MILWAUKEE ASTRONOMICAL SOCIETY

FOCAL POINT

January, 2017

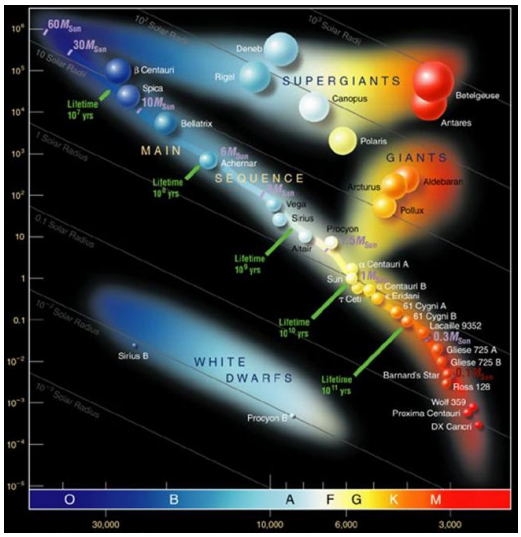
Inside this

Next Meeting on February 8th

The Milwaukee Astronomical Society will hold its next meeting on **Wednesday, February 8th, from 7 PM till 8:45 PM** in the New Berlin Public Library's Heritage Room. Address: 15105 W Library Lane, New Berlin, WI 53151.

According to the new format it is going to be a combined Board and Membership meeting, where during the first hour organizational and Observatory related issues will be discussed. During the second hour we will have a short presentation on how to understand the life cycle of the stars through the Hertzsprung-Russell diagram.

As always, the Observatory is open on Saturday nights, and also when it is posted on the Google Group.



Public Nights of 2017

This year the Open House Committee and the Board of Directors decided to make some changes in our regular Public Night schedule. First we are going to skip April, mainly because of the ongoing Quonset remodeling project. The other reason is the chilly weather of the early spring, which traditionally does not draw big crowd. The program will start in May, followed by showing the Sun in June. We will skip July, hold two events in both August and September, and will close the season in October. The starting times will be adjusted to the sunset, and a closing time will also be set so that our guests would know a time frame when the Observatory is open. Based on the last year success each telescope will be assigned to a single object to show. Among those who visit all scopes and collect stickers at each station prizes will be raffled out.

The complete schedule will be published in the next issue of this Newsletter.

Calendar Fundraiser

There is still one Astronomy Magazine's 2017 Deep Space Mysteries wall calendar available. As part of the fundraiser effort we sell this calendar for $10 while its retail price starts at $12.50. More calendars will be available for pickup for those members who preordered them in December.

Observatory Report

Work continues nicely on the Quonset Hut. After a bit of a lull due to the holidays we are back to having nice turnouts on the Saturday work parties which are being lead by Tamas and Jeff. Lots have been done, but there still is a long way to go.

The selling of used equipment continues at a good pace with over $600 more of equipment being sold since my last report. We expect that this source of revenue will continue to add to the Quonset Fund for several upcoming months. The switch for opening and closing the slit on the B-dome needs to be replaced. I put out a notice on the Google group warning the members not to use the B-Scope. The slit on the Z-dome is still under repair, with some problems appearing while we are working on the repair. Due to bad weather and the holidays there has been little if any observing or imaging happening at the Observatory lately. Hopefully there will be some clear nights ahead to get members out and enjoying use of the equipment.

Respectfully Submitted,
Paul Borchardt, Observatory Director

Treasurer's Report

$5,232.35	***Starting Balance as of 11/07/2016***
	Expenditures
$59.52	Christmas Party
$12.43.00	Garage door
$42.44	PayPal fees
$160.00	RE Taxes
$93.87	Z-dome chain
$187.81	WE Energies
$131.23	Solar Observatory
$4,679.95	Quonset project
$36.00	Water/sewer
$43.87	Salt
$5,448.14	TOTAL Expenditures
	Revenue
$800.00	Donations
$1,438.00	Equipment sales
$1,820.00	Membership dues
$10,000.00	Protective withdrawal
$320.00	Key Deposit
$14,072.00	TOTAL Revenue
$13,856.21	***Ending Balance as of 1/9/2017***

Respectfully Submitted,
Sue Timlin, Treasurer

Meeting Minutes

Held on January 11th at the New Berlin Public Library. The meeting was called to order at 7:03 PM by President, Tamas Kriska.

Minutes, **Treasurer's Report**, **Observatory Director's Report**, and the **Membership Report** were submitted electronically.

Old Business - Solar Eclipse: The closest spot to view totality is in southern Illinois. The Club may reserve a group camp site for the August 20th night/$50.

Electric service upgrade: The A dome was rewired, and new lights were put on. We received a quote of $1980 to replace the panel to be ready to upgrade from 100A to 200A. After an inspection, WE will install a new underground line.

Quonset Hut remodeling: The remodeling is progressing. We anticipate to finish the wall panel installation in January, put the accent panels in February, remodel the A dome and bathrooms in March, and do painting and floor installation in April.

New Business - The water pump switch is broken, Paul will order a new one.

Sue Timlin proposed a schedule for the 2017 Public Nights. The Board decided to skip April because of the Quonset project, and run two Open Houses in September or October instead. The program will be finalized next month. When the program is fixed new MAS business cards will be ordered to advertise our Public Nights.

The Board approved $300 to replace the disappeared Skyris 618 color camera.

Program - Jeff Kraehnke gave a presentation about how to get prepared for observing. The talk included proposing reliable weather channels, and a software that help to match objects with different imaging equipment.

The meeting was adjourned at 8:43PM.

Respectfully Submitted,
Agnes Keszler, Secretary

Membership Report

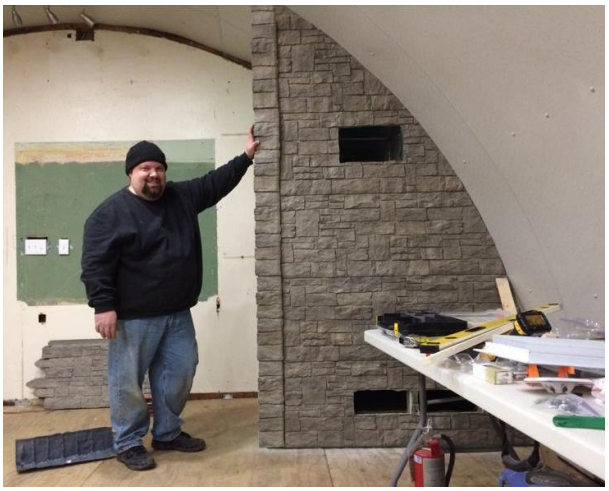
Since the last Report we received three renewals and one new membership applications and would like to welcome Denise Kunz. 26 members did not renewed their memberships for 2017. We now have 117 active members.

Respectfully Submitted,
Jeff Kraehnke, Committee Chair

Observatory News

The Quonset Hut Remodeling

The work on the Quonset Hut was going on every weekend including Christmas and New Year's Eve. We made an enormous progress. Two third of wall panels were already installed with all the lights, fans, and speakers. The floor of the A-building was covered with a new layer of plywood to level it with the Quonset. The back door and the one separating the A-building and Quonset were installed. We have even started the installation of the decorative cover for the accent walls around the furnace room. For the next two weekends we hope for a big turnout since the installation of 12 ft long wall panels require lots of hands. All the help will be greatly appreciated.



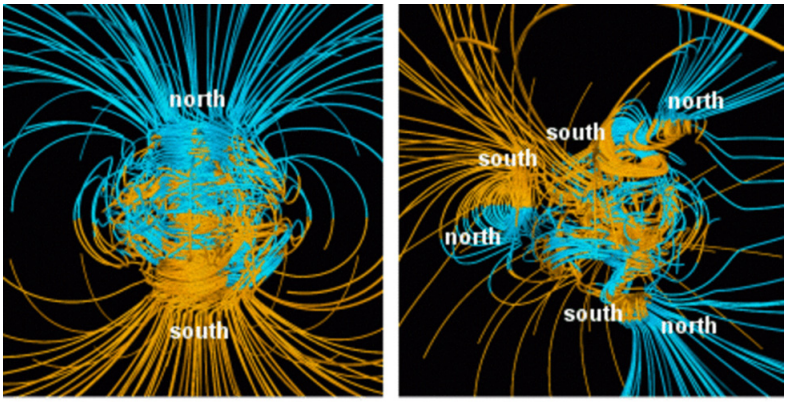
In the Astronomical News

Why Earth's Magnetic Poles Could be about to Swap Places ?

The Earth's magnetic field surrounds our planet like an invisible force field – protecting life from harmful solar radiation by deflecting charged particles away. Far from being constant, this field is continuously changing. Indeed, our planet's history includes at least several hundred global magnetic reversals, where north and south magnetic poles swap places. So when's the next one happening and how will it affect life on Earth?

During a reversal the magnetic field won't be zero, but will assume a weaker and more complex form. It may fall to 10% of the present-day strength and have magnetic poles at the equator or even the simultaneous existence of multiple "north" and "south" magnetic poles.

Geomagnetic reversals occur a few times every million years on average. However, the interval between reversals is very irregular and can range up to tens of millions of years.



Magnetic reversal. Credit: NASA

There can also be temporary and incomplete reversals, known as events and excursions, in which the magnetic poles move away from the geographic poles – perhaps even crossing the equator – before returning back to their original locations. The last full reversal, the Brunhes-Matuyama, occurred around 780,000 years ago. A temporary reversal, the Laschamp event, occurred around 41,000 years ago. It lasted less than 1,000 years with the actual change of polarity lasting around 250 years.

The alteration in the magnetic field during a reversal will weaken its shielding effect, allowing heightened levels of radiation on and above the Earth's surface. Were this to happen today, the increase in charged particles reaching the Earth would result in increased risks for satellites, aviation, and ground-based electrical infrastructure. Geomagnetic storms, driven by the interaction of anomalously large eruptions of solar energy with our magnetic field, give us a foretaste of what we can expect with a weakened magnetic shield.

The simple fact that we are "overdue" for a full reversal and the fact that the Earth's field is currently decreasing at a rate of 5% per century, has led to suggestions that the field may reverse within the next 2,000 years. But pinning down an exact date – at least for now – will be difficult.

The Earth's magnetic field is generated within the liquid core of our planet, by the slow churning of molten iron. Like the atmosphere and oceans, the way in which it moves is governed by the laws of physics. We should therefore be able to predict the "weather of the core" by tracking this movement, just like we can predict real weather by looking at the atmosphere and ocean. A reversal can then be likened to a particular type of storm in the core, where the dynamics – and magnetic field – go haywire (at least for a short while), before settling down again.

The difficulties of predicting the weather beyond a few days are widely known, despite us living within and directly observing the atmosphere. Yet predicting the Earth's core is a far more difficult prospect, principally because it is buried beneath 3,000km of rock such that our observations are scant and indirect. However, we are not completely blind: we know the major composition of the material inside the core and that it is liquid. A global network of ground-based observatories and orbiting satellites also measure how the magnetic field is changing, which gives us insight into how the liquid core is moving.

The recent discovery of a jet-stream within the core highlights our evolving ingenuity and increasing ability to measure and infer the dynamics of the core. Coupled with numerical simulations and laboratory experiments to study the fluid dynamics of the planet's interior, our understanding is developing at a rapid rate. The prospect of being able to forecast the Earth's core is perhaps not too far out of reach.

by The Conversation

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	vacant	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/Matt Mattioli	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

At Your Service

Officers / Staff

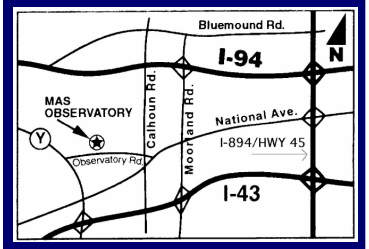
President	Tamas Kriska	414-581-3623
Vice President	Sue Timlin	414-460-4886
Treasurer	Sue Timlin	414-460-4886
Secretary	Agnes Keszler	414-581-7031
Observatory Director	Paul Borchardt	262-781-0169
Asst. Observatory Director	Jeff Kraehnke	414-333-4656
Newsletter Editor	Tamas Kriska	414-581-3623
Webmaster	Gene Hanson	262-269-9576

Board of Directors

Paul Borchardt	262-781-0169
Robert Burgess	920-559-7472
Clark Brizendine	414-305-2605
Steve Volp	414-751-8334
John Hammetter	414-519-1958
Lee Keith	414-425-2331
Frank Kenney	414-510-3507
Jeff Kraehnke	414-333-4656
Agnes Keszler	414-581-7031
Tamas Kriska	414-581-3623
Sue Timlin	414-460-4886

February/March Keyholders

2/4	Jeff Kraehnke	414-333-4656
2/11	Brian Ganiere	414-961-8745
2/18	Henry Gerner	414-774-9194
2/25	Tamas Kriska	414-581-3623
3/4	Lee Keith	414-425-2331
3/11	Frank Kenney	414-510-3507
3/18	Jeff Kraehnke	414-333-4656



MAS Observatory

18850 Observatory Rd
New Berlin, WI 53146

www.milwaukeeastro.org