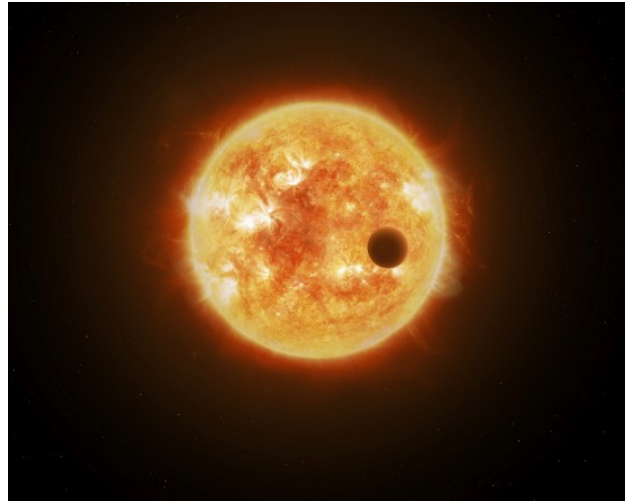




## September Meetings

The next **Membership Meeting** will be on Monday, September 20<sup>th</sup> from 8 PM via Zoom videoconference. Fellow MAS member Jeff Kraehnke will be giving a presentation titled Exoplanets: My Journey So Far. He will discuss why and how we study exoplanets, the challenges with doing so, and what we hope to learn. A brief review of exoplanet missions past, present, and future will be discussed as well as Jeff's own exoplanet journey of observing exoplanets and contributing his data to science.



As always, the **Board Meeting** will be held right before the Membership Meeting, from 7 PM, and is open to every MAS member who is interested in organizational and Observatory related issues.

A **First Wednesday** informal conversation meeting will be held through Zoom videoconference on Wednesday, September 1<sup>st</sup>, from 7:30 PM. Here we usually discuss technical aspects of astronomy, however, any astronomy-related topic can be brought up. New members are especially encouraged to attend this meeting. It is a chance to receive tips on how to get started and/or get more involved in the Club's activities.

The **Astrophotography Interest Group** will meet on Wednesday, September 8<sup>th</sup> at 7 PM through Zoom videoconference.

Invitations will be sent out prior to meetings.

The MAS Google Group is as active as ever. Learn about the astronomical news, follow equipment related discussions, or just check out the latest images taken by fellow Club members.

**COVID-19:** The Milwaukee Astronomical Society follows the [CDC Guidance](#) in all our activities.

**COVID-19 Update:** The MAS Board has decided that going forward we will follow the CDC COVID Guidelines. Currently, because both Milwaukee and Waukesha counties are under "high" risk, masks are not required for fully vaccinated people on the grounds of the observatory, but masks are required inside the domes, control rooms, and the Quonset. We understand some of our member/guests will not be comfortable with this, but participation is entirely voluntary.

### Inside this issue:

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## Observatory Director Report

I have been trying to get together three quotes for the concrete steps needed for the rear entrance to the Quonset Building. So far, I received one of the quotes, Jessmon Concrete has bid the work for \$2700 to provide the same configuration that the front steps are and installing four post footings under the slab. This seems high to me and will be very interested in the next two quotes.

With the board's approval of the proposal to upgrade the imagers on both the "G" Scope and "F" Scope, I have purchased the ZWO ASI6200MM mono camera. This camera is on sale for \$200 less than MFG and purchased from OPT Telescopes but is on backorder. I have invoices from OPT Telescopes for the ZWO ASI6200MM and all of the related equipment for both cameras but at this point I am waiting to hear back from OPT Telescopes in regard to a 3% discount given to educational organizations. With invoices the MAS will be able to send a check from the clubs' checking account. OPT Telescopes normally doesn't like to take checks which has prolonged the process of obtaining the new equipment.

Respectfully Submitted,  
Paul Borchardt, Observatory Director

## Treasurer's Report

<b>\$13,293.30</b>	<b>Starting Balance as of 07/17/2021</b>
	<b><u>Expenditures</u></b>
\$4.61	PayPal fees
-\$14.00	Insurance refund
-\$1,070.00	Roofing deposit refund
\$82.20	WE Energies
\$36.00	Water/Sewer
-\$997.19	TOTAL Expenditures
	<b><u>Revenue</u></b>
\$60.00	Public donations
\$208.00	Membership dues
\$4.48	Grants
\$490.00	TOTAL Revenue
<b>\$272.48</b>	<b>Ending Balance as of 08/14/2021</b>

Respectfully Submitted,  
Sue Timlin, Treasurer

## Minutes

Due to the COVID-19 the February Board Meeting was held via Zoom videoconference on August 16<sup>th</sup>. The meeting was called to order at 7:02 PM by Tamas Kriska President.

**Minutes, and Treasurer's Report** electronically submitted ahead of the meeting were approved after a wording change (tax exemption has been reviewed, instead of evaluated).

**Observatory Director's Report** electronically submitted by Paul Borchardt Observatory Director ahead of the meeting was approved.

**Membership Committee Report** was submitted electronically ahead of the meeting. Daniel Schlei & family, Linda Joy & family, and Ed Ryan & family were approved.

**Old Business – Rubber roofing of A-dome:** Since TriCountry Contracting won't have the roofing material in the near future, the deposit was withdrawn from them, and Vidmar Roofing Inc. was hired. The work will be starting on August 26<sup>th</sup>.

**Public Nights:** A motion was made and carried to cancel the September 10<sup>th</sup> event due to the current Covid situation. Sue will survey how to run safely the October events.

**New Business – Website provider change:** A motion was made and carried to change the website provider to SmarterASP. We will have unlimited server space and bandwidth for lower price.  
**Quonset backdoor steps:** Paul received a quote for \$2,700. Other quotes will be asked.  
**Closing the Invesco account:** A motion was made and carried to withdraw all money to be used for equipment upgrade and close the Invesco account.  
**Modifying membership dues:** Gene proposed to eliminate the \$2 surcharge for paying thru PayPal. Jeff proposed to reduce the membership types: Resident (\$52), Non-Resident (\$32), and Youth (\$23). The membership would involve immediate family. Discussion will be continued.

**Announcement –** The next meeting will be on September 20<sup>th</sup>, 2021, via Zoom videoconference.

**Program –** Video about globular clusters.

Respectfully Submitted,  
Agnes Keszler, Secretary

## Membership Report

Since the last Report we received 7 new membership applications. We welcome Linda Joy & Family, Ed Ryan & Family, Philip Wheatley & Family, Robert Davis, Slade Klawikowski & Family, Judy Salus, and Christopher Braeger & Family. The total number of active members is 211.

Respectfully Submitted,  
Jeff Kraehnke, Committee Chair

# MAS Website News

## MAS Astronomy Beginner's Guide



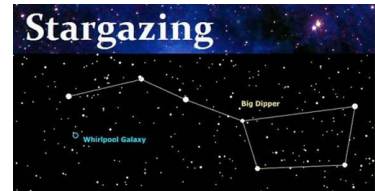
For a long time I had wanted to write some sort of beginner's guide to astronomy and felt I could do a decent job. I've seen a couple of decent books, but looking at the examples I could find on the internet left a lot to be desired. However, there is the saying: just because you *can* doesn't mean you *should*.

The *should* came last year when our membership director, Jeff Kraehnke, thought the club should have a beginner's section and he offered the Denver Astronomical Society's "For Beginners" as a model we could emulate.

Though their page was okay, to me it felt too much like a checkbox, something to have just to fulfill a requirement. Consequently I started the process of thinking about what a really good beginner's guide should have. I wanted it to be good enough where other clubs and amateurs would both want to read it and want to link to it. This would then drive traffic to our website which is a big draw for our growing membership. So it was a fairly high standard.

But I had another high standard that I had to live up to. Our website has a section called Stargazing which was written by longtime member, Randy Culp. He wrote this for his own website as an instructors guide to teach learning the sky. It was so excellent I wanted it on our MAS site as well and Randy gladly gave his permission and

helped make it happen. And in regards to my project, the great news was I wouldn't need to write a huge (and very important) section on learning the sky. The downside was that I would have to match the standard he set.



- [Stargazing](#)
- [Winter Sky Tour](#)
- [Spring Sky Tour](#)
- [Constellations](#)
- [Summer Sky Tour](#)
- [The Sky by Eye](#)
- [Autumn Sky Tour](#)
- [Star Hopping](#)

Frankly, I thought simply writing the text would be relatively easy. But you can't have a great guide without photos and diagrams because a lot of astronomy is visual. And because all the material is technically being published, I could not just ignore the copyright implications and open up the club to claims of copyright infringement. Here's how I proceeded:

- I could obviously use my own photos and those from the club. Those images would be tagged as MAS Images.



- [Beginner's Guide](#)
- [Using Telescope](#)
- [Getting Started](#)
- [Solar System](#)
- [Stellarium](#)
- [Deep Space Objects](#)
- [Asterisms](#)
- [Double Stars](#)
- [Celestial Sphere](#)
- [Star Hopping](#)
- [Telescopes](#)
- [Day and Time](#)

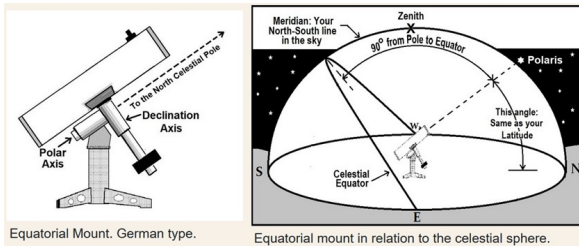


- Use planetarium program screenshots. Stellarium and TheSky allow their material to be republished as long as they are sited.



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- Use images and diagrams from Wikipedia. When I wrote our club's Wikipedia page I learned that all the images on Wikipedia are from Wikipedia Commons. These images are all donated from the copyright holders and any and all of them can be republished as long as they're properly cited.
- Create my own diagrams when practical.



So how do you begin? How do you end? Both of these are incredibly easier when you're publishing to a website. Pages can be added and updated in real time. There's no particular deadline. And, really, I didn't know how far I would (or should) go.

The order of the presentation of topics was almost impossible and I've simply gone in what I hope is a decent order. But the truth is learning is never linear and people will always gravitate to those topics most of interest to them. And you really need to go back now and then because you'll pick up more information reading something later for a second or third time.

Currently the beginner's section is already fairly lengthy. It is 30 web pages which is roughly 30 chapters in a book. But it's not done and maybe it will never be completely done. I'm receiving comments and I really need to add a glossary. In the short term I'm using hyperlinks to Wikipedia. I also need a section on artificial satellites.

Did I learn anything myself along the way? Of course! When you write about a topic you quickly learn what how much you don't know or what you thought you knew. Trying to explain to someone else really shows what you really know. It also made me think of how I learned about the various aspect of astronomy.

by Gene Hanson, Webmaster

## Website report

Our website committee, which is made up myself and Steve Volp have decided we should change our hosting facility which is presently with DiscountASP. It is our recommendation that we switch to SmarterASP. The reason for changing our provider is it will cost us half of what we're paying presently and getting more storage. This can be summarized by the following table:

Item	DiscountASP	SmarterASP
Cost	\$10/month	\$5/month
Server Space	1 GB	Unlimited
Additional ½ Gig storage	\$5/mo	N/A
Bandwidth	81920MB	Unlimited
Email	500MB	Unlimited
Additional 100MB email	\$1/mo	N/A

The big constraint we've faced is the 1 gigabyte storage limit without paying considerably more for what is needed. This has been dealt with by seriously downsizing and compressing the images in our Showcase and history section, minimizing emails, and offloading many of the larger files onto Steve Volp's hosting provider. For the last month and a half I have been testing this new provider because I switched my own personal stuff. For a long time I've wanted an ASP provider and this gave me both the opportunity to switch my own stuff and test this host for the club. I downloaded the MAS site onto it and with just a couple of tweaks it works just fine. Everything has been tested and so far we've seen no issues. Consequently, making this switch is a no-brainer.

by Gene Hanson, Webmaster

## Member's Story

### Star Party Season

From my wanderings around other local star parties I was able to get a lot of advice from other people about really good star parties around the country. There are maybe a dozen big star parties at really dark sky sites. From looking at the night dark sky maps, I was looking for the closest to us here in Wisconsin.

The Nebraska Star Party (NSP) is held at the Snake campground of Merritt reservoir, about 30 miles southwest of Valentine, Nebraska. NSP is about the middle top of the state. I watched all the YouTube videos I could find to get acquainted with it before I got there. It has Bortle 1 skies and wide open viewing fields. Driving distance is about 750 miles each way, depending on which route you take.



Jim and Cory

Joining me out to this star party was fellow MAS member Jim Bakic and his nephew Cory. Though everyone is really friendly and willing to talk your ear off, I was really happy to have someone along I already knew.

Camping is allowed right out in the open fields. That made it easy for me to set up and stay with my fairly large scope and not take it down each evening. The terrain was more hilly than I expected from the videos, so I selected a flat hilltop area.

Out of about 350 people who attended, my choice of camping in a tent on the observing grounds was a minority. A greater number were in campers, or more likely had campers at one of the many other campgrounds at Merritt Reservoir, or stayed in hotel rooms. The days are hot, no trees, very windy, and prone to strong storms out in the open. The camp grounds had trees for shade and provided some shelter from the wind. We were lucky to avoid any big storms during our time out there.

As evening sets in, an optional supper is catered by the NSP hosts on the observing grounds. This is the usual time for when the really impressive daily door prize drawings are held. Evening announcements are made, and everyone wanders off to their scopes for the night.

We had arrived on Saturday, and the smoke from wildfires was thick. The smoke impacted viewing all week. What was supposed to be dark skies was this year was very mushy compared to what it could have been. Even though, the milky way was always more impressive than here. The best SQM reading I got was 21.77. At times, the clear sky area overhead was at only +/- 30 degrees. At times the milky way could be seen within a hand width of the horizon.

I did astro-imaging when I could, but switched off to visual eyepieces when imaging conditions weren't cooperating. My scope on a tripod was like a big sail in the evening breezes. Sometimes the scope shaking from the breeze was so bad that I couldn't get it to complete an autofocus routine. Jim had much better luck with his smaller refractor and was getting really nice images in only a few frames.



Mike with his C14 scope

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With so many other people nearby and talking with each other there was a lot to see that I hadn't seen before. So many scopes, big and small, reflectors, refractors, including a whole row of dob scopes large enough that need trailers to haul them. There is so much knowledge out there and everyone can't wait to tell you what they have for equipment and software. I had not seen NINA software in use before. I had never used sharpcap pro to do live stacking of images before your eyes.



Row of Dobs

We were a week early for the peak of the perseid meteors, but were happy to still see several each night, including a couple that streaked across the sky and went out in a flash.

Though night time astronomy is the focus of the trip, plan on what there is to do during the day. Getting an extra nap in, planning the night's observing list, wandering around the grounds talking with other people, making runs into town or to get ice, etc. I had solar panels to move around to charge my battery packs during the day. There is fishing, but I had plenty to do to keep busy.

Wednesday daytime was dedicated to activities at the Valentine high school. There were several presentations, including the wandering telescope project group, and the international dark sky group. There was a small swapfest, where I picked up a nice nagler eyepiece. Everyone submits their votes for an astro photograph contest. Plus another set of nice door prizes were drawn.

Though weather can be unpredictable, we were able to set up every single night. We were lucky. I had been told by others that had been to NSP that a couple clear evenings a week is average. Just like here I guess.

I will certainly be making the trip to Nebraska again.

When I left Nebraska, I rolled right into another Wisconsin Star Party. The Northwoods Starfest is held at Hobbs observatory at the Beaver creek Reserve. It is located about 4 miles north of Fall Creek, east of Eau Claire. The hosting club is the Chippewa valley Astronomical Society. The club hosts several meals and midnight snacks!

This is a more laid back star party, smaller in size, with 75 people signed up this year. Though a few people were do astrophotography, most were doing visual viewing. We all wander between every else's scopes and see what they are pointed at. Since this is a much more local Wisconsin crowd, many people already know each other. The first time I attended this star party I didn't know anyone, but many of the attendees go to other star parties, so I see them there too.

The Northwoods Starfest lasts just Friday and Saturday nights. Sadly only Friday was clear enough for a while to set up our scopes. Saturday morning was raining by breakfast time, so we all hung out in the buildings at the observatory grounds. There were a few people that brought stuff to sell swapfest style. I picked up a big set of 35 eyepiece filters, including an OIII filter I really wanted. Saturday dinner was held with absolutely pouring rain outside. Door prizes! Who doesn't like door prizes!

Since the rest of Saturday was going to be a bust for scoping due to unending rain, and I was in a tent, I sadly decided to call the trip off short. I will certainly be making the trip to Northwoods Star fest again.

by Mike Bauer

## In the Astronomical News

# Alien Astronomers on Hundreds of Nearby Exoplanets Could Have Spotted Life on Earth

Over the past 25 years astronomers have observed thousands exoplanets – planets that orbit stars other than the Sun. So, it stands to reason that alien astronomers on exoplanets may have observed Earth. Now, Lisa Kaltenegger, director of Cornell University's Carl Sagan Institute, and astrophysicist Jackie Faherty, a senior scientist at the American Museum of Natural History have created a catalogue of nearly 2000 nearby stars from which an observer on an exoplanet could spot Earth using the transit method. A transit can be observed when an exoplanet's orbit takes it in front of its star as viewed from Earth.

"We identified 1715 stars within about 300 ly from the Sun that are in the right position to have spotted a transiting Earth from around 5000 years ago, a period that roughly corresponds with the rise of humanity," Kaltenegger tells "An additional 319 stars will enter this special vantage point in the next 5000 years."

The duo imposed a further limiting distance of 100 ly to highlight worlds that could have received human-transmitted radio waves. Estimating that around 25% of stars are orbited by potentially habitable rocky exoplanets, the scientists calculated the number of Earth-like worlds that fall within these distances.

"Within the 300 ly there should be about 500 potential habitable worlds, within 100 ly you find 29 planets that radio waves will have already washed over". We already know of seven exoplanets in the habitable zones of their stars – orbits that favour the emergence of life.

"Who knows if life evolved there too, but if it did, and it had a similar technology level that we have, then such nominal alien observers could have spotted or will spot life on our own world."

The duo's work marks the first time that researchers have considered the Earth-transit vantage point as a changing system. This has been made possible by a recent data release from European Space Agency's Gaia space telescope, which is creating a 3D image of the Milky Way.

"There have been other phenomenal catalogues that preceded Gaia but no other observatory reached the same quantity and depth," explains Faherty. "Gaia is capable of mapping the lowest

mass stars – the M class dwarfs – in tremendous detail and they are the most numerous stars in the galaxy."

Faherty explains that instead of asking the question "What can see us right now?" Gaia allowed the duo to "wind the clock backwards and forwards" to see where the stars' motions have taken them and how long they have been able to occupy the perfect seat to see Earth as a transiting planet.

Amongst the systems that have enjoyed prime Earth-viewing time in the past is Ross 128, which is 11 ly from Earth. "Any civilization with our level of technology could have seen us already on Ross

128b but lost that vantage point about 900 years ago. Would anyone have concluded that there was intelligent life on Earth 900 years ago?" asks Kaltenegger.

The Trappist-1 system with its seven exoplanets will enter the Earth Transit Zone in around 1640 years. It is about 45 ly away and at least four of its

exoplanets occupy that system's habitable zone and will remain in front row seats for around 2300 years.

Whilst Earth moves into view for these exoplanets, astronomers continue to perfect the tools they use to discover and investigate planets outside the solar system. Playing a key role in this work will be the James Webb Space Telescope (JWST), which should launch later this year.

"If there are worlds around any of these stars, then we can use JWST to try and glean information about their atmospheres," says Faherty.

Whilst we are searching for those markers with increasingly sophisticated equipment, it is enthralling to entertain the idea that other life forms could be simultaneously searching for us.

"To me this research embeds us in not only space but also in time, telling us that we are lucky to find the exoplanets we do because our cosmic vantage-point also changes with time and will be lost and gained for different worlds," Kaltenegger concludes. "There are 2043 objects in the night sky that could have already spotted us as a transiting world. If there were life on any planets around them, I wonder what they would think of us?"



*Credit: Open Space/American Museum of Natural History*

## Adopt a Telescope Program - Signup Sheet

Adopter	Scope	Location
<b>1</b> Sue Timlin/John Hammetter	18" F/4.5 Obsession	Wiesen Observatory
<b>2</b> Steve Volp	12.5" F/7.4 Buckstaff	B Dome
<b>3</b> Robert Burgess	12.5" F/9 Halbach	A Dome (Armfield)
<b>4</b> Russ Blankenburg	9-1/4" F/10 Celestron	Albrecht Observatory
<b>5</b> Jeff Kraehnke	14" F/7.4 G-scope	Z Dome
<b>6</b> Lee Keith/Tom Kraus	12" F/10 LX200 EMC	Tangney Observatory
<b>7</b> Colin Boynton	10" F/6.3 LX200	Ray Zit Observatory
<b>8</b> Tamas Kriska	Stellarvue SVQ 100 F/5.8	Jim Toeller Observatory
<b>9</b> Paul Borchardt	Solar scope	SkyShed POD

### At Your Service

#### Officers / Staff

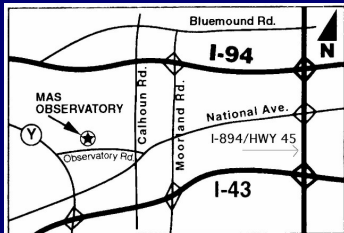
President	Tamas Kriska	414-581-3623
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Treasurer	Sue Timlin	414-460-4886
Secretary	Agnes Keszler	414-581-7031
Observatory Director	Paul Borchardt	262-781-0169
Asst. Observatory Director	Russ Blankenburg	262-938-0752
Newsletter Editor	Tamas Kriska	414-581-3623
Webmaster	Gene Hanson	262-269-9576

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Jill Roberts	262-765-7092
Clark Brizendine	414-305-2605
Jason Doyle	414-678-9110
Dennis Roscoe	608-206-0909
Lee Keith	414-425-2331
Jim Schroeter	414-333-3679
Gabe Shaughnessy	262-893-4169
Steve Volp	414-751-8334
Mike Wagner	262-547-3321

#### September Keyholders

09/04	Jim Bakic	414-303-7765
09/11	Russ Blankenburg	262-938-0752
09/18	Paul Borchardt	262-202-8029
09/25	Brian Ganiere	414-961-8745



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