

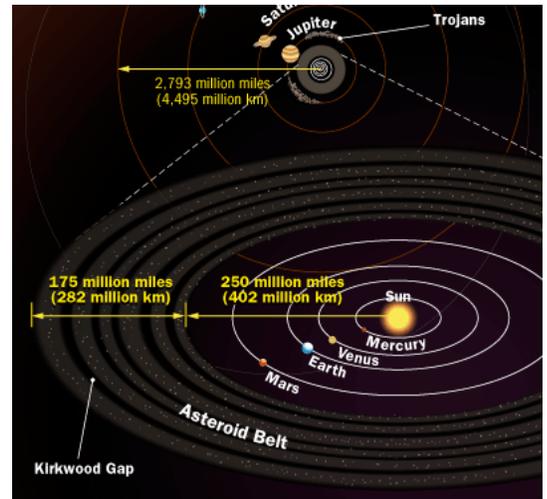


May, 2017

Next Meeting on June 12th

The Milwaukee Astronomical Society will hold its next meeting on **Monday, June 12th, from 7 PM at the Observatory.** It is going to be a combined Board/Membership Meeting, where during the first hour organizational and Observatory related issues will be discussed. During the second hour we will have a presentation on the gravitational effects of planets.

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



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“First Wednesday” Meetings

This summer we will try to resurrect an old tradition of the First Wednesday Meeting. This is an informal meeting covering any observatory- or astronomy related questions, topics, issues without pre-determined agenda held on the first Wednesday of each month at 7 PM. The meetings will be led by Paul Borchardt Observatory Director. Everybody is welcome. See you on June 7th on the Hill.

Election Results

During the Business Meeting on the May 19th three new Directors were elected into the Board for a three year term. **We would like to welcome Scott Berg, Russell Blankenburg, and Jason Doyle.**

The new Board of Directors elected the Officers. There were no nominations for officer positions other than the present incumbents. Officers are the following: President: Tamas Kriska (ex officio), Vice-President: Susan Timlin, Secretary: Agnes Keszler (ex officio), Treasurer: Susan Timlin.

The president appointed Chairs for the following standing Committees: Observatory: Tamas Kriska, Membership: Jeff Kraehnke, Open House Program Planning: Susan Timlin.

Paul Borchardt will be serving as Observatory Director till 2019. Jeff Kraehnke keeps holding the Assistant Observatory Director position.

There is no change in the positions of Webmaster (Gene Hanson), Newsletter Editor (Tamas Kriska), and Librarian (Jill Roberts).

Observatory Report

Quonset remodel is done! Both A-building and the Quonset have never looked better. The new breaker box has passed inspection and WE Energies has started to trench for the new 200-amp power line. Repairs have to be made to some of the underground power lines of our own that have been hit and cut during the trenching. Some of the lines hit are old and not in use, but the line to the well was cut and it will be at least temporarily spliced back together so the rest rooms can stay in use. Complete repair to all lines in use will be done before the trench is filled back in. Miller Brothers Heating and Cooling will be contacted this week to set up a time for installing the air conditioner on to the new furnace this next month which will complete their work. The cables that open and close the slit on B-dome have become worn and frayed, they will be replaced in the next few days so B-scope can stay in operation. On the Lunt Solar Scope, the etalon tuner that was sent back to Lunt last fall due to a leak is leaking again, so the tuner has been sent back to Lunt for repair. I asked about getting a different tuner since this one has been repaired once already, but their policy is to repair not replace their equipment.

Continued on page 3

Treasurer's Report

\$7,175.22	Starting Balance as of 4/10/2017
	<u>Expenditures</u>
-\$14.98	Hack charge reversed
\$5.61	PayPal fees
-\$7.68	Erroneous charge
\$18.49	Water pump valve
\$100.94	WE Energy
\$17.34	Mower gas
\$6781.57	Quonset project
\$6,901.29	TOTAL Expenditures
	<u>Revenue</u>
\$6,214.48	Donations
\$145.50	Equipment sales
\$208.00	Membership dues
\$6,841.91	TOTAL Revenue
\$6,841.91	Ending Balance as of 5/17/2017

Respectfully Submitted,
Sue Timlin, Treasurer

Meeting Minutes

The meeting was held on May 19th at the MAS Observatory, New Berlin, and was called to order at 7:00PM by Tamas Kriska President.

Minutes of the April Board Meeting electronically submitted by Agnes Keszler Secretary ahead the meeting were approved.

Treasurer's Report electronically submitted by Sue Timlin Treasurer ahead the meeting and was approved.

Observatory Director's Report electronically submitted by Paul Borchardt Observatory Director ahead the meeting was approved. The B dome cable was successfully replaced. Upon finishing the Quonset remodeling, Paul thanked everybody who contributed with labor and/or money to the project. He emphasized the effort of Tamas Kriska, Jeff Kraehnke, and Agnes Keszler, and specially thanked Tamas for his vision and leadership.

Membership Committee Report was electronically submitted by Jeff Kraehnke Committee Chair ahead the meeting. Membership application of Scott Campbell & family, Jessica Moehr & family, Matthew Cramer & family, Joseph Ryan & family, and the Aumann family were approved.

Old Business – Solar Eclipse: The campsite in St Francois Park, MO is full. The Franklin Library will be contacted concerning the talk they have requested. *Quonset hut remodeling:* The remodeling has been accomplished. Tamas gave short summary of the project. *Electric service:* The WE Energy started the power upgrade. During the trenching some electrical wires including that of the water pump have been cut. The wire will be repaired during the coming weekend, and the map of the underground cables and pipes will be updated. *MAS campout:* The campout will be on July 21-23. Details were posted on the Google Group.

New Business – The Club is considering acquiring a modern and cheap Dobsonian telescope to replace the retired loaner scopes.

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Membership Report

Since the last Report we received two new membership applications and would like to welcome David Piek & Family and David Humphreys & Family. We now have 139 active members.

Respectfully Submitted,
Jeff Kraehnke, Committee Chair

Observatory Report

At least the repair is still covered under warranty. The Solar Scope can still be used with just the one etalon tuner and the other should be back in a couple of weeks. Spring cleaning day, held on the first Saturday of May, went well with a nice turn out of members to work on cleaning at the Observatory. Thanks to all who helped rid the Observatory of a years' worth of dirt and dead bugs. The store room has been cleaned and the equipment in it was sorted out, most was trashed and used pieces of telescope equipment like mirrors will be sold off. Tamas, Agnes, and Jeff have worked on repair and painting of that room which was the last place in the A-building needing work. A-dome is another story, the floor needs replacing, there's a hole in a wall that needs attention, and the slit needs to be worked on to make it easier to open and close. These repairs will be done over this summer. The weather has improved a little in the last month for astronomy, and the Observatory has been in use for every one of the clear nights in the last month. Jupiter has been the target of several members imaging efforts and there has been deep sky imaging going on with several telescopes each night. In an effort to provide the Quonset with a new chart of Messier Objects, and project has been started to gather images of the complete Messier list which have been taken by the members of the club. A temporary chart will be in the Quonset showing the progress by adding each image to the chart as they become available, when the chart is completely filled a print will be made, framed, and hung on the front wall .

Respectfully Submitted,
Paul Borchardt, Observatory Director

Meeting Minutes

Summer schedule: we keep running the summer meetings (June through August) on the second Monday of the month. The Board Meetings will be followed by General Meetings. *"First Wednesday" Meetings:* the MAS will re-launch an informal monthly meeting led by the Observatory Director on the first Wednesday of every month. *Summer Picnic:* A potluck will be held on Saturday, August 5th, 4 PM. The Club will provide beverage and charcoal. *Yerkes Star Party:* Neil Simmons will be asked about Randy Landsberg's contact info.

Election – The 2nd term of Agnes Keszler and Tamas Kriska, the 1st term of John Hammetter, and the partial term of Paul Borchardt were expired. John was elected to 2nd term, Scott Berg, Russell Blankenburg and Jason Doyle were elected to the Board.

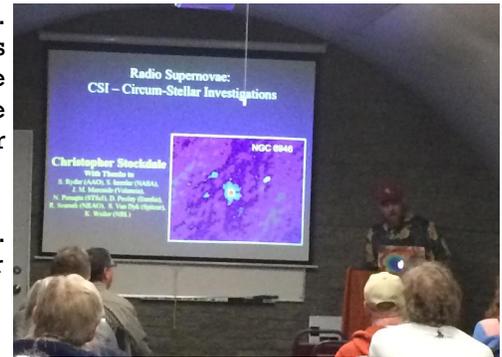
There is no change in the Officer positions.

Program
– Dr. Christopher Stockdale, Associate Professor

and Assistant Department Chair at Marquette University gave a presentation entitled Extragalactic Supernovae.

The meeting was adjourned at 9:30 PM.

Respectfully Submitted,
Agnes Keszler, Secretary



Public Nights



We hosted our first Public Night on Friday, May 26th with a great success. Despite the bad forecast for the night, rain stopped at 7 PM, and after sunset the sky has completely cleared. We had a good turnout of about 50 people, who attended Herman Restepro's presentation about Jupiter. After the talk our guests looked Jupiter, M3, and different stars through designated telescopes. According to our last year tradition, kids were excited to collect stickers at each station. The next Public Night will be on Saturday, June 17th, starting at 4 PM. The topic will be the Sun. Any help from members will be appreciated.

Observatory News

The Quonset Hut Remodeling

Before



The Quonset remodeling project is officially over!

The Quonset Hut that serves as our meeting and lecture hall was donated to the MAS in 1955 by the Milwaukee Public Museum. Simple maintenance could not cope with the natural deterioration of the 60+ years old building, so we left with no choice but give the building a major facelift. During the past 8 months the moldy and water damaged inner shell was completely replaced including the floor. In the process the building was insulated with spray-foam. The floor was covered with carpet. New furnace/air conditioning were installed. Along with the replacement of the electrical system modern lighting and audio-visual equipment were installed.

The reconstruction work was extended to the lobby of the 'A' building which is connected to the Quonset. Wall and ceiling panels, and flooring were replaced, a rail was mounted to the staircase, storage rooms were remodeled and re-organized. New doors and bathroom equipment were installed. Both the Quonset and one of the bathrooms were made wheel chair accessible.

The main electric panel of the Observatory was replaced and the power service upgraded from 100 amp to 200 amp.

Almost all work was done by members of the Society. To finance the project extensive fundraising was done, which included selling old telescopes and other astronomical equipment, and surplus books from the library. Contributions were received from both members and non-members.

The total cost of the project was \$34,125. The income was from \$6,193 donation from Best Carpet, \$3,018 cash donation, and \$14,238 from equipment sale. The Club covered the remaining \$10,628 from the endowment fund.

The MAS appreciate the effort of every participants listed below in alphabetical order:

Brandon Antlfinger, Scott Berg, Russ Blankenburg, Paul Borchardt, Bill Bowen, Clark Brizendine, Rob Burgess, Russell Chabot, Tom Clark, Linda Dobogai, Jason Doyle, Janice Edwards, Frank Evans, Carlos Garces, Brian Ganiere, Gene Hanson, Scott Jamieson, Lee Keith, Agnes Keszler, Jeff Kraehnke, Tamas Kriska, Michael Monti, Jill Roberts, Jim Schroeter, Mike Smiley, Pete Smith, Patrick Sutton, Jarred Thede, Simeon Thiele, Sue Timlin, Steve Volp, Mike Wagner, John Weber, Ron Zoltowski.

Many thanks to all of you!

After



Summer Campouts

Wisconsin Observers Weekend (WOW) on June 22-25

The Wisconsin Observers Weekend, which is organized annually by the Northeast Wisconsin Stargazers (NEWSTAR) Astronomical Club will be held on June 22-25, Group sites 1, 2, & 5 of the Hartman Creek State Park Waupaca, WI. Hartman Creek State Park is 1,500 acres of post-glacial beauty located about 30 miles northwest of Oshkosh on the upper Waupaca Chain-O-Lakes. Registration fee is \$20/single, \$ 35/couple, \$4/child, or \$45/family. Registration forms can be find at:

http://www.new-star.org/index.php?option=com_remository&Itemid=58&func=fileinfo&id=34

The WOW registration fee also includes 3 nights camping fee, however you will need to purchase a Wisconsin state park sticker at the ranger station when you enter the campground if you do not already have one. The sticker fee is currently \$28 annual (\$13 senior) or \$8 daily for WI residents, \$38 annual or \$11 daily for non-residents. At the door registration will be \$25 per person (children under 18, \$5) regardless of length of stay, if space is available.

WOW reserves all five-group campsites at Hartman Creek State Park so that evening observing environment is white light free and as dark as possible. This is primitive camping – pit toilets and hand water pump only – but hot showers and “flushes” are available in the family campground a short distance down the road. Tent camping sites are plentiful, however there is no parking on the grassy areas. Saturday afternoon NEWSTAR hosts an ice cream social for WOW attendees free of charge. Drawing for door prizes will be held at the same time.

MAS Campout on July 21-23

The last time the MAS had a campout was back in 2010. After a long drought of no campouts mainly because we had no place to go, (the state parks have gotten real expensive for group sites and the fees are nonrefundable if the weather is bad).

Now we are excited to announce that our new members **Tom Maxwell and his wife Toni** kindly offered to host a Club campout on their land in the Nicolet Forest.

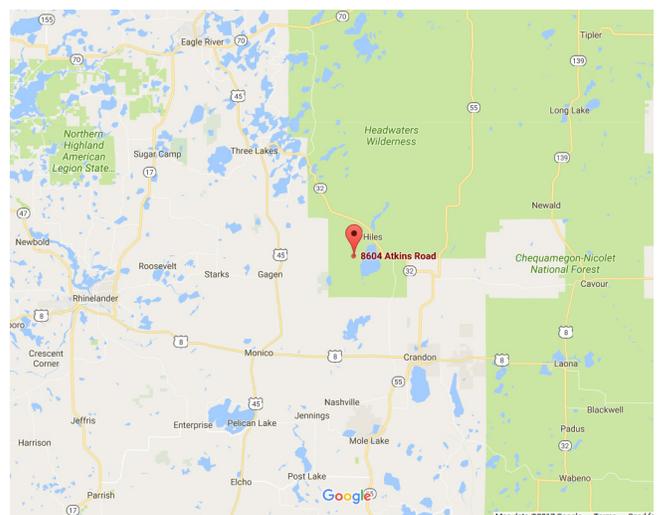
The date: Friday, July 21 to Sunday, July 23.

The address: 8604 Atkins Road, Hiles, WI 53235

On the area there is electricity, water, and a port-a-john available to use. Pine lake is right there and Tom has a pontoon boat and several ATVs that we will be able to use also. Tom only asked that everyone try to bring a dish, a cold salad, hot dogs, chips, brats etc, and clean up after themselves and have fun.

Near to the area is Three lakes which has Three Lakes Winery and they do Winery Tours. Tom says he'll probably come up with more day time options too. For those who want to come to the star party but can't see staying in a tent for the weekend there is lodging within minutes. They are: Pine Lake Pub & Cafe - they have a cabin rental (Phone: (715) 649-3220), and Little Pine Motel - affordable rooms within a couple minutes. (Phone: (888) 541-4150).

RSVP for attendance by mid June—early July to paulborhardt@att.net.



In the Astronomical News

NASA Space Probes Found Man-Made Barrier Shrouding Earth

NASA space probes have detected a massive, human-made 'barrier' surrounding Earth, and tests have confirmed that it's actually having an effect on space weather far beyond our planet's atmosphere.

That means we're not just changing Earth so severely, scientists are calling for a whole new geological epoch to be named after us - our activities have been changing space too. But the good news is that unlike our influence on the planet itself that humungous bubble we created out in space is actually working in our favor.

Back in 2012, NASA launched two space probes to work in tandem with each other as they whizzed through Earth's Van Allen Belts at speeds of around 3,200 km/h (2,000 mph).

Our planet is surrounded by two such radiation belts (and a temporary third one) - the inner belt stretches from around 640 to 9,600 km (400 to 6,000 miles) above

Earth's surface, while the outer belt occupies an altitude of roughly 13,500 to 58,000 km (8,400 to 36,000 miles).

Recently, the Van Allen Probes detected something strange as they monitored the activity of charged particles caught within Earth's magnetic field - these dangerous solar discharges were being kept at bay by some kind of low frequency barrier. When researchers investigated, they found that this barrier had been actively pushing the Van Allen Belts away from Earth over the past few decades, and now the lower limits of the radiation streams are actually further away from us than they were in the 1960s.

So what's changed? Very Low Frequency (VLF) radio communications, have become far more common now than in the 60s, and the team at NASA confirmed that they can influence how and where certain particles in space move about.

"A number of experiments and observations have figured out that, under the right conditions, radio communications signals in the VLF frequency range can in fact affect the properties of the high-energy radiation environment around the Earth," says one of the team, Phil Erickson from the MIT Haystack Observatory in Massachusetts.

With frequencies between 3 and 30 kilohertz, they're far too weak to carry audio transmissions, but they're perfect for broadcasting coded messages across long-distances or deep underwater.

One of the most common uses of VLF signals is to communicate with deep-sea submarines, but because their large wavelengths can diffract around large obstacles such as mountain ranges, they're also used to achieve transmissions across tricky terrain.

It was never the intention for VLF signals to go anywhere other than on Earth, but it turns out they've been leaking into the space surrounding our planet, and have lingered long enough to



Credit: NASA

form a giant protective bubble. When the Van Allen Probes compared the location of the VLF bubble to the bounds of Earth's radiation belts, they found what initially looked like an interesting

coincidence - "The outward extent of the VLF bubble corresponds almost exactly to the inner edge of the Van Allen radiation belts," says NASA.

But once they realized that VLF signals can actually influence the movement of the charged particles, they realized that our unintentional human-made barrier has been progressively pushing them back.

While our protective VLF bubble is probably the best influence we humans have made on the space surrounding our planet, it's certainly not the only one - we've been making our mark on space since the 19th century, and particularly over the past 50 years, when nuclear explosions were all the rage.

"These explosions created artificial radiation belts near Earth that resulted in major damages to several satellites," the NASA team explains in their new report. "Other anthropogenic impacts on the space environment include chemical release experiments, high-frequency wave heating of the ionosphere and the interaction of VLF waves with the radiation belts."

Carl Sagan wanted to find unequivocal indications of life on Earth from up in space - turns out, there are a bunch of them if you know where to look.

by Bec Crew, ScienceAlert

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



MAS Observatory

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At Your Service

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Asst. Observatory Director	Jeff Kraehnke	414-333-4656
Newsletter Editor	Tamas Kriska	414-581-3623
Webmaster	Gene Hanson	262-269-9576

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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
Sue Timlin	414-460-4886
Steve Volp	414-751-8334

June/July Keyholders

6/3	Henry Gerner	414-774-9194
6/10	Sue Timlin	414-460-4886
6/17	Paul Borchardt	262-781-0169
6/24	Herman Restrepo	414-702-2842
7/1	Gene Hanson	262-269-9576
7/8	Jeff Kraehnke	414-333-4656