

# NOVA

Official Newsletter of the Salt Lake Astronomical Society



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## CALL FOR SUBMISSIONS

As Editor of the NOVA, I am inviting all members to submit contributions of your own photographs and written pieces to be included in our bimonthly NOVA editions. We want to hear from all the members, something of interest to our fellow members. Thank you all!

All the best, Shoshana Ebertz, Editor, ([ebertz@comcast.net](mailto:ebertz@comcast.net))

Jamie Bradley, Assistant Editor, ([jbradley@jamiebradley.com](mailto:jbradley@jamiebradley.com)).

## Please Welcome The Newest SLAS Members!

Daniel Bledsoe  
Samuel Cropper

James Harris  
Nathan Baxter

Skyler Holt  
Jeromy Nelms

Devin Heward  
Royce Bair

Terry Winget

FEATURED MEMBER: INTERVIEW WITH ROYCE BAIR,

a brand-new SLAS Member:

Low Level Light Astro landscape Photography

Welcome, Royce!



Shoshana: When did you first have an interest in astronomy?

Royce: I grew up in Eastern Oregon on a farm. I was about fourteen and became interested in the sky. I didn't have my own telescope, but I had a friend who came over frequently. I had a friend with a four inch telescope, an Edmunds Scientific with a cardboard tube. We got to look at the night sky.

Shoshana: Would you like to tell us a little about your background?

Royce: I started in magazine photography in 1975, commercial in 1985, corporate in 1990, and stock photography up until 2005. I've been semi-retired since 2012, doing night photo workshops 6 months a year. I concentrate now on nightscape photography which can be described as starry night skies with a landscape feature —often taken in one exposure with low level artificial light enhancements, or with a second exposure.

Shoshana: What are you focusing on now (pun)?

Royce: I'm working on a book titled "Finding Darkness" about how our night skies have changed. Less than ten percent of the population in the United States can see the Milky Way. I'm not against outdoor lighting but I'm against the improper use of lighting. Most of the lighting is much more than we need, and used improperly. You can get by with a lot less than what people are using.

One of my websites: [Low level lighting.org](http://Lowlevellighting.org) is for the purpose of teaching the benefits of low level lighting, which is usually just a shade above star light, and never more than Quarter Phase Moonlight. When using these lights, we typically need to wait fifteen to twenty minutes until our eyes adjust, so we don't overpower the stars with our lights. The lights are kept on during the whole camera exposure time; say for 20 – 30 seconds. These lights are strategically placed to give rim or accent lighting. This technique is an alternative to light painting when you take a bright, handheld flashlight and just paint for a shorter time.

We are trying to keep the national parks happy, because we are seeing night photography progressively banned from the parks. Light painting is now being restricted. If photographers don't become more responsible, they could be banned from the parks one hundred percent.

Three or four years ago I was in Bryce National Park, doing low level lighting. A whole group of tourists came through in the middle of the night with high powered flashlights and shone them all over. This is very disturbing for people who are going to the parks for star gazing. The national parks have advertised for many years that "half the park is after dark."

John E. Bortle is an American amateur astronomer who came up with a measurement of levels to qualify the darkness of the night sky. With extremely good night sky conditions you can see Orion nebula with your naked eyes, which is almost unheard of at Bortle class one or two. In downtown Salt Lake City at night it's about a Bortle class 8 or 9. In the suburbs we have 7 or 8. In the rural areas 5 or 6, and about fifty miles from the big cities you can get a class 3 or 4.

Years ago, near Tooele, in Stansbury Park, that used to be a Bortle class 4. It's more like a 6 now with the encroaching city. Much of our outdoor lighting is improperly installed and inefficient. Some cities are starting to change out the yellow-orange sodium vapor street lights with more energy-efficient LED lights. Although these lights use much less energy per lumen of light produced, they can actually be more light polluting, unless their design includes a lower Kelvin rating of around 3000 degrees. Similar to the screens on our computers and mobile devices, most LED's have a Kelvin rating of about 8000 to 10000. Daylight averages about 5000° Kelvin. You may have noticed that people looking at their mobile devices at night have their faces lit up with a bluish light. This over exposure to bluish light can adversely affect our sleep patterns and health. Studies done on cities where street lights have been converted to LED's, without the proper 3000° Kelvin conversion, have shown that people are having all kinds of neurological difficulties, including headaches —not to mention a huge increase in light pollution.

**IMAGE:** Milky Way panorama over old barn



*In this image I'm illustrating how difficult it is becoming to get away from the light pollution our cities produce...*

*“Finding Darkness in Rural America” — A 240-degree panorama (10 image stitch) of an old barn that lies about 35 miles southwest of the Salt Lake City metro area. That bright area to the left of the barn is light pollution coming from SLC metro, just behind the Oquirrah Mountain range. The city lights are producing a Bortle class 9 to 7 darkness (color code white thru red) — so bright that residences there can only see about a dozen of the brightest stars in our universe! The distance from the city reduces the light pollution at the barn to a Bortle class 4 darkness (color code green), and the area behind the barn is even darker: a Bortle class 3 (color code blue). Another 15 miles to the southwest, it becomes a Bortle class 2 (color code gray). Do a Google search on “Dark Sky Finder” to map the darkness in your USA area. In other parts of the world, do a search for “Dark Site Finder”.*

In 2010 I got into wide-field astro-landscape [space] photography. There are only a handful of people in the world that were doing this, where the landscape is included in the astrophotography. This is very difficult because the earth is rotating. The deep sky astrophotographers use an

equatorial mount. However, if we track the stars, then the earth is moving! If we want to include both the stars and the landscape, we have to keep our shutter speeds between 15 to 30 seconds when using a wide angle lens. This requires lenses with very fast or wide apertures and very high ISO settings for our digital camera sensors, which create lots of noise —unless we make some technical adjustments.

By about 2008 - 2010, digital camera sensor technology improved enough that I was able to start doing my style of nightscape photography. My images became extremely popular and were printed worldwide.

We are pushing this low level lighting because regular light painting is invasive to night vision. Most light painting outputs about 40 times more light than is necessary. Photographers using low level landscape lighting that remains on throughout the exposure process are less disruptive to people watching the night sky than those who use brief blasts from high-power flashlights.

**IMAGE:** Milky Way over “Dragon Arch” (my name for a unique view of Sunset Arch in Grand Staircase-Escalante National Monument). *This is one exposure. The arch was lit from the left using one low-level light underneath the arch with and three small flickering LED “tea candle” lights. This Escalante region has some of the clearest and darkest skies on our planet — many reaching a Bortle class 1.*



In typical deep sky stacking, most aren't worried about the landscape. When this stacking is done, a median filter is used to remove the noise resulting from 10, 20, and 30 multiple exposures. If the stars are lined up, the landscape is blurred. With Starry Landscape Stacker and some of the other new software out there, the photographer will highlight stars near the landscape and on the

first exposure. Then the software tracks that and makes a mask for the landscape and keeps it from moving. It then aligns all the stars with the landscape. There are plenty of stacker software programs, but few that make the landscape portion relevant so it doesn't blur. Fitswork is a good German-made stacker on the PC side.

**IMAGE:**

Milky Way Tetons



*This is a photo I did last September from the Snake River Overlook in Grand Teton Nat'l Park, WY.*

*I waited until mid-September so the Milk Way would align with the Grand Teton peak, which faces almost due west from this location. Although the bright core of the MW is just below the horizon, "The Great Rift" (where the MW splits and forms the "Sea of Darkness") rises dramatically over the Tetons. Taken with my Canon 5DM3, using a Rokinon 24mm f/1.4 @ f/2 • 13 sec • ISO 6400 for the sky • blended with a 2nd exposure for the foreground @ f/2.8 for 240 sec • ISO 3200 (using the camera's "Long Exposure Noise Reduction" function).*

To plan for the alignment of the stars with my landscape features I use apps like Stellarium and Photopills, which I think are much better than The Photographer's Ephemeris used by most other photographers. Another one I like is Sky Guide. The creator went out and shot 37,000 pictures all over the world, and then stitched them into one 3D image and put it with software. You can stand anywhere in the world (or use coordinates), put in the time and date and it will show you the night sky in relation to the Earth's horizon. My favorite feature is how you can fast forward the night sky in 'real time' and see how foregrounds might align with the stars.

**IMAGE:** Monthly Milky Way Movement



*Planning your Milky Way alignment: Aligning the Milky Way over the Teton Range required me to wait until September. Although the core of the MW moves nightly from East to West at about 15° per hour, the seasonal movement adds another 30° per month—moving the MW almost 150 degrees to the West, going from April to September. You can forecast your alignment using apps like Photopills and SkyGuide.*

*Here, I've taken 6 Milky Way images from the Sky Guide app, all captured on the same day of each month @ 2:00am (the time and date I ended up taking my Teton photo) and pasted them into one composite photo to illustrate that movement; and, I've added a real silhouette of the Teton Range on the West side to show the actual perspective from the Snake River Overlook.*

We are now using stacking and tracking to reduce digital noise and help make the images better. With proper use of these techniques, many nightscapes look great without any artificial lighting enhancement to the foregrounds.

At our event coming up on Tuesday, March 14 from 6:30 pm until 9:00 pm at the West Jordan Library Viridian Event Center, with me will be two guest presenters: Clarence Spencer from Spencer's Camera in Alpine, Utah, who does some of the astro sensor conversions for NASA, and Eric Benedetti, another local astrophotographer.

References:

Public Service Website: <http://lowlevellighting.org/>

Here's a link to the event on March 14 that may be of interest to club members:  
<https://www.meetup.com/NightScape-Photography/events/237016483/>

Royce's blog URL is: <http://intothenightphoto.blogspot.com/>  
...or just [www.RoyceBair.com](http://www.RoyceBair.com)

## MINUTES OF THE SALT LAKE ASTRONOMICAL SOCIETY TRANSITION BOARD MEETING

January 11, 2017

**2017 Board members in attendance:** Dave Bernson, Joe Bauman, Aleta Cox, Nate Goodman and Rodger Fry

**General members in attendance:** Charlie Green, Patrick Wiggins, Joan Carman, Siegfried Jachmann, Enid Norton, Ken Warner, and Tina & Athan Ballamis

Meeting called to order: 7:00 PM

### **2017 Star Party Schedule**

A tentative schedule had been prepared by Siegfried Jachmann and was reviewed by meeting attendees. A discussion of the schedule was made and one change that was noted is that the Harmon's star party scheduled for the Harmon's Headquarters on June 30<sup>th</sup> will be moved to the South Jordan Harmon's. This revised schedule will be posted on the web site event calendar and will be brought before the general meeting attendance for a vote on January 18, 2017.

### **Public Relations and the Board of Directors Communications**

A discussion was held on how to treat communications between the board of director's members on SLAS CHAT. It was agreed that we should be open and transparent in all our business dealings. Joe Bauman made a motion that all communications made on SLAS CHAT will be open for review by any SLAS member but the Board Members will be the only ones with the ability to post to this site. Rodger Fry seconded this motion and all board members voted to accept the motion.

A discussion was made as to Ryan Simpkins contributions to SLAS in the past and Dave Bernson acknowledged his valuable efforts.

### **"Private" and Private Club" Star Parties**

A discussion was made as to the distinction of Private Star Parties & Private Club star parties. It was noted that in the transition board meeting, that Aleta Cox will continue coordinating the Special School star parties and Nate Goodman will coordinate the SPOC star parties. Don Colton was appointed in the past to coordinate the dark sky star parties such as Bryce Canyon and Capitol Reef.

### **Clements Scope and Observatory Update**

Rodger Fry summarized where we stand on the Clements Building plans which are that we have made a down payment of the steel portion of the building and will have detailed drawings of the steel structure within a weeks' time. After that, we will submit these plans to our civil engineer

for design of the concrete portion of the building. We will plan on starting work on site in late February after the thaw has occurred and hope to have the building ready for a grand opening on May 20, 2017.

We have been assured by Tooele County that the \$25K grant is approved and we will be issued the funds when we are ready to spend them.

In response to a SLAS-Blast that I sent out on January 1, 2017, we have received \$3,550 in donations toward the construction of the building.

A discussion was held as to whether we should open up the observatory for the tour group that will be in Salt Lake City as part of the total eclipse event. It was agreed that no commitments should be made until the building is completed and we insure that it is operational.

### **Solar Eclipse Plans for the Club**

A discussion was held about whether SLAS should have any public event for the partial eclipse that will be visible from Salt Lake. It was agreed that the core of our participating members will be out of town for the total eclipse and those that are staying would like to enjoy the eclipse without the distraction of presenting this to others so SLAS is not planning to have any event but it was noted that the Clark Planetarium is planning to have an event.

### **Treasurers Report**

The financial report was reviewed as listed on the web site as January 01, 2017 Financial Statement

### **Old Business**

In the past, grants donated to SLAS from the Adobe Corporation because of volunteer work by Ryan Simpkins and Don Knowlton were placed in the "Other fund". On the web site this other fund was listed as Adobe. Joe Bauman made a motion to transfer these funds from the "Adobe" fund to the general fund and Aleta Cox seconded the motion. The vote by the board was unanimous. Because of this, \$1,039.19 was transferred from the Adobe account to the general fund including the \$220.00 check that we received in the mail that was delivered by Patrick Wiggins.

### **New Business**

A solar party is planned at the Natural History Museum of Utah this coming Saturday, January 14, 2017 from noon to 3PM. Nate Goodman indicated that he might not be able to make it but the weather should be good.

## **Non-Temporal Business**

Dave Bernson will be asking the members in attendance to the General Meeting on January 18, 2017 for volunteers to be the ALCOR representative.

A discussion was held as to whether SLAS should apply for a ZAP grant in 2018. Joe Bauman indicated that he would be willing to write the grant if Ann House couldn't do this. Nate Goodman made a motion that we apply for a 2018 grant and Aleta Cox seconded the motion. A vote by the board was unanimous.

**Meeting Adjourned:** 8:15pm

## **General Meeting Minutes**

**Date:** January 18, 2017 7:30 PM

**Location:** Room 207 Calvin Rampton Technology Building at Salt Lake Community College

**Attendance:** 63 members and guests

SLAS President, Dave Bernson welcomed all in attendance and introduced our 2017 SLAS board (Dave Bernson, Joe Bauman, Aleta Cox, Nate Goodman and Rodger Fry)

Nate Goodman explained about the Solar Party schedule at the Utah Museum of Natural History on every clear Saturday from noon to 3:00PM from now through March. Dave Bernson informed the attendees that Nate Goodman will be coordinating the SPOC star party volunteers and Aleta Cox will coordinate the special and school star parties.

The meeting lecture was presented by Dave Bernson "Anchor in Orion"

After the presentation we entered the business portion of the meeting as follows:

1. Dave Bernson showed the attendees the solar glasses that have been purchased and indicated that they would be available for purchase for \$1.00 each starting at the February general meeting.
2. Lowell Lyon, the coordinating representative for the Astrocon 2017 indicated that the convention is now sold out but they still have room for people to book the Star-b-que or the public star party.

3. Dave Bernson gave a discussion of the total solar eclipse experience and discussed options.
4. Rodger Fry presented a PowerPoint on the progress for the Clements Building project.
5. Dave Bernson presented the 2017 budget which is the same as in 2016 which includes \$6.00 General Fund, \$3.00 Entertainment, \$5.00 Astronomy League, \$3.00 Insurance and \$3.00 SPOC for a total of \$20.00. Patrick Wiggins presented a motion to accept the budget and Aleta Cox seconded the motion. The vote was unanimous.
6. Dave Bernson outlined the 2017 star party schedule as listed in the SLAS website and Patrick Wiggins presented a motion to accept this, Joe Bauman seconded the motion and the vote was unanimous.

The meeting was adjourned at 9:05 PM

### **MINUTES OF THE SALT LAKE ASTRONOMICAL SOCIETY BOARD MEETING February 8, 2017**

Note: these minutes were taken at the board meeting and compiled by Aleta Cox. Rodger Fry was not able to be at the board meeting and he asked if Aleta would take minutes for him.

**2017 Board members in attendance:** Dave Bernson, Joe Bauman, Aleta Cox and Nate Goodman. (Rodger Fry was out of town.)

**General members in attendance:** Charlie Green, Patrick Wiggins, Joan Carman, Siegfried Jachmann, Enid Norton, Stan Ericksen, Larry Holmes and Mike Clements.

Meeting called to order: 7:00 PM

#### **2017 Star Party Schedule**

Dave Bernson announced that Tara Haynie is no longer with Harmon's Grocery Stores. There is a new person, Lyndi, assigned to that position. He has left several messages regarding our star party scheduling but she has not returned his calls. Dave also mentioned that Raegan Sharman @ Wheeler Farm is no longer there. Her phone number has been disconnected. Dave says he

will contact these people at Harmons and Wheeler Farm personally to confirm our star party schedules with them, and then we will have star party flyers printed up.

### **Board Member Reports**

**Joe Bauman** talked with Ann House about ZAP Grants. Her schedule is such that she cannot write the grant for us this year but will be willing to provide advice and guidance. Joe has signed up for a seminar on how to write a ZAP grant. He says that after taking this seminar, he will be on target to write the grant and get it submitted by the due date which is 31 March, 2017.

**Nate Goodman** reported on solar parties held at the Utah Museum of Natural History. They will continue through March. The Museum likes having us there to do these parties. There won't be a solar party at the museum this Saturday, February 11, 2017 due to weather. Snow is expected.

**Aleta Cox** reported that we are beginning to get calls for special star parties. Magna Library has requested one in July. It is now on the website calendar.

### **Clements Scope and Observatory Update**

Since Rodger Fry is out of town, Dave Bernson reported that Rodger says we are on schedule to have the new building done for Astronomy Day.

### **Treasurers Report**

Treasurer Rodger Fry is out of town so there was no report given.

### **Library Loaner Scope Update**

Joan Carman reported that she met with the new contact person at the Salt Lake County Library this morning about the program we began with them last year. The new contact, Kent Dean, was very nice but not quite ready to jump in and order more loaner scopes at this time. He's still dealing with budget issues and said that maybe by June they'd be ready to do something. He would like pictures of our Eagle Scout candidate Athan Ballamis upgrading the two scopes he raised funds to donate to the Taylorsville Library. They want to put the photos on the county library's web site.

Joan is wondering if we should open the program up to other library systems- perhaps Salt Lake City Library, Utah county, or Davis or Tooele Counties. Joe said he knows some people at the Salt Lake City Library system. He and Joan will talk, and Joan will follow up with these other sources. Larry Holmes asked if the telescopes being checked out were seeing any damage or abuse. Joan says they have all been returned in excellent condition with everything still attached, and there are still waiting lists to check them out.

Nate Goodman mentioned that in the December issue of the *Reflector Magazine*, an amateur astronomer took one of the small scopes like we use in the loaner program, and modified it and donated it to a library in Ottawa, Canada, in honor of his mother.

### **New Business**

Joe Bauman announced that he has started a new Blog. It has been picked up by the *Deseret News* and will run once a month in the paper. Along with it he always includes a link to the SLAS website.

There was a discussion as to whether we should purchase more solar viewing glasses for the upcoming solar eclipse. Patrick Wiggins has an offer to purchase glasses for 21 cents each plus shipping. The club has purchased some of these from another source, but it was decided that we should purchase another 1000 solar glasses. Aleta Cox made the motion and Joe Bauman seconded it. The vote was unanimous in favor. We will present this to the general membership because the total amount will be over the \$200 limit. Patrick will place the order, pay for it, and then the club will reimburse him. We will be selling them at general meetings and public star parties. Cost to purchase glasses will be \$1.00 each in cash.

Patrick gave Dave a packet containing insurance policy papers. Dave indicated he will give it to Rodger.

International Observe the Moon Night will be held on 28 October, 2017. There was a short discussion about whether we as a club would do anything for it due to the date being so close to closing down SPOC for the season. Nothing was decided.

As club historian, Patrick noted that the club's membership dropped by approximately 1/6 this year- from 302 members last year, to 248 members this year. He says we mention this frequently. He wonders if it is because there isn't a big astronomical event going on or if it is something else. No one had suggestions.

### **Old Business**

No old business to report.

**Meeting Adjourned:** 7:52pm

## General Meeting Minutes

**Date:** February 15, 2017 7:30 PM

**Location:** Room 207 Calvin Rampton Technology Building at Salt Lake Community College

**Attendance:** 61 members and guests

SLAS President, Dave Bernson welcomed all in attendance and introduced our 2017 SLAS board (Dave Bernson, Joe Bauman, Aleta Cox, Nate Goodman and Rodger Fry)

Patrick Wiggins presented information on the discovery and monitoring of near-Earth Orbit minor planets (Asteroids). Following his presentation, Rodger Fry gave a PowerPoint presentation on Radiometric Age Dating of Rocks including Meteorites.

Following this presentation, Dave Bernson informed the attendees of the need to give Don Colton information if they are planning to attend the 2017 Bryce Canyon Astronomical Festival to be held June 21 through 24, 2017.

Rodger Fry presented information on progress on the Building to house the Clements Telescope at the Stansbury Park Observatory Complex

Dave Bernson then presented a discussion of Meteor Craters that have been identified on Earth and the big one that caused the extinction of the dinosaurs 66 million years before the present.

Dave Bernson then held a drawing to all members in attendance to give away two copies of the book Night Watch and four copies of the book The Stars.

Luke Moses sold eclipse glasses to those members present that desired to purchase them for \$1.00 each.

The meeting was adjourned for advanced training at 9:40 PM

### SLAS Member Information

The SLAS Member Information file is available at <http://slas.us/slasbooks/NEWMEM.PDF>.

### Loaner Telescopes For SLAS Members

SLAS has several scopes available for loan to current SLAS members. Check the SLAS website under "Membership Benefits" for details.

### 2017 SLAS Board of Directors

President	Dave Bernson	801.263.9264	bernsondave@gmail.com
Meetings			
Vice President	Joe Bauman....	801.583.7935	josephmbauman@yahoo.com
Publicity, PR and Web Content			
Secretary-Treasurer	Rodger Fry	801.288.0851	rcfry@comcast.net
Membership Dues & Renewals			
Board Member at Large	Nate Goodman	801.277.0193	ngoodman6053@gmail.com
SPOC Star Party Coordinator:			
Board Member at Large	Aleta Cox	801.966.2636	alc@fredccox.com
School & Special Star Parties			

### Appointed Positions

Astronomical League Contact	Ryan Simpkins	801.602.8661	simpkins.ryan@gmail.com
Equipment Manager	Anderson, Mike	801.910.0997	fisherman285mike@gmail.com
Historian	Patrick Wiggins	435.882.1209	4099wiggins@gmail.com
NASA Night Sky Ambassador	Ann House	801.671.8447	ann@annhouse.org
Newsletter Editor	Shoshana Ebertz	801.884.7522	ebertz@comcast.net
Newsletter Asst. Editor	Jamie Bradley	801.916.958jbradley@jamiebradley.com	
Observatory Director	Rodger Fry	801.288.0851	rcfry@comcast.net
Private Star Party Coordinator	Don Colton	801.571.9757	dcoltonsprint@earthlink.net
Solar Scope Manager	Ken Porras	801.210.8427	kennethprrs@gmail.com
Webmaster	Ken Warner		webmaster@slas.us
ZAP Grant Writer	Ann House	801.671.8447	<a href="mailto:ann@annhouse.org">ann@annhouse.org</a>

### Current SPOC Advisory Committee

Chair through DEC 2018	Rodger Fry	801.288.0851	rcfry@comcast.net
Member through JAN 2018	Rodger Fry	801.288.0851	rcfry@comcast.net
Member through JAN 2018	Stan Eriksen	801.446.1479	staneriksen@icloud.com
Member through JAN 2017	Larry Holmes	801.467.7855	larry@kijoda.com
Member through JAN 2018	Bill Kennedy	801.964.6199	truss_tube@hotmail.com
Member through JAN 2018	Nate Goodman	801.277.0193	ngoodman@lgcy.com
Member through JAN 2019	Ken Porras	801.210.8427	kennethprrs@gmail.com
Member through JAN 2017	Patrick Wiggins	435.882.1209	4099wiggins@gmail.com
Member while SLAS President	Joan Carman	801.943.4192	jcarman6@q.com
Member as Obser. Dir. Emeritus	Bruce Grim	435.882.5237	bmargrim@msn.com

Member while Harmons Rep. Tara Haynie

### **Current SPOC Telescope Instructors**

Mike Andersen	Ealing	801.910.0997	<a href="mailto:fisherman285mike@gmail.com">fisherman285mike@gmail.com</a>
Dave Bernson	Refractor, Ealing, Grim	801.263.9264	<a href="mailto:dustynebula@gmail.com">dustynebula@gmail.com</a>
Rodger Fry	Refractor, Ealing, Grim	801.288.0851	<a href="mailto:rcfry@comcast.net">rcfry@comcast.net</a>
Bill Kennedy	Refractor, Ealing	801.964.6199	<a href="mailto:truss_tube@hotmail.com">truss_tube@hotmail.com</a>
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NOVA is a publication of the Salt Lake Astronomical Society, a non-profit organization. Nova contains minutes of meetings, Board member names & contact info, activities, reports and special club events. The editor of NOVA is appointed by the Board. Members are encouraged to contribute content. Current NOVA editor is Shoshana Ebertz 801.884.7522, Assistant Editor is Jamie Bradley 801.916.9587.

### **Events Calendar**

View a list of all SLAS events online on the Events Calendar

### **2017 Star Party Schedule**

New moon weekend Private Star Parties both Friday and Saturday

1st Quarter Moon Weekend Friday Harmons Saturday SPOC

Full Moon Weekend Saturday 9:00AM-Noon Winchester Park Solar Parties

3rd Quarter Moon Friday Wheeler Farm Saturday SPOC

Dave Bernson indicated that the exact dates and at which Harmons the star parties will be held will be determined by him in the near future and will be ready for review at the next board meeting.

### **2017 Meeting Schedule**

A discussion was held as to the time and location for the 2017 meetings and the outcome was as follows:

Board Meeting: 2nd Wednesday of each month at Denny's 250 West 500 South at 7:00 PM

General Meeting: 3rd Wednesday of each month, January through November, at the Salt Lake Community College at 7:30PM

A message from the Editor:

NOVA is seeking original articles and photographs from the membership for the next, and forthcoming newsletters. If you have something you would like to contribute, would you please email us at:

[ebertz@comcast.net](mailto:ebertz@comcast.net) and [jbradley@jamiebradley.com](mailto:jbradley@jamiebradley.com)

The article doesn't have to be academic in nature, it could be something you experienced, learned, or a project you are working on.

All contributions will be gratefully welcomed!

All the best,

Shoshana Ebertz, Editor

Jamie Bradley, Assistant Editor