Focal Point

June, 2014

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Next Public Night on June 20th

The third public observing night is scheduled for June 20th at 6:00PM. The topic will be **The Sun**. The evening will include a presentation about the topic by Celeste Keith and viewing thru the solar scope as well as through B-scope with solar filter. We will collect a parking donation of $5/vehicle. The event will be held in rain, shine, and starlight. The kind help of MAS members during the night is encouraged and highly appreciated.

2014 Public Observing Nights		
June 20, 18:00	The Sun	Celeste Keith
August 22, 19:30	The Wonders of Nebulae	Dennis Roscoe
September 12, 19:30	Ice Giants: Uranus and Neptune	Lee Keith
October 3, 19:30	The Moon	Brian Ganiere

The MAS Picnic

The Milwaukee Astronomical Society is organizing the Annual Picnic for MAS members and their guests. The event will be held on Saturday, **July 19th, 5:00pm** at the MAS Observatory in New Berlin. We are going to have a **potluck**. Please bring a dish to pass. Beverages and charcoal grills will be provided. We will do solar observing weather permitting. Please join us, and have fun! Bring along your family or friends.

The MAS Summer Schedule

There will be no General Membership Meeting in June, July, and August. The September Meeting will be announced in August issue of this newsletter. We will hold our annual **MAS Picnic on July 19th**, at 5:00 PM at the MAS Observatory.

The use of the Observatory is not affected by the summer schedule. Remember: Saturday nights are the keyholder nights! See you there.

Treasurer's Report

The MAS has spent $3638.09 on insurance, utility bills, magazine subscriptions, speaker fee, and well pump replacement.

The income from Membership fees, Public Night parking donations, and Observatory tours was $552.

Currently the checking account balance is at $2540.44. The Endowment Found is at $83963.90.

Respectfully Submitted,

Russell Chabot, Treasurer

Observatory Director's Report

We had a successful work party on April 19th clearing the parking area. Thanks to Scott, Tamas, Lee, Jill, & Frank. Scott fixed the outlet at the sign in the parking lot so we could have lighting during the open house nights.

We have "un" winterized the bathrooms. We have to look at the roofing issues with the Z Dome and the back garage.

We had tour of the observatory by scout group on April 22nd and a UWW student group on May 4th headed by Paul Borchardt.

Paul Borchardt has a proposal for modifying the A-Scope to accommodate a planetary camera.

On the **website** we instituted an online Membership Application Form. Right now we are working to allow online payments (including credit cards) through PayPal. It will be a fee of 2.2% + $0.30 per transaction. So, on a $46 membership, it is $1.31.

Respectfully Submitted,

Gene Hanson, Observatory Director

Meeting Minutes

Held on May 17th at the MAS Observatory, New Berlin. The meeting was called to order at 8:05 PM by President, Scott Jamieson.

Minutes of the April General Membership Meeting, were read by Secretary and approved.

Treasurer's Report was read by Treasurer, Russell Chabot. Copy attached.

Observatory Director's Report - was read by Gene Hanson Observatory Director. Copy attached.

Membership Committee - Family membership applications of Randal D. Harteau and Scott Ries were accepted by the Board of Directors.

There was no **Old Business** .

New Business - Summer projects: to make the 10" LX200 scope, that has a goto capability available for broader membership and public for visual observation; to purchase a planetary camera and convert the A-scope into a planetary imager; replace the chain lock with a combination lock to eliminate the need for yard key.

Election - Brian Ganiere on behalf of the Nomination Committee announced that 4 positions in the Board of Directors have expired. John Hammetter, Agnes Keszler, and Tamas Kriska are eligible and nominated for reelection. One nomination arrived from the floor: Dennis Roscoe. All nominations were accepted. The Members that were present elected John Hammetter, Agnes Keszler, Tamas Kriska, and Dennis Roscoe into the Board of Directors for 3 years.

The Board elected the following officers:

President - Scott Jamieson

Vice President - Brian Ganiere

Treasurer - Russell Chabot

Secretary - Agnes Keszler

The meeting was adjourned at 9:12 PM.

Respectfully Submitted,

Agnes Keszler, Secretary

MAS Event

The May 23dr Public Night

The second public observing night was held on May 23. Topic was the Red Planet: Mars. The evening started with a presentation about the topic by Sue Timlin. The Quonset hut was too small to accommodate the large crowd, so Sue had to repeat her presentation.

The sky was perfectly clear and the guests had a chance to see the Jupiter, Mars and Saturn thru different telescopes. Some deep sky objects were shown to those who stayed till complete darkness. We collected $223 parking donations from 45 cars. About 120 visitors attended the event.

Later that night the highly anticipated meteor show (possibly even a storm) was a big disappointment. It produced almost no meteors. The Earth was passing through for the first time a debris field left by Comet 209P/Linear and no one knew how rich or sparse it could be. Conclusion: sparse.

The following members were present: Shaunavon Blackmore, Paul Borchardt, Lee and Celeste Keith, Russell Chabot, Frank Evans. Brian Ganiere, Christopher Guest, Scott Jamieson, Frank Kenney, Agnes Keszler, Tamas Kriska, Kevin McCarthy, Jill Roberts, Lana Silke, Mike Smiley, and Sue Timlin. Thank you all!

MAS Attends the 2014 WOW

This year the annual Wisconsin Observers Weekend hosted by the Northeast Wisconsin Stargazers (NEWSTAR) astronomical club was held from Thursday, May 29 to Sunday, June 1 in the Hartman Creek State Park just west of Waupaca. The WOW reserved all five group -campsites so that the evening observing environment is white light free and as dark as possible. Despite the annoyingly large light domes of Waupaca from east and Stevens Point from northwest the sky was whole lot darker than what we have in New Berlin. Some constellations were hard to recognize in the sea of stars. Some brighter deep sky objects shined as headlights. The spiral arms of the Whirlpool galaxy could be resolved, as well as many details on the Milky Way.

Lana Silke, Lee Keith and Dan Yanko spent both Thursday and Friday nights observing, while Paul Borchardt, Agnes Keszler and Tamas Kriska joined them on Friday. We had two perfectly clear nights before the clouds moved in on Saturday evening. There were about 30participants with telescopes on each of the five campsites. Some families were new to WOW so Dan and Lee gave them a tour of the night sky.

On Saturday we had an ice cream social with drawing for many door prizes. Major prizes were a planetary camera, a small telescope and a set of Orion eyepieces. Dan won a $25 gift card to Fleet Farm, Lee won a similar value gift card to an astronomical supply website. Agnes won a Moon Map.

Everybody had a great time at 2014 Wisconsin Observers Weekend. Hopefully, next year the MAS will be represented by even higher number of members.

photos courtesy of Dan Yanko

In the Astronomical News

Drying out the Moon?

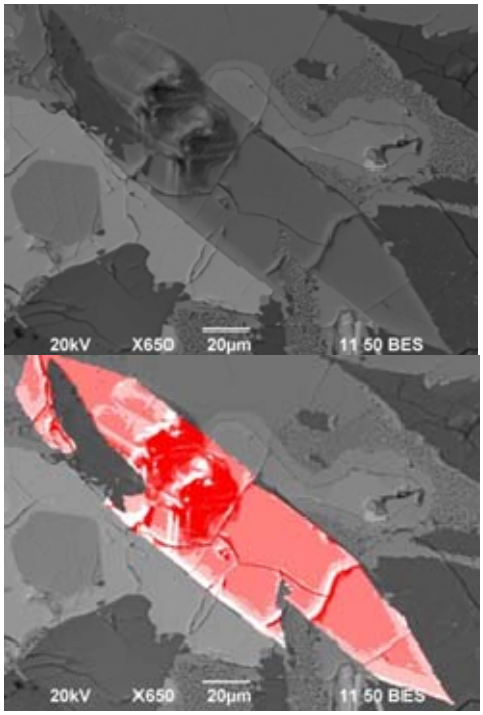
For decades, planetary scientists and geologists assumed that the Moon was about the driest and dustiest place in the solar system. Then around 2010, a spate of independent observations from spacecraft and elsewhere uncovered evidence of hydrogen in lunar rocks. Taking hydrogen as a proxy for water, the evidence suggested that ice might be buried at the lunar poles—and that indeed, the material from which the Moon formed might have been as wet as that which formed Earth.

The lunar mineral richest in hydrogen is apatite. Apatite is attractive as a tracer of volatile elements in many environments because it appears in many rocks brought back by the *Apollo* astronauts, ranging from the relatively young lunar maria (lava seas) to the ancient highlands. Thus, apatite was regarded as a good tracer of hydrogen. Indeed, apatite was the *only* hydrous mineral in lunar samples.

A new computational model of how apatite crystalizes, devised by Jeremy W. Boyce in the Department of Earth, Planetary, and Space Sciences at UC Los Angeles and four coauthors now indicates that apatite is a misleading indicator of water in the Moon.

Boyce's model simulates how apatite crystalizes out of cooling molten lunar magma. Modeling revealed that during fractional crystallization—in which newly formed crystals separate from the melt—apatite preferentially incorporates fluorine first.

"Early-forming apatite is so fluorine-rich that it vacuums all the fluorine out of the magma, followed by chlorine," explained Boyce. "Apatite forming later doesn't see fluorine or chlorine and becomes hydrogen-rich because it has no choice."



Photomicrograph of Apollo 11 lunar sample 10044,644 maps density of its polished surface: denser materials reflect more electrons and look lighter gray. Pinkscale version of image highlights density variations for a crystal of apatite. Such variations would be expected had the crystal formed through fractional crystallization—a process that ruins apatite's ability to record volatiles, including hydrogen. Credit: Jeremy Boyce, UCLA

The model also makes specific testable predictions. For example, it predicts that apatite crystals grown at different times in the same magma should have different abundances of fluorine, chlorine, and hydrogen—abundance differences observed almost ubiquitously in lunar rocks. It also suggests that if crystallization is quick or diffusion slow, the core of a crystal should be rich in fluorine while its rim is fluorine-poor and hydrogen rich—zoning indeed observed in basalts brought back from *Apollo* missions 11, 12, and 14.

Most importantly, the model demonstrates how apatite could form with orders of magnitude more hydrogen than expected from a melt actually having little water.

Does this finding about apatite mean the Moon is as arid as thought before about 2010? Likely, no. Olivine crystals, which were some of the earliest-formed crystals in lunar volcanic glasses, point to a wet lunar interior, as does spectroscopic analysis of plagioclase crystals and other observations. What the finding does mean is that apatite—the most widely used method for estimating water in lunar rocks cannot be trusted.

–Trudy E. Bell, M.A.

The University of California High-Performance AstroComputing Center (UC-HIPACC), based at the University of California, Santa Cruz, is a consortium of nine University of California campuses and three Department of Energy laboratories (Lawrence Berkeley Laboratory, Lawrence Livermore Laboratory, and Los Alamos National Laboratory). UC-HiPACC fosters collaborations among researchers at the various sites by sponsoring an annual advanced International Summer School on AstroComputing (ISSAC), offering travel and other grants, co-sponsoring conferences, and drawing attention to the world-class resources for computational astronomy within the University of California system. More information appears at http://hipacc.ucsc.edu .

Adopt a Telescope Program - Signup Sheet

	Adoptee	Scope	Location
1	Sue Timlin	18" F/4.5 Obsession	Wiesen Observatory
2	Neil Simmons	12.5" F/7.4 Buckstaff	B Dome
3	Russell Chabot	12.5" F/9 Halbach	A Dome (Armfield)
4	Dan Yanko	18" F/4.5 Obsession (Kyle Baron)	Albrecht Observatory
5	Tamas Kriska	25" F/3.4 Zemlock	Z Dome
6	Henry Gerner	12" LX 200	Tangney Observatory
7	Jeffrey Fillian	14" Z-Two scope	Ray Zit Observatory
8	Vacant	10" LX 200	Jim Toeller Observatory

At Your Service

Officers / Staff

President	Scott Jamieson	262-592-3049
Vice President	Brian Ganiere	414-961-8745
Treasurer	Russell Chabot	414-881-3822
Secretary	Agnes Keszler	414-581-7031
Observatory Director	Gene Hanson	262-354-0138
Asst. Observatory Director	Jill Roberts	414-587-9422
Newsletter Editor	Tamas Kriska	414-581-3623
Webmaster	Robert Burgess	920-559-7472

Board of Directors

Robert Burgess	920-559-7472
Russell Chabot	414-881-3822
John Hammetter	414-519-1958
Gene Hanson	262-354-0138
Lee Keith	414-425-2331
Agnes Keszler	414-581-7031
Tamas Kriska	414-581-3623
Dennis Roscoe	608-206-0909
Michael Smiley	262-825-3981
Sue Timlin	414-460-4886
Dan Yanko	262-255-3482

June/July Key Holders

6/21	Tom Schmidtkunz	414-352-1674
6/28	Mike Smiley	262-825-3981
7/5	Russell Chabot	414-881-3822
7/12	Brian Ganiere	414-961-8745
7/19	Paul Borchardt	262-781-0169
7/26	Gene Hanson	262-354-0138

MAS Observatory

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