

NOVA



Official Newsletter of the Salt Lake Astronomical Society
Volume 50 Number 11 November 2020

SLAS 's Newsletter's 50th year of publication.

Please Welcome The Newest SLAS Members!

Alberts, Floyd
Vawdrey, Nicole

Forbes, Christian

Keller, Max

Ramirez, Ashlie



Justin Davenport got this image of Mars on 6 October.

SALT LAKE ASTRONOMICAL SOCIETY BOARD MEETING

14 October 2020

Special Note: Due to the COVID-19 outbreak the meeting was held virtually.

Board Members in Attendance: Luke Moses, Rodger Fry, Daland Speirs, Tom Sevcik, John Drabik

Other Members in Attendance: Patrick Wiggins, Ken Warner

Location: Online virtual meeting using Zoom

President Luke Moses called the meeting to order: 7:04 PM

Rodger's report was first. He will be the guest speaker next week, on the topic of Mars Geology. November's guest speaker will be Stacey Palin from Weber State University. She has not yet specified the topic.

Rodger hopes we can get a Sale Inventory at SPOC soon, for equipment in the storage area. This includes the recent two LX 200 16" telescopes, plus several other telescopes in the Wiggins building, along with the recently donated domes (2.2 meter, and 10' diameter), mounts, and other gear.

Rodger suggested that on Friday the 30th at 2 PM, we close SPOC and perform the inventory at that time. SPOC is being used sporadically right now, mainly the Grimm telescope (by Richard Curtis and others). Since SPOC typically closes at the end of October or first week of November, the session on the 30th should have no impact on users.

Rodger also noted that having the inventory done at that time will enable us to inform members of available gear, with prices or starting-bid amounts, at the November General meeting.

Patrick reminded the Board about possibly donating SLAS's unused 2.2 meter building and dome to the astronomy club in California whose observatory had been destroyed by one of the many wildfires burning in their state. With the board's approval Patrick will reach out via email to see if they are interested. There was brief discussion as to whether we should charge them for the dome, but the general feeling was that since they are a not-for-profit group, and since there have been no offers on the dome, that a donation is appropriate. However, they will have to drive to Utah to pick it up, or arrange transport for it.

[UPDATE: Patrick has heard back from them. They have politely declined the offer since they have been offered a dome from a site much closer to them.]

Rodger showed two recent small telescope donations, one a Maksutov and the other a small Bushnell refractor. He noted that a photographer has asked if she can borrow the Maksutov for an astronomical shoot; Board members agreed this would be OK as long as we are certain to get it back. Rodger noted that the telescopes need covers, and John offered to print one for each telescope. Rodger will send the dimensions in the next day or two.

Rodger asked that one more SLAS Blast be sent, reminding people that the elections are active, and that voting ends at midnight next Tuesday so that votes can be tallied before the General meeting. Ken noted that he has the voting page online, but that paper ballots are probably not workable at this point due to mail delivery times. In addition, he noted that those getting a paper ballot would have to get the form from slas.us, and so anybody doing that could just vote electronically. However, if there are member who would like to hand-deliver their ballot (there were just two last year), they can drop them off at Luke's house, by 4:00 PM next Tuesday. Luke will send an updated SLAS Blast.

Patrick had an additional SPOC note, that we thank Cowboy Builders for their donated concrete work on the Kolob building. He noted that the work turned out great. John mentioned that he has tried calling Cowboy Builders four or more times to ask if they would like a donation receipt but he has not heard back from them.

Discussion turned to the plaque requested by the 10' dome donor, for his late son. Motion by John to proceed with getting an engraved plaque now, before we sell the equipment. Second by Rodger. Discussion about possible vendors followed. The Board agreed to have John contact a vendor and to proceed as long as the total amount is less than \$200.00, as that would trigger a vote of the general membership. Motion passed unanimously.

John sought to amend the Motion, to include a plaque for the donor of the 2.2 m dome, telescope, and other equipment. Patrick noted that some people prefer to remain anonymous so John was asked to reach out to the donor to see if he would like to be mentioned on a donor plaque at SPOC.

Separately, John noted that we have not determined prices for donated gear. Motion by John to use "general averages" from the Cloudy Nights website, based upon similar gear / sizes / condition, since he (John) has found very few exact matches for the donated equipment on Cloudy Nights, eBay, etc.

The Cloudy Nights site should enable us to reasonably determine the fair market value. Second by Rodger. Tom and Luke agreed. John mentioned the range of prices that he has obtained; these will be applied to inventory items at the end of the month. Motion passed unanimously.

Luke said we should reimburse Patrick for renewing SLAS's sponsorship of SPOC's Clear Sky Clock that is available to members on <http://www.slas.us>. John noted he has already received an invoice from Patrick and has a check ready for a countersignature, whereupon he'll deliver it to Patrick.

Tom had nothing to add at this time. Daland noted that Utah state guidance on reopening has changed from a color-coded approach. Rodger noted that we need to update our criteria for reopening SPOC, but since the facility would be closed in just over two weeks anyway, it is probably too late to make a difference this year. Motion by Luke that we leave the decision to the new Board after January 1st 2021. Second by Rodger. Passed unanimously.

Patrick asked for discussion about what to do about the annual Solstice party. It was noted that the Golden Corrals where we have held these in the past are still closed. Motion by Luke to cancel this year's party. Second by Rodger. Daland noted that no alternative site appears viable due to group size limits under the current conditions. Rodger believes that bringing people together is risky. Motion passed, with dissent from John, who felt that it might still be possible to hold an event if we can find a suitable venue, or wait until Utah provides further guidance in the next few weeks.

Ken Warner discussed the elections and voting. Results will be tallied at midnight next Tuesday evening and will be posted by very early Wednesday morning in time for the General Meeting later that day. Rodger is concerned that we won't be able to verify voting eligibility if we hold the vote open until during the General meeting. Luke thinks that we can use the list from Ken, plus write-ins at the meeting, and that people can private-chat with him on Zoom to provide their vote. Ken mentioned that there were only two paper ballots last year and he doesn't expect many this year.

Patrick asked about about the slas.us web certificate (this is different from domain registration, which was completed in June, for a period of five years). Ken said he has applied a new SSL certificate to the site, and will send the invoice to John tonight or tomorrow. He indicated it is under \$100.00.

John asked how things are going with the Astronomical League membership tracking directly on the slas.us website, instead of manually via the books. Ken said that there is a database field for the payment record, and he just needs to add a place on the web form to display it. He should have it running soon.

Patrick asked whether there was any further study done on getting concrete for a new building or pad at SPOC for the observatory building and dome SLAS picked up in September. Rodger said he has not pursued that yet.

There being no further business, Luke adjourned the meeting.

Meeting adjourned: 8:04 PM

**SALT LAKE ASTRONOMICAL SOCIETY GENERAL MEMBERSHIP MEETING
21 October 2020**

Special Note: Due to the COVID-19 outbreak the meeting was held virtually.

Board Members in Attendance: Luke Moses, Rodger Fry, Daland Speirs, Tom Sevcik, John Drabik

Attendance: About 22

Location: Online virtual meeting using Zoom

President Luke Moses called the meeting to order: 7:34 PM

Luke began by noting that election results will be announced at the end of the guest presentation, and that voting ended at midnight last night. He then introduced the guest speaker, SLAS Vice-President Rodger Fry.

Presentation: "Planetary Geology – Mars Data Seen Through the Eyes of a Geologist" by SLAS's Rodger Fry.

Rodger began by noting that next month's guest speaker will be Dr Stacy Palin from Weber State University. The topic is not yet determined.

Tonight's presentation is based on a similar presentation that Rodger gave about 10 years ago. He noted that many new discoveries have been made since then. He also introduced the topic of Uniformitarianism, i.e., the present is the key to understanding the past, or Mars, since the processes involved are often the same or very similar. So if we understand Earth geology and geological processes, we can understand other planets.

There have been more geologic studies about Mars than any other planet or moon in the solar system. Mars is in the "Goldilocks zone" but substantially different from Earth. For example, Mars' diameter is only about 53% of Earth's, and only has about 10% of Earth's mass. He explained why Earth & Mars escape velocities are similar despite these differences: Earth has more mass, but when a rocket is launched from Earth's surface it is much farther from the Earth's center.

Rodger then began to describe geologic similarities between Earth and Mars. This includes plate tectonic, magnetic fields (in the past for Mars – it is gone now), and including evidence on both planets of magnetic field changes in the past.

He next discussed volcanic activity, and noted that the longest geologic rift / canyon and the largest volcanos in the solar system are on Mars, but show similar characteristics to Hawaii island formation due to plate motion over active magma regions. He compared the largest volcano on Mars to the super-volcano under Yellowstone. He noted that Olympus Mons on Mars is even larger, and in fact is larger in size than the state of Arizona. However, there has been no volcanic activity on Mars in over 200 million years.

Next, he compared Earth/Mars atmospheres, and reminded attendees that humans need at least 19% atmospheric oxygen concentration in order to breathe and survive – Mars is inhabitable without support because the oxygen level is drastically below that level. Atmospheric pressure on Mars is less than 1% that of Earth's as well. Despite this, there is evidence of ancient oxidation of minerals in rocks, and compared Mars to sites within Utah.

Water was present on Mars in the past. In fact, Mars had massive running rivers, evidenced by river-borne sediments, and he showed fascinating pictures from NASA (color and black & white) that confirm that. He also discussed oddities such as "Mars blueberries", which are caused by various minerals under certain conditions of ground water and surface water with metal content. These "blueberries" are remarkably similar to those found in Utah that occur in similar mineral/water situations, such as in Grand Staircase.

Why is there no liquid water today? First, the average temperature on Mars is well below 0 degrees C, and atmospheric pressure is extremely low. So, frozen water "dissolves directly to gas" without first entering a liquid state.

Rodger then turned to the Curiosity Rover and its findings and five particular mission findings such as how the lack of a magnetic field results in very high radiation levels since there is no equivalent opportunity to Earth's Van Allen Belt. He noted that there are tempting signs of past life forms, but no firm evidence yet. Will evidence of ancient life be found? Finding fossils on Mars is a long shot at best, but he did show a photo of "Mars Macaroni" and rock formations bearing uncanny resemblance to fossilized reefs on Earth.

Rodger proceeded to his conclusions, including speculation on what caused Mars to change, and noting that study of Mars today is just the beginning.

A Q&A session followed. While few notes were taken during the Q&A, one interesting point that Rodger made was in response to a question about Earth magnetic field changes and a possible reversal (the Sun reversed its magnetic polarization about a week ago – a common occurrence. Earth magnetic reversals are very rare, only every few hundred thousand years or longer. But if it changes, it is unclear how long it will take for the field to be re-established (for the Sun, it happened almost instantly).

There is no good geologic or direct fossil evidence, but some prior reversals may or may not have resulted in mass extinctions, perhaps due to the loss of protection from the Van Allen belt, and a substantial increase in cosmic radiation that reached the Earth's surface, resulting in mutations or worse. If a reversal happens while civilization is in place, the effects are unclear. The lack of protection could last months, years, or decades – we don't have enough data to say, and it is uncertain what impact there might be.

Rodger concluded the session and turned the meeting back over to Luke.

Luke released the election results, which are as follows for 2021:

Aleta Cox – confirmed as the new President
Jamie Bradley – confirmed as the new vice President
John Drabik – re-elected to another term as Secretary/Treasurer
Tom Sevcik and Daland Speirs – re-elected as Board Members at Large

Luke also noted that this year's Solstice party is cancelled. He mentioned that two observatory domes and other equipment will be auctioned after an inventory is made near the end of October.

There being no further business, Luke adjourned the meeting.

Meeting adjourned: 8:43 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.

Contact Us slasinfo@slas.us

2020 SLAS Board of Directors

President	Luke Moses
Meetings	
Vice President	Rodger Fry
Publicity, PR and Web Content	
Secretary-Treasurer	John Drabik
Membership Dues & Renewals	
Board Member at Large	Tom Sevcik
SPOC Star Party Coordinator	
Board Member at Large	Daland Speirs
School & Special Star Parties	

Appointed Positions

Astronomical League Contact	Aleta Cox
Equipment Manager	Luke Moses
Historian	Patrick Wiggins
NASA Night Sky Ambassador	Ann House
Newsletter Editor	Patrick Wiggins
Observatory Director	Rodger Fry
Private Star Party Coordinator	Don Colton
Webmaster	Ken Warner
ZAP Grant Writer	Jim Keane

SPOC Advisory Committee

Chair through JAN 2021	Rodger Fry
Member through JAN 2021	Rodger Fry
Member through JAN 2021	Stan Eriksen
Member through DEC 2020	Larry Holmes
Member through FEB 2022	Leslie Fowler
Member through DEC 2020	Patrick Wiggins
Member through JAN 2021	Jim Keane
Member while SLAS President	Luke Moses
Member through FEB 2022	Tony Lau
Member as Obser. Dir. Emeritus	Bruce Grim
Member while Harmons Rep.	Vacant

SPOC Telescope Instruction Coordinators

Refractor	Marlene Egger
Ealing	Jim Keane
Grim	Rodger Fry
Clements	Leslie Fowler

Events Calendar

NOTICE: Owing to concerns over the COVID-19 pandemic, all in person SLAS events are currently on hold. The board will be sending out email SLAS Blasts advising the membership about any changes.

November 2020

11 Board Meeting may be held on line. Details to be announced via SLAS Blast emails.

18 General Meeting may be held on line. Details to be announced via SLAS Blast emails.

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 SLAS Vice-President. Members are encouraged to contribute content. Current editor is Patrick Wiggins, 4099wiggins@gmail.com.

This is the unofficial working draft for the next issue of Nova.

That being the case, please do not share it with non-SLAS members until it is officially issued.

Contributions and suggestions are welcome at: 4099wiggins@gmail.com