Photographing Comets
by Members of SLAS

Professor Martin Israel was to be the speaker for this month, but his talk had to be postponed for personal reasons.

Mark Jones, Jim Melka and Thane Bopp will present methods of photographing comets because of two comets coming our way in 2013. Several methods will be illustrated and the public is encouraged to bring their pictures, cameras and questions for the meeting. Presenters will be available after the meeting for questions about setting up equipment and shooting.

Methods will range from the very simple to the complex. For several of the techniques, a minimum of equipment is required! Be sure to bring your ideas!

Details about the comets coming this year will also be presented.

Astro 101 this month: Cloud Chamber: Let’s See the Particles that are Passing By!

This month’s Astro 101 will consist of a demonstration of a cloud chamber used to see particles that are moving through the atmosphere. There will be opportunities for photographing the particles as they are moving through, so we have another reason for bringing your camera this month!

Upcoming meetings:
Friday, February 15th, 2013: Archeo Astronomy - Michael Friedlander
Friday, March 15, 2013: Comets – Joseph Marcus
Friday, April 19, 2013: Exoplanets—Paul Baldwin
Friday, October 18, 2013: Comets—Gary Kronk

- All meetings begin at 7:30pm

SLAS Survey

The SLAS board would like to get a better idea of what members want and think of SLAS and its programs. Therefore, we have created an online survey. The link to the Survey was sent as a separate email, but if you really would like to get started right away, the URL address is http://www.surveymonkey.com/s/5R9XRZM

If you need assistance, there will be an opportunity to take the survey online at the meeting. Make sure you take the time to take the survey. Don’t be shy, and always be polite.
President’s Corner by Jim Small

We have lots of awards to pass out at this month’s meeting. Congratulations to the following people on qualifying for the fabulous Night Sky Network Outreach Award for volunteering at SLAS events last year: Beaury, John, Feldman, Cook, Small, Jim, McHugh, Joe, Trull, Jim, Jones, Mark, Menendez, Rick, Naethe, Jeremy, Whelan, Rhonda, Trull, Ann, Ficken, Don, Martin, Grant, Jennings, Rich, Campbell, Larry, Biermann, Bill, Breeden, Bill, Gaines, Greg, Gordon, Abby, Greenway, Glenn. Qualification for the award consisted of volunteering for at least 5 qualifying events during the course of the year. We also have 5 people who qualified for the Venus Transit award this month: Bill and Rita Breeden, Jim and Ann Trull and Jim Small.

The SLAS survey will be run for another week or so to get feedback from our members and give the board some guidance and direction for future endeavors. See the article on the front page and be certain to take a few minutes to fill out the survey. If you need assistance, we can help you take the survey at the meeting, either online or via paper copy.

Outreach Training Session Saturday Morning, January 19th

We will be doing outreach training on the morning of the 19th this month (Saturday morning) The goal this month is to finish the telescope toolkit and give attendees some practice using the equipment and talking about the topic with others. We will also make some tools that can be used by attendees to talk about various topics at the telescope. Mark Jones and Rhonda Whelan will again be hosting the second members only astronomy lessons held at Babler State Park Saturday night. Be sure to read the article with the rules for attending the meeting. RSVP on NSN so we know you are coming! The last meeting went well and it looks like it will be decent for this month’s event. It will also be a great way to get to know some members, both new and experienced.

Homemade Fest is Saturday, February 16 in the Orthwein Star Bay at the James S McDonnell Planetarium. DON’T miss it!

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Apologies for the delay in the newsletter this month. It was partly due to waiting on settling a redo of the meeting after Dr. Israel had to back out of speaking Friday. It still should have been out earlier, but we couldn’t help the speaker situation. Bill Biermann has done yeoman work in getting a replacement program for Friday! Thanks for his coordination in getting it together.

Grant has new logo merchandise for SLAS. See the article on the next page for ordering information!

We’re still here! Funny, I don’t hear anything about the Mayan calendar anymore! Just the full SLAS calendar instead! Make sure you properly log all of your hours for outreach events you have work. That includes the training sessions Saturday!

Homemade Fest is coming SOON! The date is set for next month at the usual date and time. Saturday, February 16 is the date and 4 pm is the time to begin loading equipment up to the star bay. That’s right, this year the event will be held in the Orthwein Star Bay! I’ve seen an advance peek into some of the projects that will be presented at this year’s event and TRUST ME, you DON’T want to miss this year’s Homemade Fest! (Don’t forget, it’s the only time that Cook makes his famous chili!)

Don’t forget to submit your information to the Astronomical League for the outreach award if you qualify. Mark Jones published an extensive list the last few months in an attempt to get people to submit for an award foe which they have already met the qualifications.

Outreach Training Session Saturday Morning, January 19th

We will continue the outreach training tomorrow morning at the St Louis Science Center at 9 am. Be sure to come promptly so we can get you in the door. We will use the west entrance up the ramp on the side of the Archery Field.

We will be finishing off the Telescope Toolkit and have practice going through the explanations for the different activities. We will also be making some of the cards for use at the telescope so members have their own copy of some of the materials for use during outreach events.

Remember, these sessions are specifically designed to assist people who want to do outreach but aren’t confident in working with the public at events. The idea is to give you background knowledge and help knowing what to do in various situations when presenting ideas. There are a wealth of resources available on Night Sky Network specifically directed in helping volunteers with outreach. Believe me, they have covered all of the bases for any questions you might have when it comes to working with people at outreach events, including specific videos showing how to do any of the activities.

See you on Saturday! Be sure to RSVP for the event on the NSN calendar!
SLAS Saturday Evening Observing Session January 19, 2013

Are you interested in learning more about the sky, finding constellations, using binoculars, setting up and using your telescope? SLAS will start hosting Saturday night observing sessions at Babler State Park in West St. Louis County. These observing sessions will occur the third Saturday of each month (weather permitting). Our objective is to help members learn: the constellations and how to navigate the sky; how to use your telescopes; and to give everyone the opportunity to work on observing awards that are sponsored by the Astronomical League.

We will be working on learning the sky, and using your telescope or binoculars. Since we are starting in the cold time of year, we may alter or cancel the event if weather or field conditions are too extreme. Please RSVP to keep informed about any changes. The sunsets at 5pm. Objects include Fall and Winter constellations, first quarter moon and the planets Jupiter and Uranus. Members can bring their own telescopes or binoculars, lawn chairs, star maps, etc. Dress for cold weather. Free star wheels and sky maps can be downloaded from the following websites:


Since we are using the park after normal operating hours all members must comply with the following rules:
1. Members must arrive before the gates close, no admittance after that time.
2. Members must be welcoming to the occasional passerby that might show interest in what we are doing.
3. Members will park only in the parking lot next to the monument area and set up telescopes on the grass near the monument. We will NOT park on the roadways.
4. Members will not wander around the park grounds after hours, travel will be limited between monument and gate.
5. These events are limited to SLAS members and family only.
6. Members will obey all park rules and treat staff properly.

The dates for future sessions are listed below and will be updated on the SLAS calendar. If you are interested in joining us on these Saturday evenings, please use the Night Sky Network to RSVP your intent to attend. Anyone who cannot or does not know how to logon to NSN to signup should contact any SLAS board member for assistance.

Upcoming observing sessions will be scheduled for the following Saturdays.

Jan 19th  –  Start time: 4pm;  Sunset: 5:08pm:  near FQ Moon, Jupiter, Orion. Locating constellations, identifying nightly objects, and star hopping. Work on Lunar list and constellations
Feb 9th – Start time: 5pm;  Sunset 5:40pm:  Moon past FQ, Jupiter, Orion, Sirius. Work on Lunar list and constellations, possibly start double star list.
Mar 16th – Start time: 6pm;  Sunset 7:09pm:  Moon close to FM, Jupiter, Orion. Lunar List, Double Star List, and constellations.
April 20th – Start time: 7pm;  Sunset 7:43pm:  FQ moon, Jupiter, Saturn, Lunar List, Double star List, and constellations.

For more information about the lunar and double star lists see the links below:
Double Star Award  [http://www.astroleague.org/al/obsclubs/dblstar/dblstar1.html](http://www.astroleague.org/al/obsclubs/dblstar/dblstar1.html)

New Merchandise!!

Embroidery is in! The world renowned SLAS logo is now on file at St Charles Printables ([www.stcharles-printables.com](http://www.stcharles-printables.com)). Located in St Charles just off Highway 70 and Zumbehl rd.  $8.00 logo on your own clothing or order from the store: St Charles Printables carries a HUGE line of apparel (Polos, button downs, sweats, hats, Cotton & fleece hoodies (my favorites for cold nights at the telescope) and etc, etc etc). Catalogs on site and online: [http://www.stcharles-printables.com/pid02.php](http://www.stcharles-printables.com/pid02.php)
There are a variety of astronomical events in 2013. A detailed list is below.

**Meteor Showers** - Only two meteor showers offer favorable viewing conditions this year, the Quadrantids in January and the Perseids in August. Visibility of the other main meteor showers will be influenced by moonlight.

- **January 3 Quadrantids; ZHR=120 (>FM)**
- **April 22 Lyrids; ZHR=20 (after Full Moon)**
- **May 5 Eta Aquarids; ZHR=60 (after Last Quarter)**
- **July 28 Delta Aquarids; ZHR=20 (at Last Quarter)**
- **Aug 12 Perseids; ZHR=90 (after Last Quarter)**
- **Oct 21 Orionids; ZHR=20 (after Full Moon)**
- **Nov 17 Leonids; ZHR=15 (at Full Moon)**
- **Dec 14 Geminids; ZHR=120 (at Full Moon)**

**Planet Oppositions** - The three outer-most planets reach opposition on 2013. Jupiter and Venus will dominate the evening sky during parts of 2013, while Saturn will share it beauty in the evening skies from mid-spring thru early Fall.

- **Jan 1 Asteroid Metis (9) at opposition, mag 8.5**
- **May 23 Asteroid Hebe (6) at opposition, mag 9.6**
- **Jul 12 Asteroid Astra (5) at opposition, mag 10.9**
- **Jul 19 Asteroid Flora (8) at opposition, mag 8.7**
- **Aug 3 Asteroid Juno (3) at opposition, mag 9.0**
- **Aug 16 Asteroid Iris (7) at opposition, mag 7.9**
- **Jul 2 Dwarf Planet Pluto at opposition, mag 14.2**

**Asteroid Oppositions** - Seven bright asteroids reach opposition in 2013 as does dwarf planet Pluto.

**Planet Conjunctions** - There are a number of conjunctions involving the Moon, planets and bright stars. Probably the most note-worthy ones will be the triple conjunction of Venus, Jupiter and Mercury in late May; Venus’ conjunction with the Beehive Cluster; and several close conjunctions between the Moon and Spica.

- **Feb 8 Mercury 0.3° from Mars (evening event)**
- **May 27 Mercury 2.4° from Jupiter (evening event)**
- **May 28 Triple conjunction of Venus, Jupiter and Mercury (evening event)**
- **Jun 3 Venus in M35 (evening event)**
- **Jul 3 Venus 0.1°N of Beehive (evening event)**

- **Jul 21 Mars 0.8N of Jupiter (morning event)**
- **Sep 8 Mars in Beehive (morning event)**
- **Nov 25 Mercury 0.3° of Saturn (morning event)**
Lunar Conjunctions - There are a number of conjunctions involving the Moon, planets and bright stars. Probably the most note-worthy are the close conjunctions is between the Moon and Spica.

Jan 21 Jupiter 0.5°N of Moon, 11pm
Mar 1 Spica 0.1°N of Moon, 12am
Mar 28 Spica 0.0°N of Moon, morning event
Apr 24 Spica 0.0°N of Moon, 7pm
May 22 Spica 0.0°N of Moon, 4am
Jun 18 Spica 0.1°S of Moon, evening event
Jul 15 Spica 0.3°S of Moon, evening event
Sep 8 Venus 0.4°N of Moon, evening event
Oct 12 Juno 0.9°N of Moon, evening event
Dec 1 Saturn 1.2°N of Moon, morning event
Dec 26 Spica 1.0°S of Moon, morning event
Dec 28 Saturn 0.9°N of Moon, evening event

Other Moon Events
Jun 23 FULL MOON Largest Moon of the Year, 5am
Dec 17 FULL MOON smallest moon of year, 3am

Jupiter Double Shadow Events - Shadow transits of Jupiter’s moons across the disk include a rare triple shadow event in October.

Oct 11 Triple Shadow on Jupiter, 10:33pm
Oct 19 Double Shadow on Jupiter, 12:26am
Nov 5 Double Shadow on Jupiter, 7:32pm
Nov 12 Double Shadow on Jupiter, 10:09pm

Occultation Events – There are several challenging occultations of planets and stars this year. Most conditions are not favorable for St. Louis due to sky brightness or object altitude. Probably our best opportunity will be the early evening occultation of Beta Capricorni and it companion on Oct 12, 2013.

Occultations (continued)
May 9 Mercury Occ’n by Moon, daytime event, 1:13pm
Aug 18 Mars Occ’n of 7.1 mag star, morning event
Oct 11 Venus Occ’n of star mag 8.8, 8pm
Oct 12 Moon Occ’n of Beta Capricorni mag 3.1, 6pm
Nov 21 Venus Occ’n of 7.4 mag star, 4:30pm

Comet Events - The most anticipated events are for two new comets. PANSTARRS C/2011 L4 will be an evening comet in March-April. ISON C/2012 S1 could be an extremely bright comet in the morning sky in November.

Other Important Dates
April 20 – Astronomy Day at St. Louis Science Center
May 17-19 Mid-States Region AL Convention, Omaha, NE
July 17-20 – National AL Convention ALCON, Atlanta, GA
Stalking Comet C/2011 L4 PANSTARRS
by Mark Jones

The first of two bright comets visible this year is PanSTARRS (2011 L4).

FAQ

What is history of this comet?
Comet C/2011 L4 (PANSTARRS), is a non-periodic comet discovered in June 2011. The comet was discovered using the Pan-STARRS telescope located near the summit of Haleakala, on the island of Maui in Hawaii.

Will the comet hit the Earth or Sun?
No the comet will never get closer than 100 million miles to the Earth or 30 million miles from the Sun.

When can I see the comet?
Based on the trend to date, both the IAU's Minor Planet Center and JPL's Horizons system predict that perihelion will occur next March 10th or 11th. By then the comet will be inside Mercury's orbit and close to magnitude 0 in brightness. It will become visible immediately after sunset, on our western horizon by March 13th. If possible get away from city or urban lights to view the comet.

On March 13th, the crescent Moon will be just above the comet. Its maximum magnitude, although uncertain, is likely to be at least 0, and possibly much brighter, with a 10° tail. This tail will point up and away from the Sun. Over the next few weeks it will move from the western horizon to the northwestern horizon after sunset and higher in the sky, but fading. Binoculars maybe needed after April 5th.

An interesting video simulation of PANSTARRS is available on YouTube at:
http://www.youtube.com/watch?v=FeeqQFiCc2s

Two time-lapse videos taken of Comet Lovejoy in December 2011 are available at:
http://www.twanight.org/newTWAN/photos.asp?ID=3003483&Sort
http://www.twanight.org/newTWAN/photos.asp?ID=3003506&Sort

Simulation of Comet PANSTARRS in the evening sky from March 8th to April 10th is available at:
http://waitingforison.wordpress.com/comet-panstarrs/

How bright will the comet get?
The comet will pass closest to Earth on 5 March 2013 at a distance of 100 million miles. Its closest approach to the Sun will be on 10 March 2013. However, during this time it will be too close to the Sun to be visible from St. Louis. An estimate from October 2012 predicts the comet may brighten to apparent magnitude -4 (roughly equivalent to Venus). Earlier estimates had predicted a lesser showing of roughly magnitude 0.

Why are brightness estimates so difficult?
Estimating the brightness it like predicting the weather, the further out the forecast the more uncertainty. Comet brightness depends on many factors, distance to the Sun, distance to the Earth. However, there are other important factors, such as the amount of volatile gas and dust the comet nucleus contains. If the Sun’s rays “evaporate” this gas and dust from the comet nucleus, it can form a bright atmosphere called a coma and tail. The larger the coma and tail, the more sunlight is reflected off the comet and it appears brighter. Since Comet C/2011 L4 has not been seen before, we don’t know for sure if it a comet rich in gas and dust. Professional and amateur astronomers are tracking the comet and monitoring the size of the coma and tail. Brightness predictions will be updated, as the comet gets closer to the sun.

What are the key dates?
March 5-12: Comet nearest to Earth and Sun but not visible from St. Louis skies.
March 13: Comet on western horizon after sunset, look directly below the thin crescent Moon. The comet’s tail will point up in the direction of the Moon.
March 14-29: The comet gets higher in the sky each evening after sunset, however it will also decrease in brightness as it...
heads away from the Sun
March 30-April 5: The comet moves northward each evening and appears below the constellation Cassiopeia, which is shaped like a “W” above the northwest horizon.
April 5-10: The comet appears to the right of the Andromeda Galaxy. Use binoculars to see this object.

How do I find up-to-date information?
Many websites and news services will publish articles as the comet. Reliable websites are as follows:
2. Use the NASA ephemeris generator http://ssd.jpl.nasa.gov/horizons.cgi#top
4. The Universe Today http://www.universetoday.com/97208/comet-pan-starrs-how-bright-will-it-get/

Is there another bright comet visible in 2013?
Yes, comet ISON C/2012 S1 will be visible from St Louis before sunrise in November and December. This comet has the potential to be brighter than PANSTARRS. We will publish information on this comet later in 2013.

<table>
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<th>Events</th>
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<td>TOTAL</td>
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</table>

Outreach Volunteer Awards for 2012

This year we have 19 members who qualify for the Night Sky Network outreach award pin (glows in the dark!). See the table at left for the full list. This is 4 more members than qualified last year! We had a total of 804.5 volunteer hours from ALL the members including those who did not qualify for an award! Many thanks to those who did all the work bringing their scopes and knowledge to the public last year. May it only increase this year!

The awardees will be presented with their pins at the meeting Friday. If they can’t attend, we will present them at next month’s meeting or Homemade Fest.

Don’t forget to log your hours in Night Sky Network after you work an outreach event. One of the advantages is being able to track your travel mileage for tax purposes when you log your hours. Members tracked more than 5,000 miles getting to last year’s events!

If you need help with logging your hours, please ask at the meeting and we will help you get started with the program. If you haven’t volunteered yet, be sure to attend the Outreach Training Saturday morning for some good practice!

There are also many resources available on the Night Sky Network to help you with outreach. Be sure to check them out when you can! Next month, we will have an article showing where to find the resources on the system and get help with a specific activity or problem you might have with volunteering.

This article would NOT be complete without recognizing Mike Malolepszy, our dedicated Star Party Coordinator! He does all the communication with people requesting star parties and does most of the calendar notifications. None of this would be possible without him!

Thanks Mike, for all you do to keep us in contact with the public!!!
Homemade Fest 2013
Saturday Evening, February 16, 2013

will be held at the
James S. McDonnell Planetarium
IN FOREST PARK
in the Orthwein Star Bay

Use the main entrance, then the elevators to enter the Star Bay

DON’T MISS THIS HOMEMADE FEST!

Temporary parking is available at the main entrance for unloading and loading your projects.

Doors open at 5:00 to unload equipment

We will begin eating as soon as the food is ready.

The formal opening and presentations will begin at approximately 6:45 p.m.

This is our winter get-together --

A combination event of a potluck dinner followed by entertaining talks by those members who want to show off anything of astronomical interest that they have, or have done. The cleverness, creativity and talent of our members is truly impressive. So bring a favorite dish, have a great meal, then sit back and enjoy some fun presentations and be amazed at the craftsmanship of our members!

Since dinner is potluck, everyone is asked to bring a dish. The club will furnish the beverages, bread, paper plates, utensils, etc.

Please call Jim Small at 314-307-0692 for more information.

This event is free for SLAS members and their families and $5.00 for non-members and their families.
SAINT LOUIS ASTRONOMICAL SOCIETY
MINUTES OF EXECUTIVE BOARD MEETING – December 6, 2012

1. Opening Activities  Call to Order 7:06 pm  Read/Approve November Minutes  Jim Trull moved, Bill Biermann second. Minutes approved.

2. External Business  PTV at SLSC December 7  7 pm Sky Tonight show, 9 pm Seeking New Earths, 10pm 2 Dr. Who Christmas episodes  PTV will start at dark-thirty. Will conclude at 10pm  Comet special viewing in November? March?  Discussed when to host a comet viewing session. Discussed Planetarium 50th anniversary events.

3. Director Reports:  If needed
President – Jim S  Board meeting dates are set for 2013: January 10, February 7, March 7, April 11, May 9, June 6, July 11, August 8, September 12, October 10, November 7, December 12
Vice President – Bill Biermann
Survey to be sent to the membership. Sent to the membership via Night Sky Network and listed in the newsletter.

Secretary – Mark J
Glen Greenway has not picked up his outreach certificate so we should be able to give it to him at the next meeting. I have not been able to contact Glen by phone so I sent him snail mail asking him to call me. We will try to contact him before the meeting.

The annual Rockwood School District “New Horizons in Space” will be Jan 11, 2013† I put this on the NSN calendar. Looking for volunteers. Babler has given us permission to hold small observing sessions at the monument area. Upcoming observing sessions will be scheduled for the following Saturdays. Pretty good turnout for the first event in November. Some new members came and the group stayed until 9:30. NGC 457 was a new object introduced to the group by Brian Siegfried along with other objects. Newsletter article forthcoming. Laumeier park was suggested for doing the sessions.

Dec 22, Jan 19, Feb 16, Mar 16, and Apr 20 approx start time, 45 minutes before sunset
The SLAS 13” red tube Coulter is now at my house. A tentative date for work to be completed will be discussed by Grant Martin, Mark Jones and Greg Gaines and reported later. †

Treasurer/ALCor – Rhonda W
Monthly reports were sent. Budget was approved and will be voted upon by membership at the December meeting.

Inventory needed for the following to be able to close the books for the year:
All merchandise such as shirts, caps, mugs, etc.
Galileoscopes
Loaner scope equipment needs to be inventoried for insurance purposes
Hospitality – Grant M  End of year bash Grant will call Joe McHugh about Maya Cookie, cake, other surprises.

Board member at large reports
Greg Gaines
Jeromy Naethe
Jim Trull  Only one scope for the winery, nice group, handled in small groups at a time.

4. Committee Reports:  If needed
Membership: Rhonda discussed what has been done to help with membership renewals. Resent letters, talked to some people and has made good effort to get members to renew.

Merchandise: will write an article for newsletter with instructions for ordering shirts.

Telescope Making, Librarian, Night Sky Network, SLASdialogs, Dark Site, Loaner Equipment, Publicity, Observing Programs

Topics for Discussion:

Meetings for Saturday Sessions  Next Saturday session 1/17, continue Telescope toolkit. Saturday night 11/17 at Babler, first event for members beginning telescope training.

5. Old Business  Lighted sign

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

7. Closing Activities  Jim Trull Moved to adjourn and Bill Biermann second. Meeting adjourned 8:46 pm
**Upcoming Star Parties and Other Events**

For details on this and other upcoming events, check out the Night Sky Network Calendar linked on the Home Page for SLAS at [http://www.slasonline.org](http://www.slasonline.org)

**Dark Sky Observing Dates**
See you in the spring!

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

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<td>July 17, 2013</td>
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<tr>
<td>December 11, 2013</td>
<td>(8 day old Moon)</td>
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**Future SLSC Public Telescope Viewing Events:**
These events are held the first Friday of the month-

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<tbody>
<tr>
<td>March 1</td>
<td>SLAS Regular Meeting</td>
</tr>
<tr>
<td>March 7</td>
<td>Outreach Training (am)</td>
</tr>
<tr>
<td></td>
<td>Babler Observing Group (pm)</td>
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<tr>
<td>March 7</td>
<td>St Joseph Imperial Science Night</td>
</tr>
<tr>
<td>March 13</td>
<td>Francis Park</td>
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<tr>
<td>March 15</td>
<td>SLAS Regular Meeting</td>
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<tr>
<td>March 20</td>
<td>Homemade Fest</td>
</tr>
<tr>
<td>March 21</td>
<td>Manchester Park</td>
</tr>
<tr>
<td>March 29</td>
<td>Avery Park/Kirkwood</td>
</tr>
<tr>
<td>April 5</td>
<td>SLSC PTV</td>
</tr>
<tr>
<td>April 6</td>
<td>Kirkwood Park</td>
</tr>
<tr>
<td>April 11</td>
<td>SLAS Board Meeting</td>
</tr>
<tr>
<td>April 17</td>
<td>Francis Park</td>
</tr>
<tr>
<td>April 18</td>
<td>Ellisville Stargazing</td>
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<tr>
<td>April 19</td>
<td>SLAS Regular Meeting</td>
</tr>
<tr>
<td>April 20</td>
<td>Crestwood Park</td>
</tr>
<tr>
<td>April 26</td>
<td>Astronomy Night at Wildwood Middle school</td>
</tr>
<tr>
<td>April 27</td>
<td>Creve Coeur Park</td>
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</table>

**SLAS Executive Board Meetings Location will be at the Edward Jones YMCA.**

<table>
<thead>
<tr>
<th>Date</th>
<th>Event Description</th>
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<tbody>
<tr>
<td>February 7, 2013</td>
<td>SLSC PTV</td>
</tr>
<tr>
<td>March 7, 2013</td>
<td>SLAS Board Meeting</td>
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<tr>
<td>April 11, 2013</td>
<td>Francis Park</td>
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<tr>
<td>May 9, 2013</td>
<td>SLAS Regular Meeting</td>
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<tr>
<td>June 6, 2013</td>
<td>Ellisville Stargazing</td>
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<tr>
<td>July 11, 2013</td>
<td>SLAS Regular Meeting</td>
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<tr>
<td>August 8, 2013</td>
<td>Crestwood Park</td>
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<tr>
<td>September 12, 2013</td>
<td>Astronomy Night at Wildwood Middle school</td>
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<tr>
<td>October 10, 2013</td>
<td>SLAS Regular Meeting</td>
</tr>
<tr>
<td>November 7, 2013</td>
<td>Crestwood Park</td>
</tr>
<tr>
<td>December 12, 2013</td>
<td>SLAS Regular Meeting</td>
</tr>
</tbody>
</table>

**Stargazing at the Gateway Arch Dates:**
See you later this year!

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**SLAS EVENTS**

**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 $______________

Check all that apply:
___ Renewal
___ Address Change Only
___ Please send my newsletter by regular mail
___ New Member!

Please send completed form with check (no cash please) made payable to
St Louis Astronomical Society
Rhonda Whelan, Treasurer
P.O. Box 256
Waterloo, IL 62298
e-mail: treasurer at slasonline.org

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vicepresident at slasonline.org
Secretary Mark Jones 636-394-2342
secretary at slasonline.org
Treasurer Rhonda Whelan 314-750-0262
treasurer at slasonline.org
Hospitality Grant Martin 636-634-6607
hospitality at slasonline.org

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board13 at slasonline.org
Jeremy Naethe 785-554-7021
board14 at slasonline.org
Greg Gaines 314-277-3082
board15 at slasonline.org

ALCOR Rhonda Whelan 314-750-0262
(Astronomical League Correspondent )
treasurer at slasonline.org

msral_rep at astroleague.org

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darksite at slasonline.org
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observing at slasonline.org
Telescope Making Bill Davis, Jim Melka 314-469-3061
telescope at slasonline.org
ST. LOUIS ASTRONOMICAL SOCIETY

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.