



## December Meetings

Traditionally, in December we don't have Board and Membership Meetings. We will return to the usual schedule of third Mondays in January.

However, the **First Wednesday meeting** will be held in person at the Observatory on December 1<sup>st</sup> from 7:30. New members are especially encouraged to attend this meeting. It is a chance to gain hands-on experience, 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, December 8<sup>th</sup> at 7 PM through Zoom videoconference. The invitation will be sent out before the meeting.

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.

## Astronomical Events of the Month

**Dec 4:** Solar eclipse always takes place either about two weeks before or after a lunar eclipse. So, following the November 19 Lunar eclipse there will be a total solar eclipse. Unfortunately, only visible from Antarctica.

**Dec 7:** Venus will reach its greatest brightness of its 2021-2022 evening cycle. It will shine at magnitude -4.7, very close to the brightest it ever gets (-5).

**Dec 13/14:** Geminid Meteors. One of the best meteor showers of the year, the Geminids peak on the night of December 13 and early morning hours of December 14, 2021, but will be visible from December 4 through December 20.

**Dec 19:** Micro Full Moon. The 2021 December Full Moon is a Micromoon—it occurs when the Moon is closest to its apogee. One of the traditional names for the Full Moon in December is Cold Moon.

**Dec 21:** Winter Solstice will take place at 15:59 UTC. It is the shortest day of the year in the Northern Hemisphere. In the Southern Hemisphere, it is the longest day.



## Membership Renewal

The Membership renewal period is underway. There are several renewal methods you can choose from. If you prefer to do it online just follow this link:

<http://milwaukeeastro.org/membership/masRenewal.asp>

The renewal form can also be printed out and send it back along with a check made payable to The Milwaukee Astronomical Society.

If you are wondering whether you need to renew your MAS membership, simply look for your name on this list:

<http://milwaukeeastro.org/membership/membersRenewed.asp>

If your name is there, your membership is active through 2022.

Thank you for being a member of the Milwaukee Astronomical Society.

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## Observatory Director Report

The Quonset and "A" Building have been winterized for the up coming cold season.

The furnace should be always left on now with the thermostat set to 40° when the building is not occupied.

The installation of the new ZWO ASI2600 Camera on the "F" Scope is complete, and the scope is back in use. The upgrade went smoothly and came in on budget.

The "G" Scope on the other hand has had a problem obtaining a threaded adapter that connects the off-axis guider to the scope's focuser. The only commercially made 68mm to 54mm ring adapter has the wrong thread pitch on the 54mm ID thread. A solution was designed, but during the modifying of the adaptor there was a problem that ruined the adapter making it impossible to use. Another adapter has been ordered and will in early this week. This is the only piece needed to complete the assembly of the ZWO ASI6200 Camera which should be done by the weekend. The adapters cost \$29 each, which have been the only added purchases to the original budget.

Respectfully Submitted,  
Paul Borchardt, Observatory Director

## Treasurer's Report

<b>\$6,881.60</b>	<b>Starting Balance as of 10/16/2021</b>
	<b>Expenditures</b>
\$26.44	PayPal fees
\$53.77	WE Energies
\$80.21	TOTAL Expenditures
	<b>Revenue</b>
\$75.00	Private Donations
\$1,418.00	Membership dues
\$205.00	Grants
\$1,698.00	TOTAL Revenue
<b>\$8,499.39</b>	<b>Ending Balance as of 11/13/2021</b>

Respectfully Submitted,  
Sue Timlin, Treasurer

## Membership Report

Since the last Report we received 2 new membership application. We welcome Mary Harris & Family and Whitney Emmerich. The total number of active members is 231.

Respectfully Submitted,  
Jeff Kraehnke, Committee Chair

## Minutes

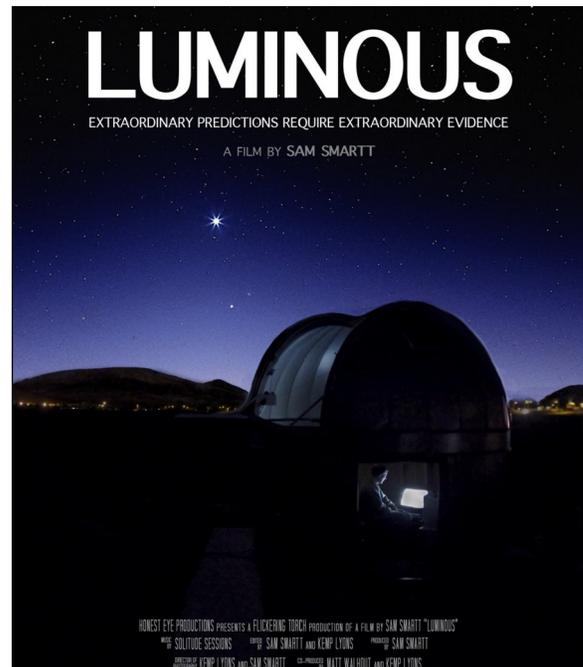
The last Board Meeting was held via Zoom videoconference on November 15<sup>th</sup>. Meeting was called to order at 7:00 PM by Tamas Kriska President.

**Minutes, Treasurer's and Observatory Director's Reports** electronically submitted ahead of the meeting were approved. **Membership Committee Report** was submitted electronically ahead of the meeting. Membership application of Chris Voelz & family, John Keese, Jasmine Rocha & family, Alicia Dendura & family, and Mary Harris & family were approved. **Old Business** – *Display box*: Coming soon. *Public Nights*: The season is finished. The October 1<sup>st</sup> event was partly cloudy, but successful. The Club received \$75 donation. The October 29<sup>th</sup> night was totally cloudy, but we still had about 10-15 guests. *Equipment upgrade*: The conversion of G-scope is in progress. The Load Star guider camera of the old F-scope has been sold for \$400. *Meetings and potential internet installation*: The discussion about holding the Membership Meetings via Zoom or in person has been continued and will be continued as well as the discussion about internet. The two topics are not necessarily tied together. The general attendance of the presentations has kept declining in the past ten years which questions the need of monthly Membership Meetings.

**New Business** – *No new business*.

**Announcement** – The next meeting will be on January 15<sup>th</sup>, 2022, via Zoom videoconference.

**Program** – Viewing the movie Luminous followed by a discussion with the director Sam Smartt.



Respectfully Submitted,  
Agnes Keszler, Secretary

## Image Of the Day Award

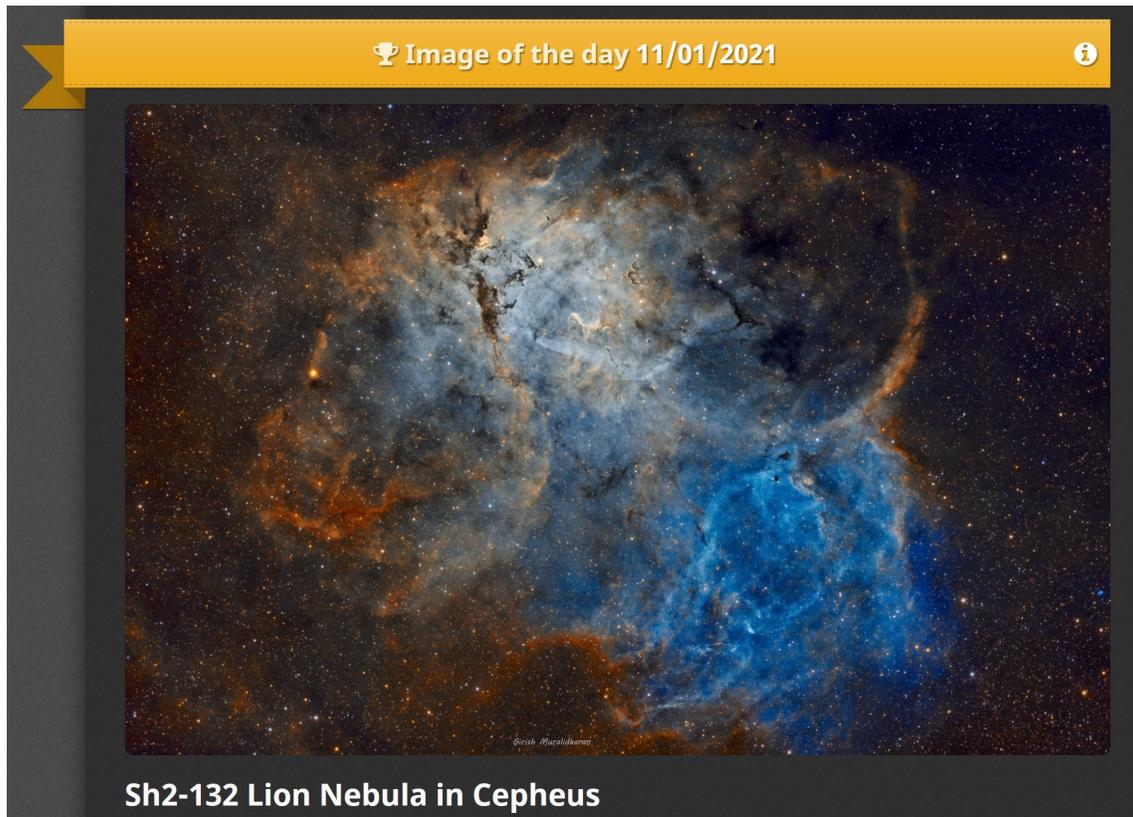
**Congratulations to Girish Muralidharan** for his stunning rendition of the Sh2-132, the Lion Nebula, that won an Image of the Day award on Astrobin! <https://www.astrobin.com/jwyxyc/>

As Girish describes his image:

"Sharpless 2-132 is a very faint emission type nebula on the Cepheus/Lacerta border. It lies at a degree southeast of Epsilon Cep, and has a size of about 40 arc minutes. It is estimated to be about 10,000 to 12,000 light years away... but this is no more than an estimate. It's a well studied region as well, with lots going on as you can see in the annotated image. I went a little bolder in color palette here and the starless version brings out more subtle details to the eyes."

Image acquisition details:

Takahashi TSA 120 telescope on Astro-Physics Mach1AP GTO CP3 mount with ZWO ASI 2600MM Pro camera through Astrodon 3nm Ha, SII, and OIII filters. Processed with Pleiades Astrophoto PixInsight



## Lunar Eclipse

On November 18-19 an almost total (99.1%) Lunar eclipse has occurred. Despite the wee hours some of our members were able to image the event.



## In Memoriam Scott Laskowski 1960-2021

It is with sadness that we learned that longtime MAS member, Scott Laskowski, passed away on November 26<sup>th</sup> at the age of 61.



Scott joined the club in October of 1986 and the MAS remained a very important part of his life for the next 35 years! He was very active at the Observatory. He has been a grounds keeper, contributed to the construction of the front garage, helped rebuild the old "tool shed" in the back of the lot, assisted with construction work of Z-dome, and has helped at many Open Houses. He also served as a keyholder for almost two decades. His observing interests included grazing and standard occultations, making nightly magnitude estimates of Beta Lyrae, and eclipses. He was a board member for one term starting in 1998. But his biggest contributions were as the MAS librarian and club historian, which he continued until his health severely limited his mobility.

I got to know Scott very well through many phone calls, and went to visit him at his home in Greenfield a couple of times to receive MAS historical photos and documents. He was very passionate about the club's history and had to personally hand me any material he possessed.



One very memorable story he told was when he got to fly with Scott Jamieson in his small plane and they flew over Yerkes Observatory.

Scott's interest in astronomy dates to at least the sixth grade when, with a 60-mm refracting telescope set up on a sidewalk, he showed passers-by a 30% partial eclipse. He was a volunteer at Yerkes Observatory with the CARA and Woodstock (IL) school programs.

Though he was the club historian, it was difficult to find pictures of Scott himself. But here are two of them.



Scott at the eyepiece of the 40" refractor at Yerkes.



Scott is volunteering at a star party organized by MAS for the summer school at Yerkes in 2011.

Scott will be missed by all who knew him.

Gene Hanson

## In the Astronomical News

### The Earth Is Inside an Enormous Cosmic Tunnel

Scientists are proposing that Earth is situated within an enormous magnetized tunnel surrounding the entire solar system.

As detailed in a new study accepted for publication at the *Astrophysical Journal* researchers at the University of Toronto's Dunlap Institute, National Research Council Canada, and the University of British Columbia, this would explain the presence of two large, highly magnetic filamentary (rope-like) structures in the Milky Way with unexplained origins.

"Astronomers have long been puzzled by what these structures are," said Dr. Jennifer West, Research Associate at the Dunlap Institute and first author on the report in an email to Motherboard.

"I hope this is a step towards understanding the magnetic field of our whole Galaxy, and of the Universe."

The North Polar Spur and the Fan Region have long been known as two of the brightest radio-emitting gas structures in the sky—but since their discovery in the 1960s, their exact identity has been the source

of perplexion among the scientific community. Though invisible to the human eye, NPS and the Fan Region emit strong magnetic radio waves that are large, and highly visible through a radio telescope, enveloping the solar system.

"If our eyes could see radio light they would fill most of the sky," West said.

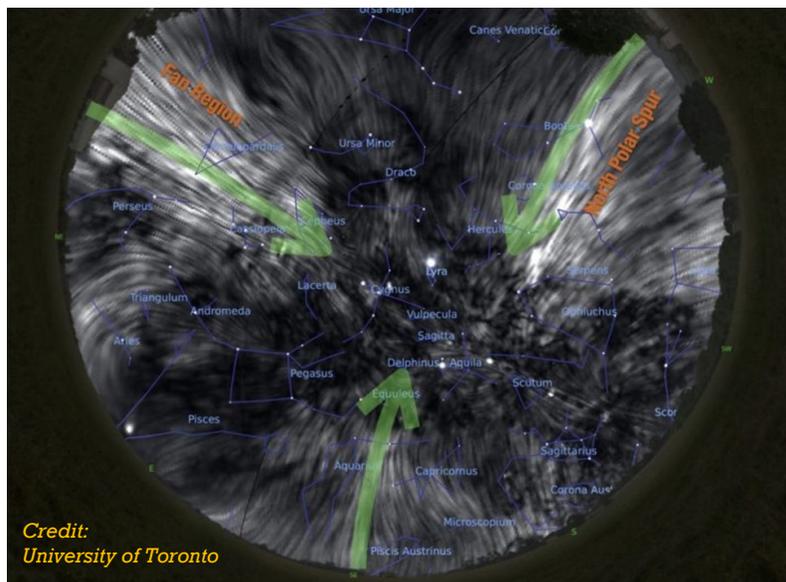
Using a computer model that simulates what's visible through a radio telescope, West and her colleagues mapped out the length and position of both structures, ultimately piecing together a theory that the two structures are not separate, as they've long been considered, but are part of the same, tunnel-like object.

"These have been a mystery to astronomers for the past 50 years and we are the first to propose a model that explains these structures as one single object that surrounds us," West said. "Most previous work has studied them individually, as two separate and distinct objects."

But landing on this conclusion was only possible when West reframed her vision of the galaxy—literally. While most researchers look at maps of the Milky Way with the North Pole at the top and the galactic center in the middle, West told Motherboard that redrawing this map from a different perspective, with a different center point, made viewing the connection between the NPS and the Fan Region easier. Because the structures are too far away to ever possibly visit by spaceship, she relies primarily upon computer models and telescopes for her assessments. West likens the work to drawing a three-dimensional rendering of your own house while stuck on your couch, unable to leave.

So, when she thought to reorient the galaxy map, West said that something clicked.

"Ever since I first saw a map of the sky as a radio telescope sees it, I have been fascinated by these structures and wondered what they are, and what is causing them," West says. "The first time I made a radio map of



Credit:  
University of Toronto

our Galaxy using a different center point was really a big 'aha' moment for me."

"I love to spend time looking up at the stars in the sky and thinking about the vastness of the universe," she added. "I really wish I could put on some radio glasses so that I could see this giant tunnel. But it reminds me that there is so much more out there than what we can see."

According to the paper, the team plans to develop the model further and conduct more research, in the hopes that it can shed more light on the massive tunnel that may surround us, and other filament structures that are being revealed throughout the universe with new observations.

Audrey Carleton vice.com

## 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

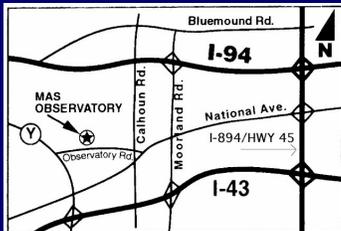
President	Tamas Kriska	414-581-3623
Vice President	Jeff Kraehnke	414-333-4656
Treasurer	Sue Timlin	414-460-4886
Secretary	Agnes Keszler	414-581-7031
Observatory Director	Paul Borchardt	262-781-0169
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Newsletter Editor	Tamas Kriska	414-581-3623
Webmaster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

#### December Keyholders

12/04	Mike Bauer	262-894-1253
12/11	Brian Ganiere	414-961-8745
12/18	William Gottemoller	262-442-3686
12/25	Observatory Closed for Christmas	



### MAS Observatory

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[www.milwaukeeastro.org](http://www.milwaukeeastro.org)