



January, 2015

## January 16<sup>th</sup>: Membership Meeting at Charles Z. Horwitz Planetarium

The upcoming General Membership Meeting of the MAS is going to be held on January 16<sup>th</sup>, at 8:00 PM at the Charles Z. Horwitz Planetarium of the Retzer Nature Center, which is located at S14 W28167 Madison St. Waukesha, WI 53188 (see the map below).

**David DeRemer**, planetarium director will give us a brief tour of the sky and present a planetarium show entitled "Cosmic Colors". We will be given an insight into the use of wavelengths of the electromagnetic spectrum to study the mysteries in deep space.

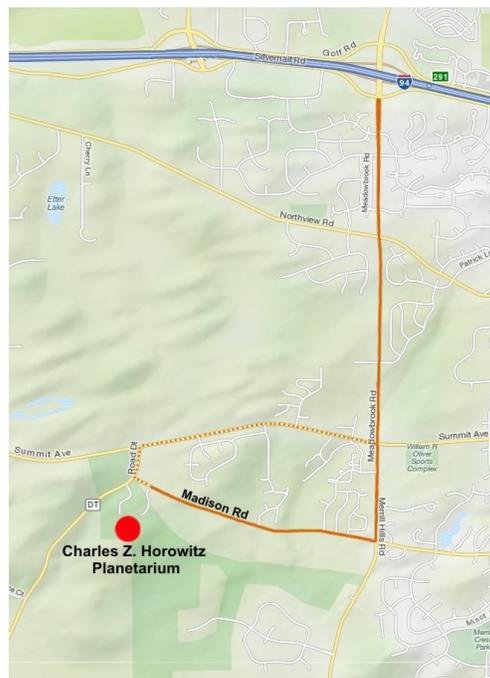


The General Meeting will be preceded by a Board Meeting from 7:00 PM, which is open for anybody who is interested.

### Inside this issue:

January Meeting	1
Winter Schedule	1
Observatory News	2
In the News	4
Adopt a Scope	5
Officers/Staff	5
Keyholders	5

## The MAS Winter Schedule



The winter meetings of the Milwaukee Astronomical Society from January through April will be held at the Charles Z. Horwitz Planetarium at the Retzer Nature Center, S14 W28167 Madison St in Waukesha. Starting from May the meetings will return to the MAS Observatory in New Berlin.

Directions to Charles Z. Horwitz Planetarium: take I-94 West to Pewaukee/Waukesha (exit 291) and go south on Meadowbrook Rd. After about 2.2 miles turn right onto Madison Rd. Drive about 1.2 miles. The driveway to the planetarium will be on the left side of the road (see solid line on the map). Alternatively, after 1.9 miles on the Meadowbrook Rd. turn right onto Hwy. 18 (Summit Ave), go 1.2 miles, turn left onto Hwy DT and follow the signs to Retzer Nature Center (see dotted line on the map to the left).

## Observatory News

**Meade 12" LX200:** In an effort to improve the 12 inch Meade LX200s performance, Scott Jamieson donated a very good wedge made by Mitty. These are superior wedges and Scott used this one until his own 10 inch LX200 was destroyed in the tornado. It is in great shape. Scott added a very heavy adapter plate that fits the telescope and adapted it to the existing pedestal.



The purpose of this effort is to improve the GOTO performance by accurate alignment with the pole. The old wedge was impossible to adjust accurately. This new wedge has very fine adjustment verniers.

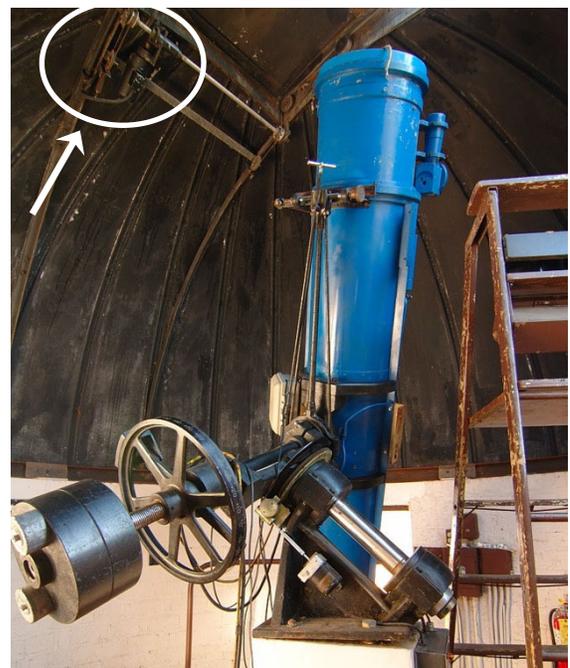
**B-dome slit motor:** The B-dome housing the 12.5 in Newtonian B-scope was completed in 1951. The original slit opener motor custom made from a heavy-duty drill failed due to completely worn out brushes. D&G Electric Motor Services agreed to re-build it for an estimated cost of \$500. After several unsuccessful attempts the company was ready to give up but Scott persuaded them to keep trying, since there was no adequate replacement motor on the market that would fit into the limited space. They finally succeeded to complete the project, and even kept the original price estimate.



Scott tried new springs on the slit cover drive but had to go back to the original. He installed a sound buffer on the motor mount to quiet the

booming noise we were getting and the slit seems to move reliably with occasional hesitating until the wire moves from one side of the pulley to the other which was the source of the delay.

Hopefully, the refurbished motor will serve us for at least 64 more years.



## Observatory News

**G-scope:** The trench for the cabling to the Z2 Observatory was filled immediately because we feared we might have another winter like last year, and it sure appeared that way for the first few weeks of November. But work on the G-Scope continued by Scott Jamieson. The mirror badly needed securing because it was shifting as the scope slewed and thus ruining the alignment. Scott found a source for these Flop Stoppers in Hawaii and was hoping to pick them up personally, but in the end opted to have them mailed.



However, inserting the stoppers meant taking the telescope apart, including taking the corrector plate off. No big deal, but he soon discovered that the plate had been glued and he feared that he might crack it in the disassembly.



But he got it off, and then noticed that there was also slop in the secondary assembly which he was able to address at the same time. So with both of these

accomplished, we will have more consistent optical alignment and this will make polar alignment possible.



Meanwhile, the cables we buried are working and the telescope can be controlled from the Z Dome control room and you can see an image of the telescope from the video camera pointing at the G Scope.



## In the Astronomical News

### Hubble Goes High-Definition to Revisit Iconic “Pillars of Creation”

Although NASA's Hubble Space Telescope has taken many breathtaking images of the universe, one snapshot stands out from the rest: the iconic view of the so-called “Pillars of Creation.” The jaw-dropping photo, taken in 1995, revealed never-before-seen details of three giant columns of cold gas bathed in the scorching ultraviolet light from a cluster of young, massive stars in a small region of the Eagle Nebula, or M16.

Though such butte-like features are common in star-forming regions, the M16 structures are by far the most photogenic and evocative. The Hubble image is so popular that it has appeared in movies and television shows, on T-shirts and pillows, and even on a postage stamp.

And now, in celebration of its upcoming 25th anniversary in April, Hubble has revisited the famous pillars, providing astronomers with a sharper and wider view. As a bonus, the pillars have been photographed in near-infrared light, as well as visible light.

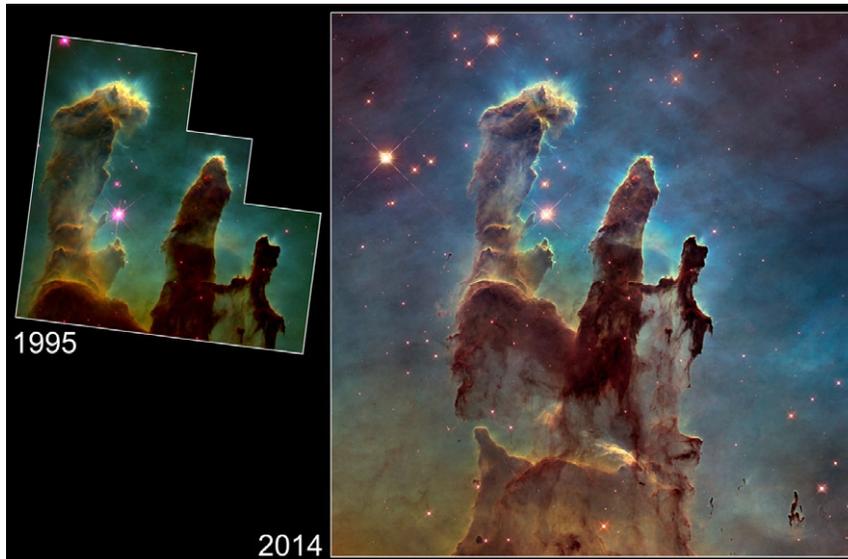
The infrared view transforms the pillars into eerie, wispy silhouettes seen against a background of myriad stars. That's because the infrared light penetrates much of the gas and dust, except for the densest regions of the pillars. Newborn stars can be seen hidden away inside the pillars. The new images are being unveiled at the American Astronomical Society meeting in Seattle.

Although the original image was dubbed the Pillars of Creation, the new image hints that they are also pillars of destruction. They are actively being ablated away before our very eyes. The ghostly bluish haze around the dense edges of the pillars is material getting heated up and

evaporating away into space. We have caught these pillars at a very unique and short-lived moment in their evolution. The infrared image shows that the very ends of the pillars are dense knots of dust and gas. They shadow the gas below them, keeping the gas cool and creating the long, column-like structures. The material in between the pillars has long since been evaporated away by the ionizing radiation from the central star cluster located above the pillars.

By comparing the 1995 and 2014 pictures, astronomers also noticed a lengthening of a narrow jet-like feature that may have been ejected from a newly forming star. The jet looks

like a stream of water from a garden hose. Over the intervening 19 years, this jet has stretched farther into space, across an additional 60 billion miles, at an estimated speed of about 450,000 miles per hour. Our sun probably formed in a similar turbulent star-forming region. There is evidence that the forming solar system was seasoned



Astronomers using NASA's Hubble Space Telescope have assembled a bigger and sharper photograph of the iconic Eagle Nebula's "Pillars of Creation" (right); the original 1995 Hubble image is shown at left. Credit: NASA/ESA/Hubble Heritage Team (STScI/AURA)/J. Hester, P. Scowen (Arizona State U.)

with radioactive shrapnel from a nearby supernova. That means that our sun was formed as part of a cluster that included stars massive enough to produce powerful ionizing radiation, such as is seen in the Eagle Nebula.

The Hubble Space Telescope is a project of international cooperation between NASA and the European Space Agency. NASA's Goddard Space Flight Center in Greenbelt, Maryland, manages the telescope. The Space Telescope Science Institute (STScI) in Baltimore conducts Hubble science operations.

by Felicia Chou and Ray Villard

## 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 Halbach	A Dome (Armfield)
<b>4</b>	Dan Yanko	18" F/4.5 Obsession (Kyle Baron)	Albrecht Observatory
<b>5</b>	Tamas Kriska	25" F/3.4 Zemlock	Z Dome
<b>6</b>	Henry Gerner	12" LX 200	Tangney Observatory
<b>7</b>	Vacant	8"/14" Celestrons	Ray Zit Observatory
<b>8</b>	Vacant	10" LX 200	Jim Toeller Observatory

### At Your Service

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#### December/January Keyholders

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1/24	Gene Hanson	262-354-0138
1/31	Scott Jamieson	262-592-3049
2/7	Jill Roberts	414-587-9422
2/14	Tim Hoff	262-662-2212



### MAS Observatory

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