



August, 2019

September Meetings

In September we will resume our usual schedule of monthly meeting on third Friday of each month. The next MAS meeting will be held on **Friday, September 20th**, from 7 PM at the Observatory. This is going to be a combined Board/Membership meeting. The first hour is the official Board meeting when organizational and Observatory related issues will be discussed. Every MAS member is welcome to attend. During the second hour we will watch an entertaining/educational video on an astronomy subject followed by a discussion.

We also continue the series of monthly First Wednesday How To Meetings. The next meeting will take place on September 4th at 7:30. Any telescope/astronomy/Observatory related topics can be discussed. Just show up and ask your question.

In August we successfully launched a PixInsight Focus Group, which will hold its meetings on the second Wednesday of each month starting at 7 PM for those who are interested in learning and/or sharing image processing experiences with others. September's meeting is scheduled for September 11th.



The first PixInsight Focus Group Meeting

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

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Public Nights

On Friday, August 23rd we had a very successful Public Night. Around 150 guests visited the Observatory. The theme of the night was: The Galactic ZOO: Denizens of the Night Sky by Randy Culp. Randy presented the talk twice to give everyone a chance to learn about variety of deep sky objects. After the presentation our guests were able to observe planets and stars through various telescopes.

The upcoming Public Night on September 6th will be about **Our Moon** by Russ Blankenburg. Of course it will be more than just our own Moon. Moons of other planets including Uranus and Neptune will be on display.



Any help from members willing to man a telescope, give a tour of the Observatory, or direct the traffic in the parking lot is highly appreciated!

Observatory Report

This summer's list of repairs and renovations has been moving forward. The Ray Zit Observatory is finished and looking great. Now work has begun on the parking lot sign. Leaking sink faucets in the restrooms are replaced and the floor in Z-Dome has been finished.

The SBIG STT-8300 camera on the G-Scope has been completely overhauled, the total cost was \$400. It will be back in operation shortly.

Last week a bracket that holds slit moving mechanism on the B-Dome broke off at a weld making it impossible to open and close the slit. On Saturday a new bracket was made and installed with the help of Clark Brizendine and his welding skills. The dome is now back in operation, thank you Clark!

Respectfully Submitted,
Paul Borchardt, Observatory Director

Treasurer's Report

\$6,588.27	Starting Balance as of 07/05/2019
	Expenditures
\$8.81	PayPal fees
-\$12.00	Overpayment refund
\$47.00	Observatory expenses
\$100.18	WE Energies
\$36.00	Water/Sewer
\$179.99	TOTAL Expenditures
	Revenue
\$12.59	Private donations
\$468.00	Membership dues
\$50.00	Public donations
\$530.59	TOTAL Revenue
\$6,938.87	Ending Balance as of 08/11/2019

Respectfully Submitted,
Sue Timlin, Treasurer

Membership Report

Since the last Report we received 11 new applications. We welcome John Manning & Family, Keith Weber & Family, Dennis Wentland & Family, Ann & Joe Colwell, Kim Peck & Family, Cyrina Talbott & Family, Michael Zibell & Family, Dave & Mary Gorski, Kent & Lisa Primrose, John Adali, and Kevin Christiano & Family. The total number of active members is 172.

Respectfully Submitted,
Jeff Kraehnke, Committee Chair

Meeting Minutes

The meeting was held on August 12th at the MAS Observatory, New Berlin and was called to order at 7:03PM by Tamas Kriska President.

Minutes, Treasurer's Report and Observatory Director's Report electronically submitted ahead of the meeting were approved. **Membership Committee Report** was electronically submitted ahead of the meeting. Membership applications of Ken and Korie Christensen & Family, John Manning & Family, Keith Weber & Family, Roger Rangarajan & Family, Dennis Roscoe, Dennis Wentland & Family were approved.

Old Business – The 8" Celestron EdgeHD: Steve Volp gave an update of the project. He donated a 25" bag and an extension cord, and compiled a list of essential accessories. A motion was made and carried to allocate \$250 to purchase the accessories. **Maintenance:** The maintenance of Z2 shed, painting Z-dome, fixing the doors on B-and Z-domes and C-shed has been completed with expenditures exceeding the budget by about \$200. **Talk request:** Sue will give the requested talk in Cedarburg Public Library this week. **SBIG STT-833 camera:** The camera has been overhauled (for \$400 with shipping), returned, and mounted on G-scope. **Observatory sign:** The old frame was impossible to salvage. A motion was made and carried to allocate \$600 to order a 4x8 feet custom made flat printed sign. The Board approved the layout of the sign.

New Business – Air condition: The AC does not work at full capacity. In addition, on extreme hot Open House nights even if working properly, it is not enough to keep up with the heat load the Quonset audience creates. Mike Wagner volunteered to investigate these issues further and explore possible solutions. **Honorary Member:** Gene suggested electing Jim Fanson a Honorary Member of the MAS based on his past longtime membership and his career achievement in development of astronomical research. Motion was made and carried. **Keyholder:** Paul suggested electing Arun Hegde a keyholder. His sponsor will be Jeff Kraehnke. Motion was made and carried.

Announcement – A MAS Campout will be organized on the weekend of September 26-29 at White Mound County Park, weather permitting. Campsites will not be reserved by the Club. The next meeting will be on Friday, September 20st, 2019.

Respectfully Submitted
Agnes Keszler, Secretary

Observatory News

Summer Maintenance Projects

The bracket holding part of the mechanism that opens and closes B-dome broke. Once again Clark and his excellent welding skills saved the day when he attached a new bracket prepared by Paul.



The door of the C-shed has been fixed by re-attaching/reinforcing the hinges and removing some interfering soil buildup. The AC in the Quonset was underperforming. Turned out the evaporator was totally blocked with foil faced fiber glass insulation that has come loose from the AC plenum. The blocked leaf of the evaporator was frosting up chilling the thermostatic expansion valve and turning off the Puron (R410a) flow killing the system. The insulation came out easily and the AC unit is now working as designed with a capacity of about 2 tons or 24,000 BTU's.



Summer Picnic

The summer was celebrated with our annual potluck picnic organized on Saturday, August 10th at the Observatory. The weather was just perfect, not too hot and shady (although this, unfortunately, impeded solar observation—well, nothing is perfect).

We had a usual picnic turnout of 25 MAS members who enjoyed the delicious food, and of course, each others company.



Luverne Armfield's Daughter visits the Observatory

I received the following message from our website:

Subject: A-Dome

From: Connie Armfield Stenhjem

"I am the daughter of Luverne Armfield and would like to visit the MAS grounds and the A Dome tomorrow. We are passing through on our way to MPLS. Would this be a problem?"

The name was not familiar to me. I knew Luverne Armfield had a daughter named Laurel Jean, but knew of no other children. But with her name a quick internet search revealed a little insight into Armfield's life after he left Milwaukee and the MAS behind. So I was very happy to accommodate her and was anxious to see if I could learn more information about her father. Little did I realize I'd be supplying most of the information.

For those who aren't aware, the "A" in both the A-Dome and A-Scope stand for Armfield. Luverne Armfield is considered the founder of the Milwaukee Astronomical Society.

Our club was formed in September of 1932 when this announcement in the Milwaukee Journal. As a result of that meeting at Armfield's house, the MAS was formed and immediately Armfield's tiny backyard in West Allis

Amateur Star Gazers Plan an Organization

Amateur students of heavenly bodies who are interested in organizing an amateur astronomical association have been asked to attend an organization meeting at 8 p. m. Wednesday at the home of L. E. Armfield, 2046 S. Fifty-ninth st., West Allis.

became the de facto MAS Observatory. The gatherings were referred to as "Star Parties." He was an advocate of scientific observing, doing both variable stars and meteor watching. He mentored many in these endeavors, but the standout was Ed Halbach, who take this to a whole new level and eventually be our Observatory Director for 35 years and the leader of our Club.

In 1934 when Armfield was offered the use of a 13-inch plate glass mirror from the

AAVSO, he put up the money and his new MAS friends made a telescope for that mirror and without a remote site yet available, it was placed in Armfield's backyard. In 1936, Armfield formed another or-

ganization, American Amateur Astronomical Association (AAAA), a forerunner of the Astronomical League. His telescope remained there until the fall of 1936 when Armfield had to move from his house due to a divorce.

Without this gathering location, it lit a fire under the club to begin developing the land in New Berlin that was offered in 1934 with the stipulation it be a working observatory. Ground was broken in July of 1937, we took deed to the property in March of

1938, and the observatory was formally dedicated on June 8th. Unfortunately, Armfield would have to leave the Milwaukee area when his job took him to Ohio in 1944. As far as I can tell, he fell out of communication with the club and only returned to visit on one occasion. To punctuate this point, he died on April 23, 1977, and there was nothing noted in our newsletter.





As our Club Historian, I had wondered what really happened to Armfield. I learned that he eventually settled in Fargo, ND, but could find out very little of his life. Did he continue to do astronomy? (His tombstone gave me a good idea that he did.) How come he only came back to Milwaukee the one time and why was he so out of touch?

Surprisingly, I learned very little about what Armfield thought about his time in Milwaukee because he simply never talked about his time here! Connie only found out about the MAS because Ed Halbach sent a letter to her when he learned of Armfield's passing many years later. I had always thought that Armfield had just burned out on astronomy with all the work he did to form the MAS, the AAAA, and then the establishment of the observatory. But Connie theorized that it was all about the divorce.



The reason for the divorce was that Armfield's wife had an affair, a fact she only learned after his death. With that knowledge she also found out she had a sister! They met and according to Connie they immediately hit it off. But many things would become clear as she talked about the divorce. She said Dorothy Armfield had an affair with someone named

Carl Frister and they would later get married. I recognized the name immediately. Frister was a very active MAS member in those early years and I showed her pictures of him. So Connie learned why her father wasn't forthcoming about all his efforts in the MAS.



However, I did learn that, yes, his interest in astronomy continued. She said he owned 3 telescopes and would regularly have star parties in the yard, just as he had during the early years of the MAS. He was also regularly on the

radio as he became known as the local astronomy expert.

Connie was thrilled to learn so much about her father's life which she knew almost nothing. She was also very

happy to see pictures of Ed Halbach who she was so grateful to for reaching out to her.

The full story about the A-Scope can be found on our website at: <http://www.milwaukeeastro.org/history/AScope.asp>

by Gene Hanson

Member's Story

A Family Night Out

I took my 13 year old nephew to the Club last night as he has shown an interest in imaging with me. We set up my scope under the light of a very bright waxing moon, and I talked him through doing a polar alignment, setting up the imaging software, and moving the scope around the sky. After practicing with a few shots of M20, Albireo, M51 and fighting the early clouds, he set his sights on the Dumbbell Nebula. I watched as he slewed the scope, plate solved the image with Astro Tortilla, focused, and finally settled on configuring Backyard EOS for sixty 45 seconds shots at ISO 1600. We used dithering to help reduce noise. While the Backyard EOS did its job, we opened up B scope and spent some time looking at Jupiter in the glare of the moon and Saturn. He's hooked.

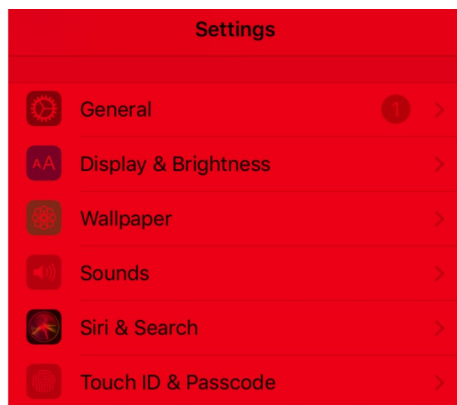


I walked him through processing his images in Astro Pixel Processor and GIMP this morning, this is the final result. I think he did a great job, he's already told me he wants to come back and get more time with the object to get more details out of the image. I think we have a future member in the making here.

by Jim Bakic

How to Turn Your iPhone Screen Red for Astronomy

Bright smartphone screens can be a menace to astronomers, ruining precious dark-adapted vision. But it is possible to set up your iPhone to turn the screen red at three clicks of a button.



Go to **Settings** → **General** → **Accessibility** → **Display Accommodations** → **Color Filters**. Turn the Color Filters on, select the Color Tint. Two scrolling bars will pop up: *Intensity* and *Hue*. Scroll both pointers to the right to turn *Hue* to red and to turn *Intensity* up to maximum. Go back to **Accessibility** and select **Accessibility Shortcut**. Select Color Filters so a blue tick appears to the left. You will now be able to click your home button (the circular button below your phone's screen) quickly three times to instantly turn the screen red. Triple click it again to turn the red filter off. For more details go to BBC's [SkyAtNightMagazine](#) advice section.

What if you don't own an iPhone?

It seems non-iPhone users may have trouble recreating this on their smartphone, but there are a few apps that can do the same trick:

[Twilight: Blue light filter](#)

[Red Moon – Screen filter](#)

Northwoods Starfest

Northwoods Starfest was held on August 2-4 at the Beaver Creek Reserve, about 15 miles southeast of Eau Claire. This is an outdoor education center with about 400 acres of woodland, prairies, and creeks. You can either sleep in one of the several bunkhouses, or bring your own tent or small camper. Showers are available in the central bath house. Hobbs Observatory is located there, and is owned and operated by UW-Eau Claire. The members of CVAS (Chippewa Valley Astronomical Society) are able to use the scopes and hold weekly public nights.

Starfest registration includes meals, which makes attending so much easier. Food is always a reason for everyone to get together as a group several times a day.

Being a Wisconsin starfest, members of local clubs are in abundance. CVAS Northern Cross Science Foundation, Northeast Star Gazers, and our MAS.

I setup Friday afternoon. Registration check in only took a minute, and I picked up a starfest T-shirt I had preordered. Supper was brats and hot dogs, available for purchase (cheap), which is the only time your meal not included with the registration fee. There is lots of room to setup and spread out in the open field in front of the Hobbs observatory. A central power pole was setup in the observing field. 65 or so people were in attendance, with 30 or so telescopes setup. Refractors, cassegrains, dobsonians. I even saw one of the previous MAS orange based, moongazing scopes in use. I took my C14 and ran it on battery power. I enjoyed walking around and looking at all the things others do to modify their setups. Sharing ideas and knowledge is one of the big benefits of seeing so many astronomers in one place.

On Friday there was an evening presentation on the detection of gravitational waves. The night was mostly cloudy so there wasn't much telescoping going on, but plenty of talking. When it comes to the night time snack time everyone shows up.

Saturday brunch was plentiful (sausage, biscuits and gravy, pancakes, eggs, fruit) to keep

busy all day. There are lots of trails if you were inclined, but I opted to hang out with all the other new friends. There were two afternoon presentations: How to do high resolution planetary imaging by MAS's Lee Keith, and Overview and modeling of relativistic stars.

A great supper (beef stroganoff, rolls, fruit, beverages, ice cream) was followed by plentiful door prizes. There was an evening presentation about the physics of electromagnetic radio and light waves with great demonstrations with sparks! Really kept your interest. It rained during presentation, then the skies cleared. One of the highlights as we got to see was the moon Io disappear behind Jupiter.

A few scopes were imaging, but most people were doing visual. There were plenty of other scopes to compare views with different apertures or eyepieces. I got to try a set of binoviewers on my C14 that one of the other attendees had. What a cool sight to look



at Jupiter with both eyes. The downside of binoviewer is that refocusing between eyes, and setting interoptical distance for different eyes can be cumbersome for multiple observers. There was one young family new to astronomy. The CVAS set them up with a scope and they are now hooked for life. It's great to see young people starting out and showing such interest.

Of course, midnight snack is a hit again. Then more viewing, though increasing dew was challenging. There were occasional meteors from the perseids. A few observers made it until the sky started to lighten, though most wander off to bed earlier.

Sunday breakfast was blueberry pancakes, biscuits and gravy, sausages. How can you beat hot meals that you don't have to cook! Packing up is a sad time when everyone tries to put away their dew covered equipment. But you know that there will be, for sure, a next time when you can see all your new friends again.

by Mike Bauer

In the Astronomical News

Star Hurling Around a Giant Black Hole Proves Einstein Right - Again

At the center of the Milky Way, Einstein's laws rule. Measurements of light from a star that orbits close to our galaxy's central supermassive black hole cannot be explained by classical views of gravity and instead require Einstein's general relativity.

General relativity predicts that starlight should lose some energy as it travels

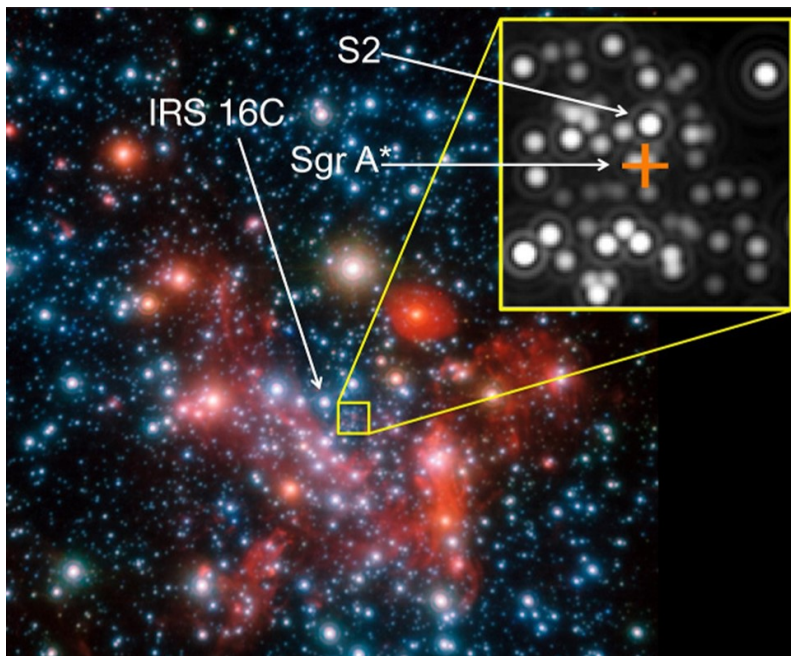
through the powerful gravitational field of a black hole. That loss in energy is expected to stretch the wavelength of light from stars near huge black holes, making them look more red. Standard, or Newtonian, gravitational

theory doesn't predict this. No one expects Einstein's theory to be wrong at this scale, but if its predictions were off by even a little, it might point towards new physics.

To test between the two theories, Tuan Do at the University of California, Los Angeles, and his colleagues used 24 years of observations of a star called S0-2, which orbits relatively close to our galaxy's central supermassive black hole, Sagittarius A*. The data included measurements of the star's colour and position. The team calculated its velocity from measurements of its position over time.

"When the star becomes redder, it also looks like it's moving away from us faster than it would without this gravitational redshift," says Do. "That is why it took 24 years to do this." The researchers needed enough data to nail down the star's orbit and make sure this wasn't tainting the colour measurements.

There have been similar studies in the



Star S0-2 in the center of our galaxy. Credit: ESO/MPE/S Gillessen et al.

past, but this work includes new measurements of the star's closest approach to the black hole in 2018, which increased their confidence in its orbit. Do and his colleagues found that S0-2 appeared significantly redder than we'd expect if its light wasn't being stretched by relativistic effects. "Einstein was right, for now," says Do.

S0-2 isn't the closest star to Sagittarius A*, but it is the only one that was bright enough to observe with the equipment available when the observations began in 1995. Do and his team, as well as other research groups, have started observing dimmer stars that are even closer to the black hole, but don't yet have enough data to test general relativity more precisely with them.

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	10" F/6.3 LX200	Ray Zit Observatory
8	Tamas Kriska	Stellarvue SVQ 100 F/5.8	Jim Toeller Observatory
9	Paul Borchardt	Solar scope	SkyShed POD

At Your Service

Officers / Staff

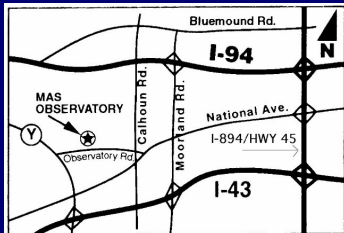
President	Tamas Kriska	414-581-3623
Vice President	Lee Keith	414-425-2331
Treasurer	Sue Timlin	414-460-4886
Secretary	Agnes Keszler	414-581-7031
Observatory Director	Paul Borchardt	262-781-0169
Asst. Observatory Director	Jeff Kraehnke	414-333-4656
Newsletter Editor	Tamas Kriska	414-581-3623
Webmaster	Gene Hanson	262-269-9576

Board of Directors

Jim Bakic	414-303-7765
Scott Berg	262-893-7268
Russ Blankenburg	262-938-0752
Clark Brizendine	414-305-2605
Jason Doyle	414-678-9110
John Hammetter	414-519-1958
Jeff Kraehnke	414-333-4656
Jim Schroeter	414-333-3679
Gabe Shaughnessy	262-893-4169
Steve Volp	414-751-8334
Mike Wagner	262-547-3321

September Keyholders

09/06	Jim Bakic	414-303-7765
09/14	Mike Bauer	262-894-1253
09/21	Russ Blankenburg	262-938-0752
09/28	Gene Hanson	262-269-9576



MAS Observatory

18850 Observatory Rd
New Berlin, WI 53146

www.milwaukeeastro.org