MILWAUKEE ASTRONOMICAL SOCIETY

FOCAL POINT

August, 2017

Next Meeting on September 11th

The Milwaukee Astronomical Society will hold its next meeting on **Monday, September 11th, from 7 PM at the Observatory.** This is going to be a combined Board/Membership Meeting.

During the first hour organizational and Observatory related issues will be discussed. During the second hour members will share their experiences of the solar eclipse of August 21st. The single shot image to the left was taken by Derek Rickert at St. Francois State Park, MO. Find more pictures of the eclipse on pages 3-4.

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

Inside this

Public Nights

We hosted two Public Nights in August, both with great success. The topic on August 11th was the peaking Perseid Meteor shower, but the speaker of the night Todd Stair has also thrown a couple slides on the solar eclipse, which was around the corner.

The August 25th Open House was dedicated to Saturn, and the presenter was Gene Hanson. Maybe due to the closeness of the solar eclipse, or just the perfect clear sky, or combination of both, we encountered a huge crowd. The seating capacity of the new lecture hall was increased to 110, but even that was not enough. Children were sitting on the carpet and people were standing in the A-building entryway. When the talk was over, our guests were shown many objects. The Milky Way candy bar reward encouraged the kids to visit every station to collect all the six stickers. The last guest left the Hill well after 10 PM.

We have three more Public Nights: on September 22th about Deep Sky Objects, September 29th about the Moon, and finally October 13th about Pluto. All three events start at 7:00 PM. MAS members who want to help either with preparing and manning telescopes or handling the parking lot are asked to arrive at least half an hour earlier. As always, any help is appreciated.

Observatory Report

B-dome's slit is working properly now that the cables have been replaced and new heavy-duty springs have been installed replacing the old springs which seem to have become ineffective. Due to the leaking rain water, the solar scope is back under a tarp. Tamas has researched what is the best caulk for sealing the seams and has purchased it. He also contacted SkyShed and they are sending us a new rubber seal. Work on the dome is under way. A-dome belt broke because the dome fell off the track. A new belt is in place with a spare on hand. The dome has been lifted back on to the rollers and it looks like the dome has become out of round and does not track well any more. Since A-scope is used for planet observing the dome should have limit switches installed to keep the dome from moving passed dead east or west since the problem happens when the dome is pointing north. The Astro Physics mount on the G-scope is back from having repairs and Dec. The scope is completely installed again and testing is now going on to see if the scope is now working optimally. I upgraded the guide scope on the F-scope by donating an old 400mm telephoto lens I owned. This change has improved the quality of the star images when I compare new images taken to the ones of the same objects taken before the changeover.

Respectfully Submitted,
Paul Borchardt, Observatory Director

Treasurer's Report

$3,077.06	***Starting Balance as of 7/7/2017***
	Expenditures
$11.19	PayPal fees
$995.00	Repair G-scope mount
$68.33	Picnic supplies
$36.00	Water/Sewer
$58.29	WE Energies
$1,168.81	TOTAL Expenditures
	Revenue
$995.00	Donations (Hanson)
$32.80	Donation (eclipse glass)
$405.00	Membership dues
$120.00	Public Night
$1,552.80	TOTAL Revenue
$3,461.05	***Ending Balance as of 8/14/2017***

Respectfully Submitted,
Sue Timlin, Treasurer

Meeting Minutes

The meeting was held on August14th at the MAS Observatory, New Berlin and was called to order at 7:01PM by Tamas Kriska President.
Minutes of the July Board Meeting electronically submitted by Agnes Keszler Secretary ahead the meeting were approved.
Treasurer's Report submitted by Sue Timlin ahead of the meeting was approved.
Observatory Director's Report electronically submitted by Paul Borchardt Observatory Director ahead of the meeting was approved.
Membership Committee Report was submitted by Jeff Kraehnke Committee Chair ahead the meeting. Membership application of Jamie Jackson, Xiaoshu Liu, Colin Boynton, Ryan Tischer & family, Clare Bingham-Tyson & family, Kayla Gerick & family, Scott Erke & family were approved.
Old Business – *Solar Eclipse*: Gene gave his first talk in the Sussex Library. Everybody is ready to go to his/her destination. The experiences will be discussed on the next Meeting. *MAS campout*: Although the weather was not great the campout was successful thanks to our very hospitable hosts Tom and Tony Maxwell. The event will be repeated on the September 15-17 weekend, and from then in every September. Due to a schedule conflict the 2017 September Board Meeting has been moved to Monday the 11th. *Key holder duties*: Paul drafted a letter to send out to all Keyholders, which the Board discussed and finalized. The letter will be sent out in August. The Keyholders will have a 6 month period to adapt to the requirements. *Sky Network*: We joined the network. The first tool kit has arrived, and Gene has already used it for his lecture.
New Business – *Program Chair:* A volunteer is wanted to find and book presenters for General Meetings. *Computer upgrade*: Jason Doyle donated 3 workstations. Two of them were installed to run F and G scopes. The third one will be dedicated to image processing. A 24" HD monitor is needed.

Respectfully Submitted
Agnes Keszler, Secretary

Membership Report

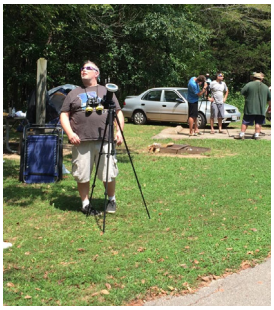
Since the last Report we received three new membership applications and would like to welcome Jeff Seivert, Andrea Jehly, and Judson & Sharon Chubbuck. We now have 155 active members.

Respectfully Submitted,
Jeff Kraehnke, Committee Chair

Astronomical Event

Total Solar Eclipse

The great American eclipse crossed the whole country from west to east. This was the first total eclipse since 1979 if we don't count the 1991 one that touched Hawaii. Unfortunately, Wisconsin was out of the path of totality, so many of us have arranged a trip well ahead of the event. The Club organized a campout to the St. Francois State park, MO. The weather forecast was unfavorable, even until the very last minutes we could not be sure that we will see the event. We were lucky, even the few patches of clouds moved away as the totality approached. The sky became crystal clear. The equipment we set up drew the attention of fellow campers, and we were showing them the eclipsing sun with sun spots through a scope equipped with a filter freshly prepared from solar glasses. All together 19 MAS members stayed or visited the campground to image or just observe the event.



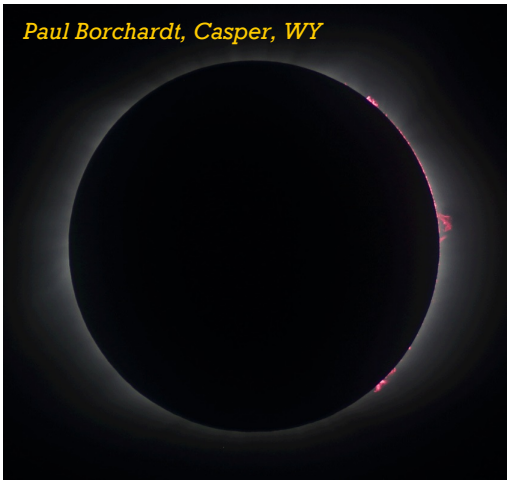
Diamond ring: Tamas Kriska

Baily's beads: Jeff Kraehnke

Corona: Jason Doyle

Astronomical Event

Although, the "official" MAS campout was in Missouri members have chosen to travel to a variety of locations along the path of totality. According to reports everybody succeeded in choosing a good place and were able to see and image this truly spectacular event.



Observatory News

MAS Picnic

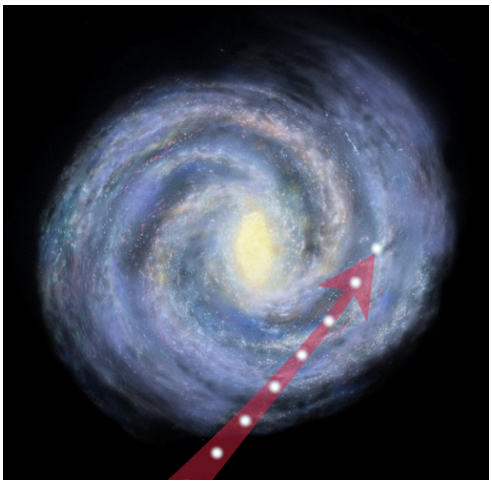
Our Annual Picnic was held on the last Saturday of July. The sunny weather attracted many members with their families. Since our membership is steadily growing, the picnic gave an excellent opportunity to get to know each other a little bit more. Everybody enjoyed a wonderful afternoon with conversations and delicious food that was brought to share.

In the Astronomical News

Bizarre Dead Star May Be a Remnant of a Mini Stellar Explosion

A strange dead star may be a remnant of what was essentially a miniature supernova, a new study finds. The properties of this bizarre star may help shed light on how the unusual supernova that created it formed, the study's researchers said. The scientists investigated white dwarfs, which are superdense, Earth-size cores of dead stars that are left behind after stars have exhausted their fuel and shed their outer layers.

"These objects are very faint — much fainter than ordinary stars — but they are numerous in our own corner of the Milky Way," said study lead author Stephane Vennes, an astrophysicist at the Astronomical Institute of the Czech Academy of Sciences in Ondrejov, Czech Republic. Most sunlike stars will become white dwarfs one day. Indeed, "our own sun will finish its own life as an unremarkable white dwarf," Vennes told. He and his colleagues focused on an unusual white dwarf named LP 40-365, which is located about 1,000 light-years from Earth. This object's mass is about 14 percent of the sun's mass, and its diameter is about 8 percent of the sun's. Unusually, it was zipping through space at about 1.23 million mph (1.98 million km/h). "It was immediately clear that this was no ordinary star," Vennes said. "It's velocity is so high that it is on its way to leave permanently the Milky Way."



The object LP40-365 travels to its present-day location about 1,000 light-years from the sun. Credit: Russell Kightley

To learn more about the white dwarf, the researchers examined it over the course of two years using the Kitt Peak National Observatory in Arizona, the William Herschel Telescope in Spain's Canary Islands, the Hiltner Telescope in Arizona and the Gemini North Telescope in Hawaii. They discovered that not only the speed, but also the composition, of this white dwarf was strange. Unlike many white dwarfs, LP 40-365's atmosphere lacks any hydrogen and helium, the two most common elements in the universe. Instead, its visible atmosphere is composed almost exclusively of oxygen and neon gas, sprinkled with traces of sodium and magnesium.

Now, Vennes and his colleagues suggest that the origin of this bizarre white dwarf might lie in a miniature version of a supernova. Supernovas are visible all the way to the edge of the universe. The first of the two main flavors, Type Ia supernovas, occur after a white dwarf is completely destroyed after siphoning too much fuel from a companion star. In contrast, Type II supernovas happen after the core of a star about 10 to 100 times as massive as the sun runs out of fuel and collapses into an extraordinarily dense lump in a fraction of a second, blasting luminous radiation outward. About 15 years ago, scientists began noticing that a few supernovas appeared to be similar to regular Type Ia supernovas, but were distinctly fainter. Some of these so-called Type Iax supernovas glowed with only 1 percent of the peak luminosity of Type Ia supernovas. Previous research suggested that Type Iax outbursts might happen when a white dwarf accumulates fuel from a donor star but the core of the white dwarf fails to completely burn during the supernova. As a result, a giant piece of shrapnel gets kicked into space — a hypervelocity star. The researchers said LP 40-365 was exactly what one might expect as the leftovers from a Type Iax supernova. Based on the white dwarf's size and current temperature, they estimated that the explosion happened between 5 million and 50 million years ago. Based on its speed and trajectory, it likely made its closest approach to the sun about 500,000 years ago, coming within about 300 light-years from Earth.

The new findings may shed light on why a Type Iax supernova occurs. The atmospheric composition of LP 40-365 favors a model where the white dwarf behind such an explosion has a mantle layer rich in oxygen and neon that influences the way the dead star burned, resulting in a delayed detonation that "leaves a minute amount of core material unburnt," Vennes said.

The scientists expect that more high-speed remnants of Type Iax supernovas will be found in the future. "We believe this object is only the first among many that remain to be discovered," Vennes said. "The ESA mission Gaia should deliver a large number of such candidates."

by Charles Q. Choi, Space.com

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/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

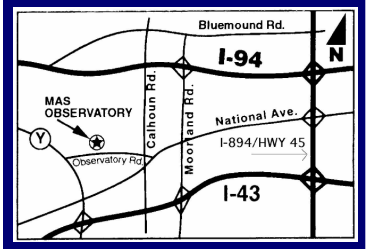
President	Tamas Kriska	414-581-3623
Vice President	Sue Timlin	414-460-4886
Treasurer	Sue Timlin	414-460-4886
Secretary	Agnes Keszler	414-581-7031
Observatory Director	Paul Borchardt	262-781-0169
Asst. Observatory Director	Jeff Kraehnke	414-333-4656
Newsletter Editor	Tamas Kriska	414-581-3623
Webmaster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

Board of Directors

Scott Berg	262-893-7268
Russ Blankenburg	262-938-0752
Clark Brizendine	414-305-2605
Robert Burgess	920-559-7472
Jason Doyle	414-678-9110
John Hammetter	414-519-1958
Lee Keith	414-425-2331
Frank Kenney	414-510-3507
Jeff Kraehnke	414-333-4656
Sue Timlin	414-460-4886
Steve Volp	414-751-8334

September Keyholders

9/2	Scott Berg	262-893-7268
9/9	Paul Borchardt	262-781-0169
9/16	Henry Gerner	414-774-9194
9/23	Lee Keith	414-425-2331
9/30	Frank Kenney	414-510-3507



MAS Observatory

18850 Observatory Rd
New Berlin, WI 53146

www.milwaukeeastro.org