



Focal Point



July, 2013

The MAS Summer Schedule

There will be no General Membership Meeting in June, July, and August. The September Meeting will be announced in August issue of this newsletter. The use of the Observatory is not affected by the summer schedule. Remember - Saturday nights are the keyholder nights! See you there.

Next event: **Public Night on August 9th**, 7:30PM about the Meteor Showers.

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The MAS Picnic

The Milwaukee Astronomical Society is hosting the Annual Picnic for MAS members. The event will be held on **July 27th**, from **5:00pm** at the MAS Observatory in New Berlin. This year we are going to have a **potluck**. Please bring a dish to pass. Beverages and charcoal grills will be provided.

Join us, and have fun! Bring along your family and/or friends.



Annual Star Party at Yerkes Observatory

The annual star party the MAS puts on for the high school kids in Yerkes Summer Institute is scheduled for Sunday night, August 4. We need members with telescopes for that night, and as a "thank you" we get a nice Summer Institute T-shirt. Sunset around the beginning of August is around 8:15 pm. Since part of this party is showing off our telescopes as well, we should start arriving after 7:00.

In the past we have had the opportunity to visit the historic 40-inch refractor in the big dome, and ride in a tethered hot-air balloon. We have always had fun and the students are always enthusiastic. You don't have to be an expert to be a part of this, just share your enthusiasm and knowledge of our hobby.

This is a long but understated tradition of the MAS. Members have been providing help for this star party for over 20 years. If you are planning to participate please email your intention along with the size of your t-shirt to Neil Simmons at neilsimm@gmail.com.



The Yerkes Observatory is located at **373 W. Geneva St, Williams Bay, WI**. Take Highway 43 all the way to the Highway 67 Elkhorn/Williams Bay exit.

Observatory News

Conversion of Z Scope for Narrow Band Imaging

As most of you know, I have made a couple of presentations on my project to Convert Z scope from F15 visual operation to F3.3 color and narrow band imaging by removing the current secondary and building a new upper assembly. This assembly will hold a full imaging setup to allow mono, color and narrow band imaging. I will supply my ST8300 camera and Canon DSLR for the development period of this project. This project will be fully reversible but will be difficult enough that it will not be practical to switch it back and forth from F15 to F3.

As a result, we should look at this as an experiment basically lasting the summer and fall to try and accomplish the following goals, with the intent to make this a long term change if successful and have the club buy a full set of equipment to allow the imaging we have demonstrated is possible. This will cost a total of about \$7500. If the experiment fails, Z will be returned to its present condition.

1. Since this conversion is intended to use 22x18 mm imaging chips, the primary field is not flat enough to get good images across the whole field. My research indicates that a Paracorr type 2 corrector should take care of this issue. Thus, the first step is to purchase one of these for \$500. I will then remove the current secondary assembly and make and install a prototype upper assembly to hold a remote focuser, the Paracorr and a camera. I will supply all of the parts to do this except the Paracorr. I would hope to accomplish this by mid July and be able to get sufficient test images to determine if F3.3 operation is



practical at all. If not I will return Z to it's previous condition and align the optics .

2. If these images look good, we will tackle the second major issue, the current Dec drive is incapable of doing guided imaging. I will design and build a new deck drive to attempt to

make the drive action smooth and repeatable, a prime requirement for auto guiding.

3. This will be quite difficult but if this works, we will do a full polar alignment on Z scope and add a guide telescope and guide camera . I will supply all of these parts. If the guide system works well enough, we will attempt to take our first

guided images in color at the F3.3 focus of the Z scope/Paracorr combination.

4. If successful we will demonstrate the results to the board and request some machining to replace the temporary parts that I made. Reconfirming the results, I will remove all of my equipment and replace it with equipment the club will buy.

This project could yield to us the largest Color and Narrow band amateur imaging telescope in Southern Wisconsin and should generate interest in our club by a whole new generation of amateur astronomers.

The Narrow band imaging capability will make imaging during the bright moon practical and totally eliminate the light pollution issue. Narrow band will be used primarily for emission Nebula's (Think "Pillars of Creation".) and the full color capability will be useful for all other targets including galaxies.

Scott Jamieson
President

In the Astronomical News

Amateur Astronomers Help Find Galaxy's Arms

Even a familiar night sky object can hold some interesting surprises. This is especially true when looked at with a fresh set of eyes. Or telescopes.

The image is of Messier 106, a galaxy with an active supermassive black hole at its center. The image was composed of data from the Hubble Space Telescope, reprocessed by Robert Gendler for the Hubble Hidden Treasures competition. He included in the mosaic astrophotography from his own telescope and from that of fellow astroimager Jay GaBany to fill in the places where there were no Hubble data.

Though the galaxy's structure is dominated by two large spiral arms, there are two fainter arms that can be seen in this image in red. These arms are not made of bright, newly formed stars like the other, but of very hot gas expelled from the region surrounding the supermassive black hole at the center. They are comprised of hot gas seen in infrared and in Hydrogen alpha emission.

When you look at M106 in non-visible wavelengths, this activity is even more obvious. Another name for this galaxy is NGC4258, and this is also well known for the masers (or microwave lasers) found near the supermassive black hole in the

center. These spots of water vapor that act like lasers have been tracked with exquisite precision by astronomers using the Very Long Baseline Array, giving an accurate measure of the distance to this galaxy at 24 million light years away, and the mass of its black hole at 40 million times the mass of the sun.

The supermassive black hole at the center is pulling material onto it, but not all that material can make it into the black hole at once. As a result, there is a disk of hot glowing material that powers a number of phenomena, including the small radio jets perpendicular to the disk and the water megamasers in the accretion disk. It also powers the wispy red gas forming the two newly seen spiral arms in the disk of the galaxy.



This image combines Hubble observations of M 106 with additional information captured by amateur astronomers Robert Gendler and Jay GaBany. Gendler combined Hubble data with his own observations to produce this stunning color image. M 106 is a relatively nearby spiral galaxy, a little over 20 million light-years away. Credit: NASA, ESA, the Hubble Heritage Team (STScI/AURA), and R. Gendler (for the Hubble Heritage Team). Acknowledgment: J. GaBany

This discovery highlights the importance of taking a new look at archived data and of letting as many eyes as possible look at your scientific data. As we enter into an era with larger and larger astronomical datasets, having volunteers look at all the new data is going to be key to staying on top of new discoveries and information.

by Nicole Gugliucci

Adopt a Telescope Program - Signup Sheet

	Adoptee	Scope	Location
1	Sue Timlin	18" F/4.5 Obsession	Wiesen Observatory
2	Neil Simmons	12.5" F/7.4 Buckstaff	B Dome
3	Russell Chabot	12.5" F/9 Halbach	A Dome (Armfield)
4	Dan Yanko	18" F/4.5 Obsession (Kyle Baron)	Albrecht Observatory
5	Tamas Kriska	25" F/15 Zemlock	Z Dome
6	Henry Gerner	12" LX 200	Tangney Observatory
7	Jeffrey Fillian	14" Z-Two scope	Ray Zit Observatory
8	Kevin & John McCarthy	10" LX 200	Jim Toeller Observatory

At Your Service

Officers / Staff

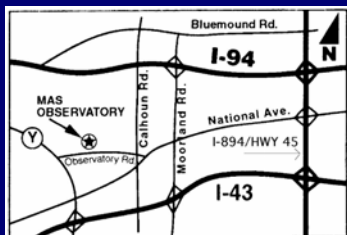
President	Scott Jamieson	262-592-3049
Vice President	Brian Ganiere	414-961-8745
Treasurer	Russell Chabot	414-881-3822
Secretary	Agnes Keszler	414-581-7031
Observatory Director	Vacant	
Asst. Observatory Director	Vacant	
Newsletter Editor	Tamas Kriska	414-581-3623
Webmaster	Robert Burgess	920-559-7472

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

July/August Key Holders

7/20	Russell Chabot	414-881-3822
7/27	Brian Ganiere	414-961-8745
8/3	Henry Gerner	414-774-9194
8/10	Chris Hesseltine	414-482-4515
8/17	Tim Hoff	262-662-2212
8/24	Scott Jamieson	262-592-3049



MAS Observatory

18850 Observatory Rd
New Berlin, WI

www.milwaukeeastro.org