



# Focal Point



February, 2014

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## The February Membership Meeting

The next General Membership Meeting of the MAS will be held on Friday, **February 21<sup>st</sup>**, at UWM, Physics building, at 1900 E Kenwood Bld. (parking available in the Science Parking Lot.). The room 133 is located next to the Manfred Olson Planetarium entrance. The meeting will start at 8:00 PM, immediately following the Board Meeting.

The Meeting will be comprised of two parts, the typically 10-15 minutes long business meeting part followed by a planetarium presentation. For the second part we will move over to the Manfred Olson Planetarium. The program will be the more technical version of the new planetarium show called "Colorful Nebula", that will be adjusted specifically for MAS membership. The main focus of the program will be to learn about the beautiful clouds in space known as

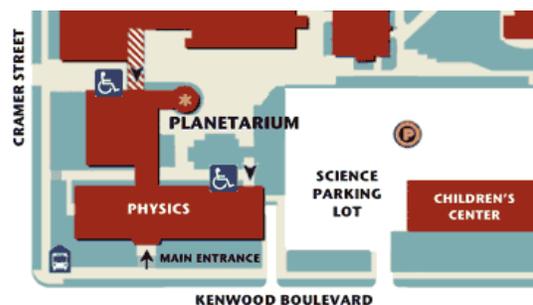
A private program for the MAS

# Colorful Nebula

Friday, February 21, 2014  
at 8 PM

UWM  
Manfred Olson Planetarium

nebulae. We will also get a better understanding of why nebulae are so colorful. Famous nebulae such as the Eagle and Cat's Eye will be featured.



The winter meetings of the MAS from January through April will be held at the University of Wisconsin-Milwaukee Physics building located at the corner of Kenwood and Cramer. Starting from May the meetings will return to the MAS Observatory in New Berlin.

## Treasurer's Report

The MAS has spent money on November Meeting speaker fee, magazine subscriptions, WE Energies bills, stamps, Christmas Party supplies and payments for City of New Berlin, which totaled \$744.89. Additionally, \$7774.88 was spent on the Z-scope rebuilding project. See the details below. To cover this expense \$3500 was taken from the Dark Site Moving Found and \$4700 from Protective Life found.

The income from Member fees, key deposits, Astronomy calendar sale and donations was \$825.37.

Currently the checking account balance is at \$7839.57. The Albrecht fund balance 4714.81. The Endowment Found is at \$86303.23. Investco yielded \$836.00, and it is currently at \$9112.00.

Respectfully Submitted,  
Russell Chabot, Treasurer

## Z-project expenses

Major item acquired for the project:

Camera and focusing system - \$6795

24" monitor - \$199.00

7 port USB hub - \$39.95

USB video card - \$79.99

Rotary table - \$289.95

Handpad autoguider link - 370.00

Additionally 2 TV monitors , 2 video cameras, 2 lenses, and some miscellaneous hardware were donated worth of \$800.

## Meeting Minutes

**Held** on January 17<sup>th</sup> at UWM, Physics building. The meeting was called to order at 8:03 PM by President, Scott Jamieson.

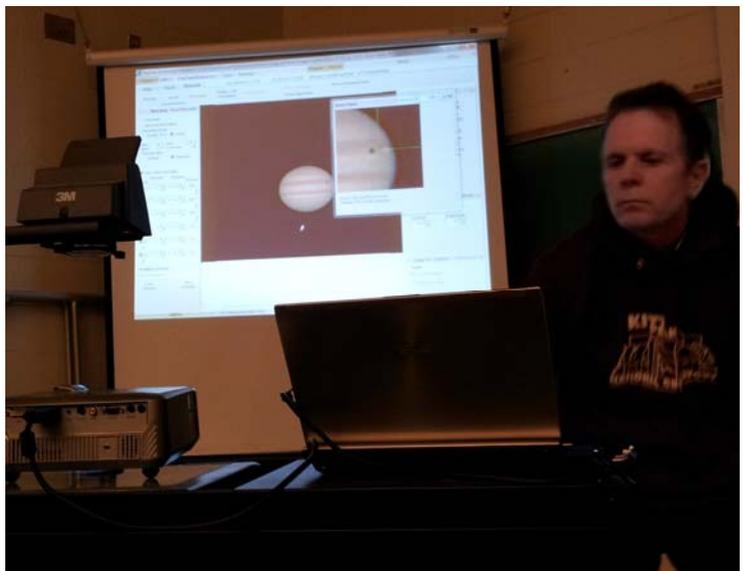
**Minutes** from the November General Membership Meeting, was read by Secretary and approved.

The **Treasurer's Report** was read by Treasurer, Russell Chabot. Copy attached.

**Observatory Director's Report** - Gene received old documents from the former Observatory Director Gerry Samolyk including official correspondence and keyholder sheets. Gene is still working on updating the MAS website. For detailed list of changes see the article on page 5.

**Old Business** - Scott gave a powerpoint presentation about the progress on Z project. He suggested to buy a less temperature sensitive desktop with a Windows 7 operation system. The snow blower was repaired and is in working condition. Thanks to Jill Roberts Assistant Observatory Director for getting rid of the ice from the drive way.

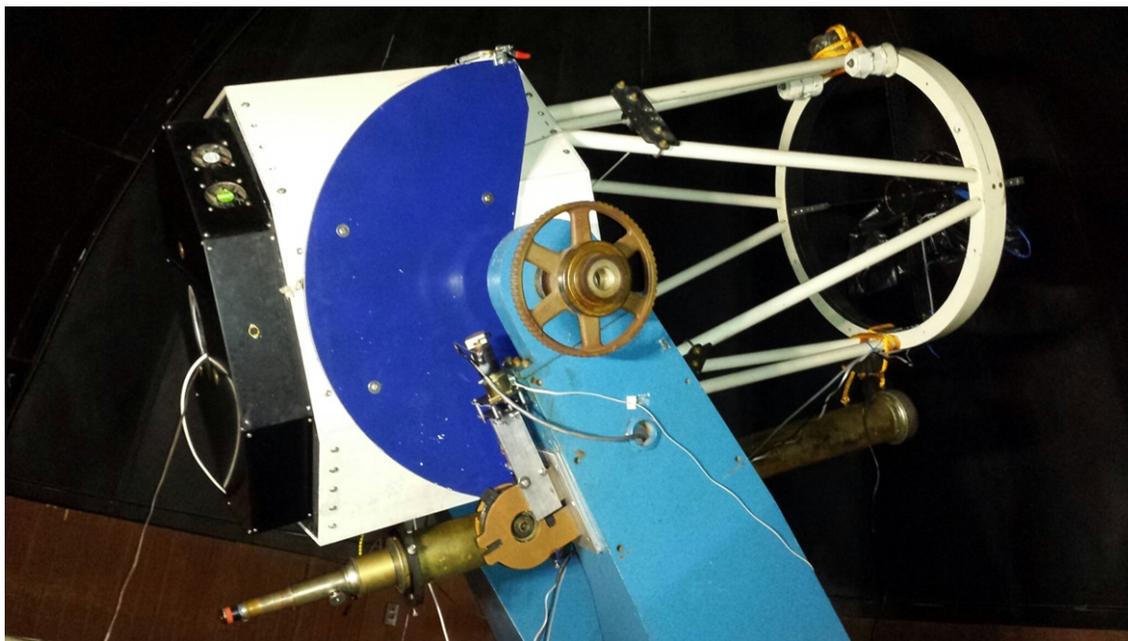
**The Program** Lee Keith gave a talk about High Resolution Planetary Imaging.



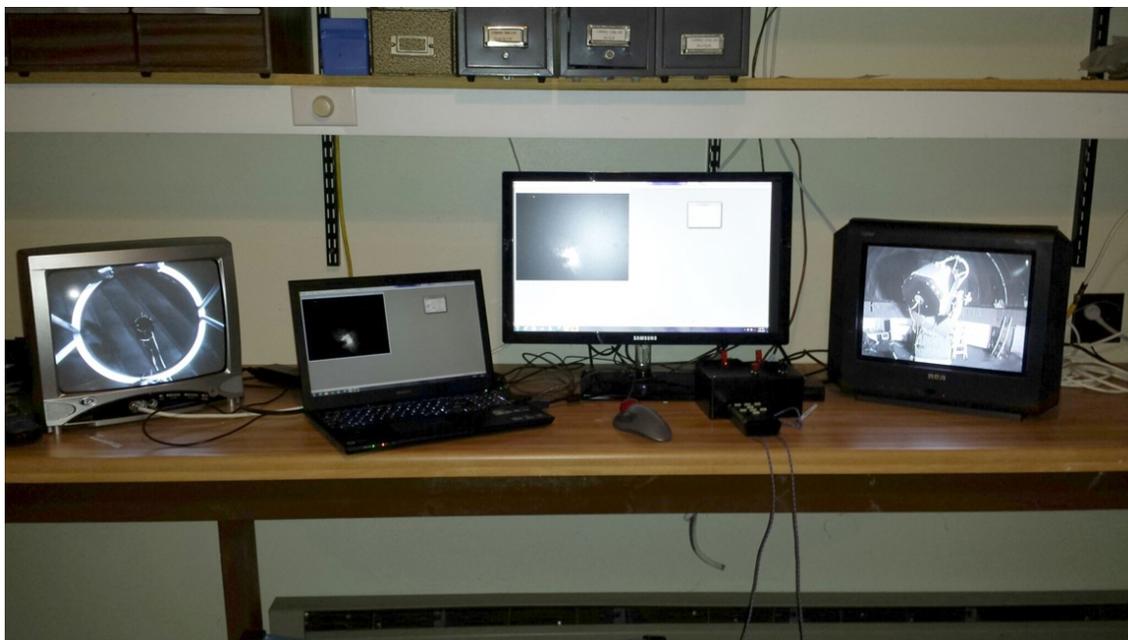
The meeting was adjourned at 9:02 PM

Respectfully Submitted,  
Agnes Keszler, Secretary

## Z-scope rebuilding project update



An overall view of the optical assembly of Z scope. The new declination drive is visible to the left and the location of the upper assembly holding the focuser and camera is to the right. Note that the entire camera/ filter is in the optical path and amounts to a very large obstruction but is actually a smaller percentage of the total mirror area than many modern telescopes.

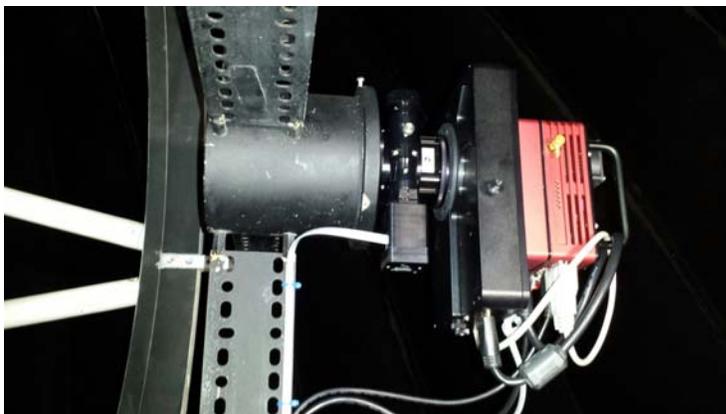


The control center is set up in the library of the Z dome designed to control all of the functions for operation of Z scope. This includes dome rotation, video monitoring of the dome environment for security, camera and telescope control for tracking and imaging. After the operator has opened the dome and aligned the telescope on one star, everything can be done from here until shutdown. This will leave the dome completely dark during exposures yet enable monitoring between exposures of the telescope/dome alignment. It also makes a huge difference in the comfort of the operator.



A close up of the declination drive (to the left) showing the motor and coupler on top and the Rotary table gear box on the bottom. On this gear box is a 2.4 inch drum with a cable wrapped around it and going all around the large sector wheel (blue) to form the final drive. This type of drive is called a wire drive and is very good for drives requiring a large amount of drive torque.

The right ascension drive (below) is a friction drive with the 3.5 inch roller driving the 36 inch disc forming one end of the polar axis. Since the telescope/mount weighs thousands of pounds, this drive has to supply a lot of torque smoothly as it determines how well the auto guiding works.



The ST8300 camera (red) and the attached filter wheel is the new camera/filter combination capable of mono, LRGB or Narrowband imaging. The focuser is visible to the left.



Parallel guider is a temporary guider we are using until the off-axis guider can be put into operation or later with different cameras e.g. a DSLR camera. The off-axis guider built into the filter wheel should result in superior guiding due to the fact that it taps into the light cone coming from the main mirror.

## MAS Website Changes

If you've had the opportunity to go to the MAS website recently you should have noticed some changes. If you haven't given a look, you should! We're now updating the site regularly and hopefully you'll find the changes of interest. Some of the changes seemed obvious to us, but others were the result of looking at over 100 different astronomical society/club websites to get ideas.

The most obvious change is the top banner. We wanted to decrease the length as this banner appears on each and every page and we integrated the MAS logo into the image. Though we don't need this same banner and logo on every page, it is for the time being. But no matter what page you're on, clicking on that banner now takes you back to the home page.

The "MAS Special Events" box has been changed to "Events / Announcements" because that's been its primary use. The logo was removed because we now have that in the banner, making more room available. It's also been moved to the left making it more predominant and you'll now often find images within which do make the messaging stand out.

Below you'll find a new area called "What's In The Sky" where we highlight ongoing sights like the planets and other events like meteor

showers, eclipses, and aurora. But its real purpose right now is a place holder. When available, this will become the "Public Viewing Schedule" box and give the basic open house information for our intended visitors. You also might notice a "Like us on Facebook" logo. We

have a Facebook page which is being regularly updated and you can "like" us directly from your Facebook account or by hitting this button. We put this in on a whim, but we now have more than 70 people following us on Facebook, and so far 18 of the last 21 people have done so by hitting this button on our home page!

Putting this extended box opened up a large area to the right and we decided it could nicely accommodate a photo or even an article. So far we have been primarily using it to highlight a new photo or photos have been posted to

the MAS Showcase pages.

The Showcase, of course, is not new, but it's been stagnant for too many years, especially when our members have been taking great images! And it was possible because there is plenty of server space available for content. There are two major changes to the Showcase. First, in the various galleries new images are added to the top of the gallery rather than the bottom.

The second, is on the Showcase home page we established a “What’s New in the Showcase” to post any new image there regardless of the type of image. This makes it easy for anyone to check what’s been recently added. And we’re always looking for more images from our members! To help with that, we have a section for submission information, but it’s really it can be as simple as emailing your image to [showcase@milwaukeeastro.org](mailto:showcase@milwaukeeastro.org). The MAS

Observatory pages have been extensively updated. The cover photos for most of the observatories have been changed, but what’s really new is that each observatory now has its own gallery

of images. We also have a gallery for the MAS grounds (i.e., multiple observatories).

One important note about the gallery photos: these are in fact so-called “thumbnail” images. You can click on any of them and you’ll be able to see the full-size image.

The “Observing Information” page is one of the most visited pages on the website. Maybe not so surprising because it has the very useful Clear Sky Chart for Milwaukee. In examining those 100+ websites, this chart can be found on more than 75% of them. In order to make this even more useful, we’ve added sunrise/sunset moonrise/moonset and weather information as well as pictures from sites which give the current meteor and aurora activity. From that page are links to a full sky chart rendered for the current time and images of the sun taken by the SOHO Observatory.

Whenever you’re designing or updating a website, you need to consider many things. First and foremost, you have to acknowledge that

these days for any club, their website is the main portal. It’s nearly where everyone looking for information is going to go first. And you then need to consider your goals, what information you are conveying, the priority of the messaging, and finally, who is your audience. Our audiences include the MAS membership, possible members, general public, those looking for tours (includes our open houses), educators, etc. But the simple dichotomy here is

we have members and non-members. What is really happening to our home page is that over time we are gearing it more toward non-members. Statistically a website has very little time (10 to

30 seconds) to grab someone’s attention so we need to maximize this small window of opportunity.

However, this does not mean we’re taking away any content! And, especially, we are not forgetting our membership. What’s next is we’re planning a members page which we hope would be your home page for the MAS. This will not be a private page and will be linked from the entire website. It’s just content geared more toward our membership. As for a truly private area we are establishing that as well for more sensitive documents. Having said all that, don’t forget we already have this excellent Focal Point newsletter and the Google Group!

So what’s next? We will be establishing a “Contact Us” page and to help with that, an “FAQ” page. And expect many more changes.

If you every see any errors or have any suggestions or comments, simply email them to us at: [webmaster@milwaukeeastro.org](mailto:webmaster@milwaukeeastro.org)

by Gene Hanson



## Astronomical Events

convention news



The Northern Cross Science Foundation is pleased to be hosting the **2014 NCRAL Convention!** The event will take place on **April 4-5, 2014 at the Lakeview Conference Center in Port Washington, WI.**

For more information go to: <http://ncsf.info/ncral2014.htm>

### Friday, April 4

- 1:30pm Registration desk opens
- 2:00pm - 6:00pm Harley-Davidson Museum Tour: "History Roars To Life"**
  - 2:15pm Bus arrives for boarding
  - 2:30pm Bus departs for museum
  - 3:10pm Arrive at Harley-Davidson Museum in Milwaukee and begin docent-led group tour
  - 4:15pm Free time to peruse the museum, see the beautiful grounds, visit the gift shop, or get a bite across the street at the museum's "Motor Bar & Restaurant."
  - 5:00pm Board bus for departure
  - 6:00pm Arrive back at the Lakeview Conference Center in Port Washington.
- 7:00pm-8:00pm "Astronomy Memories" with Jeff Setzer and his mentor, Kevin Bert
- 9:00pm Registration desk closes for the evening
- 7:00pm-11:00pm Tour the Jim & Gwen Plunkett Observatory and view the sky through the 20-inch Panarusk Telescope at Harrington Beach State Park. Light snacks provided by "Kathy's Cupcakes."

### Saturday, April 5

- 7:00am Registration desk opens
- 8:15am Welcome and announcements
- 8:30am Registration desk closes for duration of the conference
- 8:30am-8:45am Keynote: Dean Regas, Cincinatti Observatory & Star Gazer television program host
- 10:00am-10:45am Bart Adrian, University Of Wisconsin - Milwaukee
- 11:00am-11:45am Vivian Hotte, Outreach Director at Yerkes Observatory
- 11:45am Group Photo
- Noon-1:15pm Lunch on your own
- 1:30pm-2:15pm Paul Kinzer, Author "Stargazing Basics" and Wisconsin Public Radio frequent guest
- 2:30pm-3:15pm Professor Dawn Erb, University of Wisconsin - Milwaukee
- 3:30pm-4:15pm John Rummel, Madison Astronomical Society
- 3:30pm Close of entries for Astro-Trivia, Astrophoto and Astronomy Sketching contests
- 4:15pm-5:00pm NCRAL Annual Business Meeting
- 5:45pm Social gathering (cash bar)
- 6:30pm Buffet dinner "Casual Elegance" by Saz's of Milwaukee
- 7:45pm Banquet speaker: Dr. Barbara J. Becker, University of California - Irvine

## In the Astronomical News

### A Black Hole is Born - and Caught in the Act!

The moment photons began arriving at Earth shortly after midnight New Mexico time on Saturday, April 27, 2013, from the spectacular suicide of a massive star and resultant birth of a black hole, cameras began clicking on telescopes both on the ground and in space.

Three independent RAPTOR (Rapid Telescopes for Optical Response) full-sky monitoring telescopes—two in New Mexico and one in Hawaii—caught an optical flash that within seconds brightened up to a peak of 7<sup>th</sup> magnitude, and then faded over the next minute and a half to below 10<sup>th</sup> magnitude. Simultaneously, the Gamma Ray Burst Monitor (GBM) on the Fermi satellite, the Burst Alert Telescope (BAT) on the Swift satellite, and a veritable armada of other instruments caught the cataclysmic stellar explosion in the act, as did radio telescopes around the world.

Even more unusual, the explosion left an afterglow that persisted for weeks following the initial burst. A host of papers in the January 3, 2014, issue of *Science* magazine reveal in detail just what happened. GRB 130427A was the most powerful gamma-ray burst and the second-brightest optical flash measured in 18 years. The supernova detonated in a tiny galaxy with no name some 3.8 billion light-years away. Partly it was so bright because that point of origin is actually five times closer to the Milky Way than typical long-duration gamma-ray bursts monitored by Swift, which are from galaxies that are now more than 17 billion light years away from us (thanks to the faster-than-light expansion of the distant universe according to General Relativity). The explosion released 1054 ergs of energy in all directions, making it one of the most powerful gamma-ray bursts ever detected.

The comparatively long life of the gamma-ray burst points to the death of a star perhaps 25 to 30 times more massive than the Sun, whose internal core of iron abruptly collapsed in on itself, creating a highly magnetized neutron star or black hole. Somehow, this fast-spinning, compact



Los Alamos National Laboratory astrophysicist Tom Vestrand poses with the fast-slew array of telescopes for RAPTOR (RAPid Telescopes for Optical Response) system. RAPTOR is an intelligent visual system that scans the skies for optical anomalies and zeroes in on them when it detects them. This unique capability allowed astronomers to witness the birth of a black hole in the constellation Leo. Credit: Los Alamos National Laboratory

object launches a powerful jet of particles traveling at nearly the speed of light. Internal shockwaves within this relativistic jet creates the initial burst of what is called “prompt” emission spanning from optical to gamma-ray wavelengths; in the case of GRB 130427A, the prompt emission lasted about 5 minutes.

Then, when the jet starts colliding with the surrounding outer layers of the star and interstellar medium, external shock waves give rise to a longer-lasting afterglow emission. The afterglow of GRB 130427A—which spanned from radio waves to gamma rays—persisted for weeks. What made this burst different from most others is that the sheer power of the explosion so comparatively nearby allowed astronomers to follow the star’s decline in brightness over many wavelengths for weeks, giving them a glimpse into details of the explosion’s physics usually too faint to observe.

—Trudy E. Bell, M.A.

The University of California High-Performance AstroComputing Center (UC-HIPACC), based at the University of California, Santa Cruz, is a consortium of nine University of California campuses and three Department of Energy laboratories (Lawrence Berkeley Laboratory, Lawrence Livermore Laboratory, and Los Alamos National Laboratory). UC-HIPACC fosters collaborations among researchers at the various sites by sponsoring an annual advanced International Summer School on AstroComputing (ISSAC), offering travel and other grants, co-sponsoring conferences, and drawing attention to the world-class resources for computational astronomy within the University of California system. More information appears at <http://hipacc.ucsc.edu>.

## Adopt a Telescope Program - Signup Sheet

	<b>Adoptee</b>	<b>Scope</b>	<b>Location</b>
<b>1</b>	Sue Timlin	18" F/4.5 Obsession	Wiesen Observatory
<b>2</b>	Neil Simmons	12.5" F/7.4 Buckstaff	B Dome
<b>3</b>	Russell Chabot	12.5" F/9 Armfield	A Dome
<b>4</b>	Dan Yanko	10" F/6 Newtonian	Albrecht Observatory
<b>5</b>	Tamas Kriska	25" F/15 Zemlock	Z Dome
<b>6</b>	Henry Gerner	12" LX 200	Tagney Observatory
<b>7</b>	Jeffrey Fillian	14" Z-Two scope	Ray Zit Observatory
<b>8</b>	Vacant	10" LX 200	Jim Toeller Observatory

### At Your Service

#### Officers / Staff

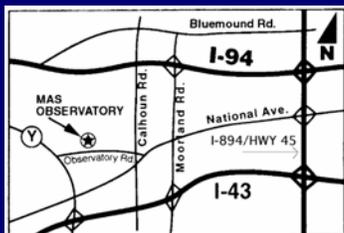
President	Scott Jamieson	262-592-3049
Vice President	Brian Ganiere	414-961-8745
Treasurer	Russell Chabot	414-881-3822
Secretary	Agnes Keszler	414-581-7031
Observatory Director	Gene Hanson	262-354-0138
Asst. Observatory Director	Jill Roberts	414-587-9422
Newsletter Editor	Tamas Kriska	414-581-3623
Webmaster	Robert Burgess	920-559-7472

#### Board of Directors

Robert Burgess	920-559-7472
Russell Chabot	414-881-3822
John Hammetter	414-519-1958
Gene Hanson	262-354-0138
Lee Keith	414-425-2331
Agnes Keszler	414-581-7031
Tamas Kriska	414-581-3623
Neil Simmons	262-889-2039
Michael Smiley	262-825-3981
Sue Timlin	414-460-4886
Dan Yanko	262-255-3482

#### February/March Key Holders

2/22	Lee Keith	414-425-2331
3/1	Henry Gerner	414-774-9194
3/8	Tamas Kriska	414-581-3623
3/15	Mike Smiley	262-825-3981
3/22	Tom Schmidtkunz	414-352-1674
3/29	Dan Yanko	262-255-3482



#### MAS Observatory

18850 Observatory Rd  
New Berlin, WI

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