



November, 2018

Christmas Party



Don't miss the 2018 Christmas Party being held on Saturday, December 8th at 4:00 PM at the Observatory, New Berlin.

Pizza and soda will be served. Donations of \$5/person or \$8/family is appreciated. Please bring along a side dish or dessert to share.

Please join us with your family and let's celebrate the Winter Holidays and the New Year together.

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Winter Schedule

Traditionally, the Milwaukee Astronomical Society does not have Board/Membership Meetings in December, however, the Observatory is open for the First Wednesday meeting (on December 5th), on every Saturday Member's Night and when it is announced on the Google Group.

We will resume the regular schedule in January. The program of the next meeting will be announced in the December issue of this Newsletter.



Membership Renewal

Please renew your membership today if you have not already done so. There are several renewal methods you can choose from. If you prefer to do it online just follow this link: <http://www.milwaukeeastro.org/sendmsg/onlineRenew.asp>. The renewal form can also be printed out and send it back along with a check made payable to The Milwaukee Astronomical Society.

If you are wondering whether you need to renew your MAS membership, simply look for your name on this list: <http://www.milwaukeeastro.org/membership/membersRenewed.asp>. If your name is there, your membership is active through 2019.

Thank you for being a member of the Milwaukee Astronomical Society.

Astronomy Calendar Sale



The Club is selling the Astronomy Magazine's Wall Calendar to its members for a discounted price. The calendar contains beautiful astrophotos as well as tons of important observational and other general information. It is also perfect as a holiday gift.

We are selling it for \$10 (the retail price is \$12.99). The Calendars can be picked up at the Holiday Party on December 8th, or ask for alternative arrangement.

Observatory Report

The new staircase/platform that was purchased for use in the Z-dome for the much higher G-scope is now in place. Ideal Crane brought out one of their small rigs and was able to slip the staircase through the slit with the help of several members. The cost of the job came in well under the quote of \$600, the actual cost was \$462. Now we can continue work on the G-scope.

The garage at the rear of the Observatory received a good cleaning a couple of weeks ago. All the junk that had gathered in it was removed, either burned, if wood, or hauled away. All of the scrap steel from all over the Observatory and an old furnace was gathered together and removed by a person who recycles steel.

The slow-motion controls on the A-scope had completely failed with many of the electrical components needing replacement. Thanks goes out to Mike Wagner who took on the project of the repair of the scope. Due to his efforts the scope is once again fully functional.

On an experimental trial, the heat will be left at 40° F in the Quonset building this winter, the reason is to see if doing so will reduce the amount of condensation accumulating in the building. If the impact on the gas bill is too great, heating the building will be halted.

There were two private tours in the last month which brought in \$100 for both. Also, there are still old telescope parts being sold, \$85 was made last month on several different sales.

Respectfully Submitted,
Paul Borchardt, Observatory Director

Treasurer's Report

\$4,946.06	Starting Balance as of 10/17/2018
	Expenditures
\$19.38	PayPal fees
\$750.84	Observatory expenses
\$10.72	B-dome renovation
\$69.48	WE Energies
\$850.42	TOTAL Expenditures
	Revenue
\$19.45	Private donations
\$924.00	Membership dues
\$70.00	Public donations
\$1,013.45	TOTAL Revenue
\$5,109.09	Ending Balance as of 11/14/2018

Respectfully Submitted,
Sue Timlin, Treasurer

Meeting Minutes

The meeting was held on November 16th at the MAS Observatory, New Berlin and was called to order at 7:00PM by Tamas Kriska President.

Minutes, Treasurer's Report, and Observatory Director's Report submitted electronically ahead of the meeting were approved.

Membership Committee Report was electronically submitted by Jeff Kraehnke Committee Chair ahead of the meeting. Membership applications of Matt Phillips, Kaafat Kashlan & family, Ertan Ornek & family, and Jen Dexter were approved.

Old Business – Maintenance: Since all the maintenance was completed a motion was made and carried to move the \$2,643.85 leftover from Maintenance Fund to the General Fund. **G-scope:** The installation of the new setup is ongoing. **Stump and tree removal:** Paul will continue trying contacting stump removing companies. **Student membership:** The category still has to be updated on the website. **Work platform:** The new platform has been transported into the Z-dome. **Equipment shuffle:** Both LX mounts are working after capacitor replacement. The 12" LX 200 will stay in the Tangney Observatory, while the 10" LX 200 will replace the 8" Celestron in the Zit Observatory. A motion was made and carried to allocate \$300 to purchase equipment to install the Meade OTA to the CGEM mount, and allow it to accommodate a piggybacked DSLR camera. The old C14 scope and the Hyperstar will be sold. The Observatory Committee will submit a proposal including a detailed budget for purchasing a refractor to replace F-scope.

New Business – Fire Department inspection: Two code violations were found. The breaker box should have a metal cover, and the Exit signs should be replaced with permanently illuminated ones. **Snow plowing:** This winter the plowing will cost \$40/use.

Announcement –The next meeting will be on January 18st, 2019.

Respectfully Submitted
Agnes Keszler, Secretary

Membership Report

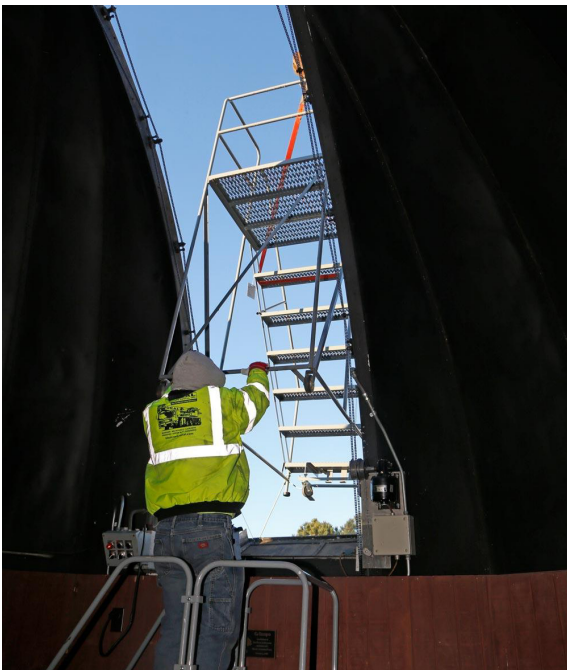
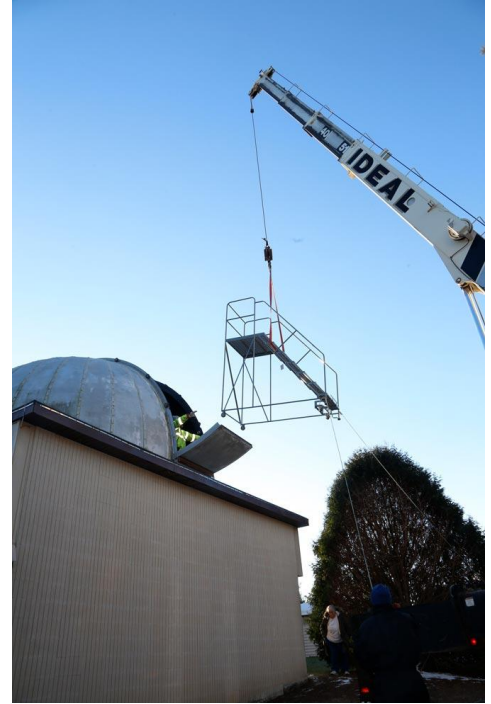
Since the last Report we received 4 membership renewals and 1 new membership application and would like to welcome Katie Schoenung & family. We have 182 active members.

Respectfully Submitted,
Jeff Kraehnke, Committee Chair

Observatory Maintenance

The new higher platform for the upgraded G-scope was lifted to the Z-dome by a crane through the slit. It was a tight fit but due to the professionalism of the crew it went pretty smoothly. The old platform was taken out and placed in front garage. It will be sold.

Mike Wagner successfully repaired the electronics of the slow motion control on the A-scope.



In the Astronomical News

Mars Could Have Enough Molecular Oxygen to Support Life

Modern-day Mars may be more hospitable to oxygen-breathing life than previously thought. A new study suggests that salty water at or near the surface of the red planet could contain enough dissolved O₂ to support oxygen-breathing microbes, and even more complex organisms such as sponges.

"Nobody thought of Mars as a place where aerobic respiration would work because there is so little oxygen in the atmosphere," said Vlada Stamenkovic an Earth and planetary scientist at the Jet Propulsion Laboratory who led the work. "What we're saying is it is possible that this planet that is so different from Earth could have given aerobic life a chance." As part of the report, Stamenkovic and his coauthors also identified which regions of Mars are most likely to contain brines with the greatest amounts of dissolved oxygen. This could help NASA and other space agencies plan where to send landers on future missions, they said.

On its surface, the planet Mars is not what you would consider a hospitable place for most Earthlings. Here on Earth, 21 percent of our atmosphere is made up of oxygen—thanks to the abundance of plants and other organisms that create oxygen as a byproduct of photosynthesis. The Martian atmosphere is made up of just 0.145 percent oxygen, according to data collected by the Mars rovers. With no plants to make O₂, the minuscule amount of oxygen on Mars is created when radiation from the sun interacts with CO₂ in the planet's atmosphere. In addition, Mars' atmosphere is 160 times thinner than Earth's atmosphere. In addition, the temperature at the surface frequently drops to minus 100, making it extremely difficult for liquid water to exist on the planet's surface.

The authors use computer models to show that water mixed with salts already present on Mars could be stable in a liquid state at or near the surface. Their next step was to determine how much dissolved oxygen they could absorb from the

atmosphere. "If there are brines on Mars, then the oxygen would have no choice but to infiltrate them," said Woody Fischer, a geobiologist at Caltech who worked on the study. "The oxygen would make it everywhere."

Their results showed that modern Mars could support liquid environments with enough dissolved O₂ to support oxygen-breathing microbes across the planet. They also found that the oxygen concentrations would be especially high in brines found at the polar regions, where temperatures are cooler. So far, this work has been done through computer modeling but the study looks robust.

The discovery of manganese oxides by NASA's Mars rover Curiosity was essential for this study.



"The best studies that rely on models for their results conduct a thorough review of the possible variables that can influence the model output," said Kathleen Mandt, a planetary biologist at the Johns Hopkins University Applied Physics Laboratory.

"This study does a good job at exploring a range of possible outcomes." However, it does not prove that there are indeed brines on Mars.

What we know is that theoretically there should be brines on Mars, and that they would be able to dissolve enough oxygen to be biologically useful.

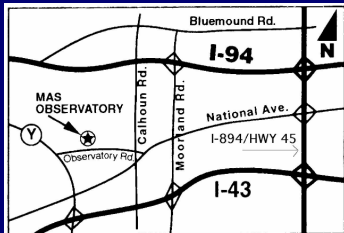
We hope that researchers here on Earth will do experiments to put oxygen-breathing microbes in the brines that could occur on Mars to find out what type of chemistry they do and whether they can thrive. The other step would be to send a lander to Mars that can look for brines from the shallow to the deep subsurface.

"Amazing work has been done by NASA to look for evidence of past habitable environments," Stamenkovic said. "I am a big promoter of looking for current habitable environments, and we can do that by starting to explore if there is liquid water on Mars." To that end, he is working to develop a new tool, no bigger than a shoe box, that could be used to find water on Mars and determine its salinity, no digging necessary. He calls it TH2OR.

from phys.org

Adopt a Telescope Program - Signup Sheet

	Adopter	Scope	Location
1	Sue Timlin/John Hammetter	18" F/4.5 Obsession	Wiesen Observatory
2	Steve Volp	12.5" F/7.4 Buckstaff	B Dome
3	Robert Burgess	12.5" F/9 Halbach	A Dome (Armfield)
4	Russ Blankenburg	18" F/4.5 Obsession	Albrecht Observatory
5	Jeff Kraehnke	14" F/7.4 G-scope	Z Dome
6	Lee Keith/Tom Kraus	12" F/10 LX200 EMC	Tangney Observatory
7	Herman Restrepo/Colin Boynton	8" F/11 Celestron EdgeHD	Ray Zit Observatory
8	Tamas Kriska	14" F/1.9 F-scope	Jim Toeller Observatory
9	Paul Borchardt	Solar scope	SkyShed POD



MAS Observatory

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www.milwaukeeastro.org

At Your Service

Officers / Staff

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John Hammetter	414-519-1958
Lee Keith	414-425-2331
Jeff Kraehnke	414-333-4656
Jim Schroeter	414-333-3679
Sue Timlin	414-460-4886
Steve Volp	414-751-8334

December Keyholders

12/01	Tom Schmidtkunz	414-352-1674
12/08	Sue Timlin	414-460-4886
12/15	Paul Borchardt	262-781-0169
12/22	Brian Ganiere	414-961-8745
12/29	Lee Keith	414-425-2331