MSRAL Rep.</b> <i>Jim Small</i>	msral_rep at astroleague.org	314-909-7211

COMMITTEE CHAIRS		
<b>Membership</b> <i>Don Ficken</i>	membership at slasonline.org	636-225-0269
<b>Publicity</b> <i>Rich Heuermann</i>	publicity at slasonline.org	314-962-9231
<b>'SLASdialogs' Moderator</b> <i>Mark Jones, Rhonda Whelan</i>	dialogsmoderator at yahoo.com	
<b>Webmaster</b> <i>Jim Small</i>	webmaster at slasonline.org	314-909-7211
<b>Newsletter Ed.</b> <i>Jim Small</i>	newsletter at slasonline.org	314-909-7211
<b>Loaner Equip.</b> <i>Greg Gaines</i>	loaner at slasonline.org	314-277-3082
<b>Merchandise</b> <i>Grant Martin</i>	merchandise at slasonline.org	
<b>Librarian</b> <i>Jim Small</i>	librarian at slasonline.org	314-909-7211
<b>Star Party Coord</b> <i>Mike Malolepszy</i>	starparty at slasonline.org	314-781-4701
<b>Dark Site Coord.</b> <i>Mark Jones</i>	darksite at slasonline.org	636-394-2342
<b>Observing Programs</b> <i>Mark Jones</i>	observing at slasonline.org	636-394-2342
<b>Telescope Making</b> <i>Bill Davis, Jim Melka</i>		314-469-3061

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

**ST. LOUIS ASTRONOMICAL SOCIETY**

**We're on the Web!**  
<http://www.slasonline.org>

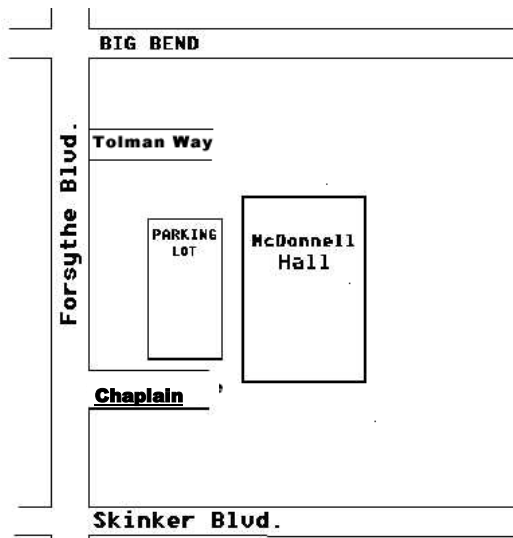


**Who We Are and What We Do**

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

