



August, 2018

## September Meeting

The Milwaukee Astronomical Society will hold its next meeting on **Friday, September 21<sup>st</sup>, 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. Every Member is welcome. During the second hour **Gene Hanson** will present an updated talk on the History of the Milwaukee Astronomical Society. This is a good chance to learn about who we are as a Club and where we came from.

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

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## MAS Campout



The 2018 campout will be held on the weekend of **September 14-16** (Friday to Sunday) in the Nicolet Forest on the property of Tom Maxwell and his wife Tony. The address is: **8604 Atkins Road, Hiles, WI 53235.**

On the area there is electricity, water, and a port-a-john available to use. Otherwise bring everything you'd want/need to camp out. People are asked to bring a dish to pass as it makes a nice pot luck at dinner time. Snacks are well kept throughout the weekend in a screened-in gazebo. There's a small Weber there and a tripod fire pit grate as well as about 6-8 hot dog sticks available to use.

Please RSVP on the Google group so people can get an idea on how many will be coming. This will help in estimating how much of a dish to bring.

## Public Nights

The beautiful weather on August 17<sup>th</sup> drew a big crowd of visitors to the Observatory to attend the third Public Night of the season. The presenter Sue Timlin gave her talk about the Moons in a packed Quonset, and repeated it later. Our guests formed long lines at the scopes pointed to the Moon, the visible planets, and some bright deep sky objects. The children were offered to collect stickers at every station, and doing so, they were rewarded with a Milky Bar.



The next Public Night event will be on Friday, September 7<sup>th</sup> from 7:00 to 10:00 PM. The topic is the Ice Giants. If you are willing to participate with manning a telescope, giving a tour of the Observatory, or helping in the parking lot, please join us.

## Observatory Report

Work continues to move along on this summer's projects. In the B-dome, the painting of the inside of the dome is done and the painting of the interior walls has been started.

The outside brick work is being tuck pointed. The outside walls of the Quonset building are being pressure washed in preparing for paint.

The design of the bridge for G-scope and the new riser are finished and the materials for both have been ordered and will be in this week. Machining of these parts will begin this week and the parts should be ready for welding shortly.

Several members have been quite active imaging the planets this last month and have shown some very good pictures for their efforts.

Respectfully Submitted,  
Paul Borchardt, Observatory Director

## Website/Social Media Report

Gene Hanson Webmaster summarized the recent months activities on the Website, Facebook and Instagram.

The report can be found on the next page.

## Treasurer's Report

<b>\$11,132.71</b>	<b>Starting Balance as of 07/07/2018</b>
	<b><u>Expenditures</u></b>
\$2.85	PayPal fees
\$115.99	Periodic expenses
\$13,247.00	Observatory expenses
\$43.99	Other expenses
\$40.65	WE Energies
\$36.00	Water/Sewer
\$13,486.48	TOTAL Expenditures
	<b><u>Revenue</u></b>
\$13,747.00	Private donations
\$148.00	Membership dues
\$10.00	Key deposits
\$13,905.00	TOTAL Revenue
<b>\$11,551.23</b>	<b>Ending Balance as of 08/11/2018</b>

Respectfully Submitted,  
Sue Timlin, Treasurer

## Meeting Minutes

The meeting was held on August 13<sup>th</sup> at the MAS Observatory, New Berlin and was called to order at 7:02PM by Tamas Kriska President.

**Minutes** electronically submitted ahead the meeting were approved.

**Treasurer's Report** electronically submitted ahead the meeting and was approved.

**Observatory Director's Report** electronically submitted ahead the meeting was approved.

**Membership Committee Report** was electronically submitted by Jeff Kraehnke Committee Chair ahead the meeting. Membership application of Sivakumar Shanmugam & family, and John Pfannerstill were approved.

**Old Business** – *Motorized focuser*: The new focuser to the A-scope has not been installed yet. *Maintenance plan*: B and A buildings were pressure washed. B building has been painted both inside and outside. The door to B dome was repaired and does not need to be replaced.

*Strategic Planning*: Scott Berg gave a summary of the first meeting. A financial subgroup was set up. Next meeting is on August 25<sup>th</sup> *G-scope*: Paul has started working on the bridge across the fork. The fork will be degreased and painted to matching color with the powder coated bridge. *Yard faucet*: Paul followed up S&K Pump and Plumbing Co, but the quote for a new hydrant has not arrived. Other company should be found because the hydrant must be replaced. *Tree removal*: The quote still has not arrived.

**New Business** – *The pressure tank* needs to be pressurized. *A new projector* was donated by Jason Doyle and should be installed. *The countertop in the B dome* is worn out and should be replaced. A volunteer would be highly appreciated to work on a new one. *The Program Chair* position is vacant. We need to figure out a sustainable way to find speakers for the General Meetings that would generate interest. Possibilities were discussed.

Respectfully Submitted  
Agnes Keszler, Secretary

## Membership Report

Since the last Report we received three renewals and two new membership applications and would like to welcome Sivakumar Shanmugam & family, and Donald Kraling.

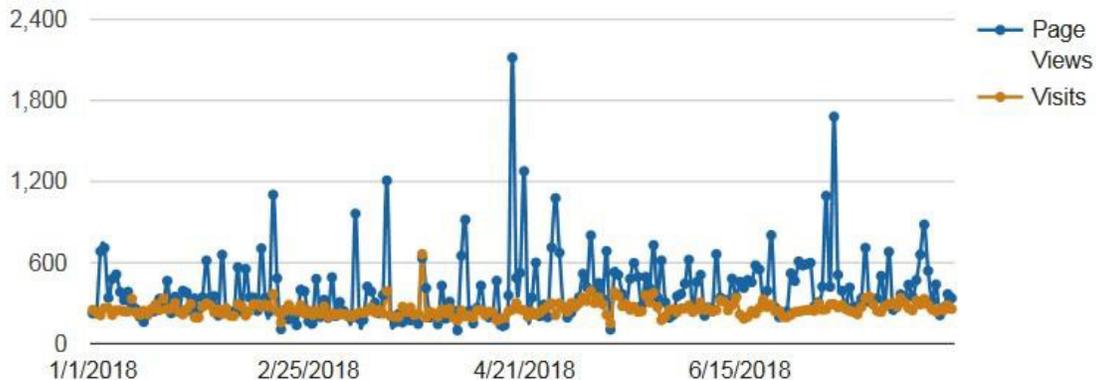
We now have 171 active members.

Respectfully Submitted,  
Jeff Kraehnke, Committee Chair

## Website/Social Media Report

### Website

There's not a lot to report on the website other than it continues to gain popularity over time, albeit at what is a snails pace. In the graph of 2018 activity, a "Visit" is someone seeing any page on our website so that always results in one "Page View." But if that person then clicks through to other pages, this adds to that count.



As far as content, the number of images I'm posting has been increased considerably. Not long ago I reported that we had posted the 500<sup>th</sup> image on the site – this after we had less than 100 images in 2013. I just posted the 600<sup>th</sup> image!

### Facebook

Recently, Jeff Kraehnke has taken a stab at posting and achieved considerable success. He discovered they have a publishing tool that allows you to write a posting ahead of time and decide exactly what time the posting will be published on the page. This is particularly handy as we always want to post the Open House event, but don't want to do it either too early or too late.

The other insight Jeff has made is that no matter what you're trying to announce, it goes over better (more likes, better reach) when paired with a great astronomical image and as we all know, the MAS is not lacking in that department!

And speaking of great images, the posting of Chad Andrist's "Amateur Astrophoto of the Day" image. It achieved a "reach" (how many people got to see the image) more than 3 times of any previous posting and 54 likes, edging out the next most popular which was 41. Currently, the site has been "liked" by 550 Facebook users.

### Instagram

Derek Rickert continues to administer our Instagram account and continues to make progress. He's posting at least one to two images per week and usually gathering 20 or more likes. And he has managed to already have 107 followers of the account.

Another thing that is evolving is the updating of the history of the club. I will be reporting more on this hopefully next month. And I have pretty much finished another historical presentation, which will cover the years of 1972-1990, so mostly covering the Z Dome and the Z Scope.

**What's in the Sky**

For sky updates:

S&T: This Weeks Sky At A Glance

Astronomy Magazine: The Sky This Week

 **Instagram**

 **Like us on Facebook**



**New Im**  
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Gene Hanson  
Webmaster

## Observatory Maintenance

We have accomplished a lot during the past month. The entire B-dome was painted both inside and outside. The floor was also recoated. The A building got a fresh paint as well.

In addition, we started to prepare the Z dome to accommodate the new mount. The fork was degreased and sanded to get ready to be painted.

Shrubs from the parking lot trimming were burnt.



## Summer Picnic

The Annual Summer Picnic was held on the hot Saturday afternoon of August 4<sup>th</sup>. About 30 Members enjoyed fellowship, shared stories and tasted delicious food on the yard of the Observatory. The air conditioned Quonset, where dessert and ice-cream were served, provided refuge for those who found the outside temperature too hot.



## In the Astronomical News

### The Milky Way's Long-lost Sibling Finally Found

Scientists at the University of Michigan have deduced that the Andromeda galaxy, our closest large galactic neighbor, shredded and cannibalized a massive galaxy two billion years ago.

Even though it was mostly shredded, this massive galaxy left behind a rich trail of evidence: an almost invisible halo of stars larger than the Andromeda galaxy itself, an elusive stream of stars and a separate enigmatic compact galaxy, M32. Discovering and studying this decimated galaxy will help astronomers understand how disk galaxies like the Milky Way evolve and survive large mergers.

This disrupted galaxy, named M32p, was the third-largest member of the Local Group of galaxies, after the Milky Way and Andromeda galaxies. Using computer models, Richard D'Souza and Eric Bell of the University of Michigan's Department of Astronomy were able to piece together this evidence, revealing this long-lost sibling of the Milky Way. Scientists have long known that this nearly invisible large halo of stars surrounding galaxies contains the remnants of smaller cannibalized galaxies. A galaxy like Andromeda was expected to have consumed hundreds of its smaller companions. Researchers thought this would make it difficult to learn about any single one of them.

Using new computer simulations, the scientists were able to understand that even though many companion galaxies were consumed by Andromeda, most of the stars in the Andromeda's outer faint halo were mostly contributed by shredding a single large galaxy.

"It was a 'eureka' moment. We realized we could use this information of Andromeda's outer stellar halo to infer the properties of the largest of these shredded galaxies," said lead author D'Souza, a postdoctoral researcher at U-M.

"Astronomers have been studying the Local Group -- the Milky Way, Andromeda and their companions -- for so long. It was shocking to realize that the Milky Way had a large sibling, and we never knew about it," said co-author Bell, U-M professor of astronomy.

This galaxy, called M32p, which was shredded by

the Andromeda galaxy, was at least 20 times larger than any galaxy which merged with the Milky Way over the course of its lifetime. M32p would have been massive, making it the third largest galaxy in the Local Group after the Andromeda and the Milky Way galaxies.

This work might also solve a long-standing mystery: the formation of Andromeda's enigmatic M32 satellite galaxy, the scientists say. They suggest that the compact and dense M32 is the surviving center of the Milky Way's long-lost sibling, like the indestructible pit of a plum.

"M32 is a weirdo," Bell said. "While it looks like a compact example of an old, elliptical galaxy, it actually has lots of young stars. It's one of the most compact galaxies in the universe. There isn't another galaxy like it."

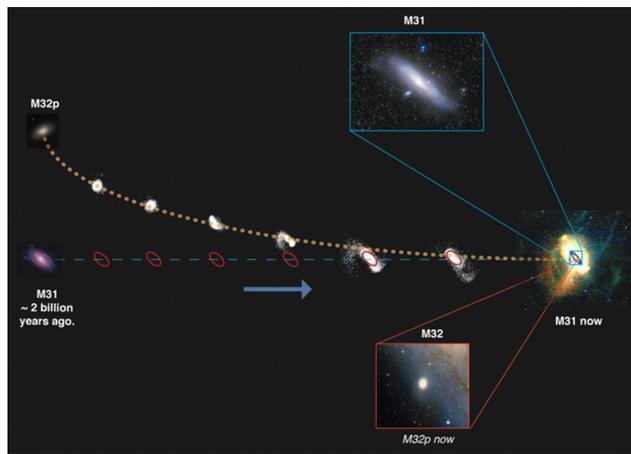
Their study may alter the traditional understanding of how galaxies evolve, the researchers say. They realized that the Andromeda's disk survived an impact with a massive galaxy, which would question the common wisdom that

such large interactions would destroy disks and form an elliptical galaxy.

The timing of the merger may also explain the thickening of the disk of the Andromeda galaxy as well as a burst of star formation two billion years ago, a finding which was independently reached by French researchers earlier this year.

"The Andromeda Galaxy, with a spectacular burst of star formation, would have looked so different 2 billion years ago," Bell said. "When I was at graduate school, I was told that understanding how the Andromeda Galaxy and its satellite galaxy M32 formed would go a long way towards unraveling the mysteries of galaxy formation."

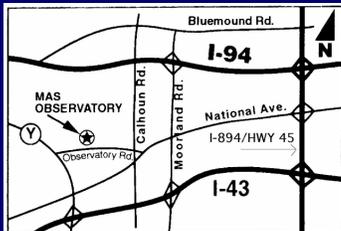
The method used in this study can be used for other galaxies, permitting measurement of their most massive galaxy merger, the researchers say. With this knowledge, scientists can better untangle the complicated web of cause and effect that drives galaxy growth and learn about what mergers do to galaxies.



*The process of shredding of the large galaxy M32p by the Andromeda galaxy which eventually resulted in M32 and a giant halo of stars. Credit: Richard D'Souza/Wei-Hao Wang/AAS/IOP/University of Michigan.*

## Adopt a Telescope Program - Signup Sheet

	<b>Adopter</b>	<b>Scope</b>	<b>Location</b>
<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	18" F/4.5 Obsession	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>	Herman Restrepo/Colin Boynton	8" F/11 Celestron EdgeHD	Ray Zit Observatory
<b>8</b>	Tamas Kriska	14" F/1.9 F-scope	Jim Toeller Observatory
<b>9</b>	Paul Borchardt	Solar scope	SkyShed POD



### MAS Observatory

18850 Observatory Rd  
New Berlin, WI 53146

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

## 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

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
Lee Keith	414-425-2331
Jeff Kraehnke	414-333-4656
Jim Schroeter	414-333-3679
Sue Timlin	414-460-4886
Steve Volp	414-751-8334

### September Keyholders

09/01	Russ Blankenburg	262-938-0752
09/08	Paul Borchardt	262-781-0169
09/15	Tom Schmidtkunz	414-352-1674
09/22	Sue Timlin	414-460-4886
09/29	Paul Borchardt	414-781-0169