



Focal Point



July, 2014

Next Public Night on August 22nd

The fourth public observing night is scheduled for August 22nd at 7:30PM. The topic will be **The Wonders of Nebulae**. The evening will include a presentation about the topic by Dennis Roscoe and viewing thru telescopes weather permitting. We will collect a parking donation of \$5/vehicle. The event will be held in rain, shine, and starlight. The kind help of MAS members during the night is encouraged and highly appreciated.

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The Yerkes Star Party

Once again the MAS putting on a star party for high school students at the Yerkes Observatory. The Yerkes Summer Institute held by the Kavli Institute for Cosmological Physics at University of Chicago, gathers high school students from the city of Chicago who are interested in science for a week long seminar in Williams Bay. For the last couple of decades the MAS has been bringing out telescopes and showing the students the dark (albeit sometimes cloudy) skies of Wisconsin. We are looking for telescopes, or a pair of binoculars or other optical aid, but if you don't have one we will gladly accept your enthusiasm - just pair up with someone with a telescope.



There is a chance that we get a tour at the historic 40-inch reflector, but no guarantees.

This year the star party is scheduled for Sunday, August 10th. 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.

We are going to start setting up at 7:00 pm on the south lawn depicted on the above photo.

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.

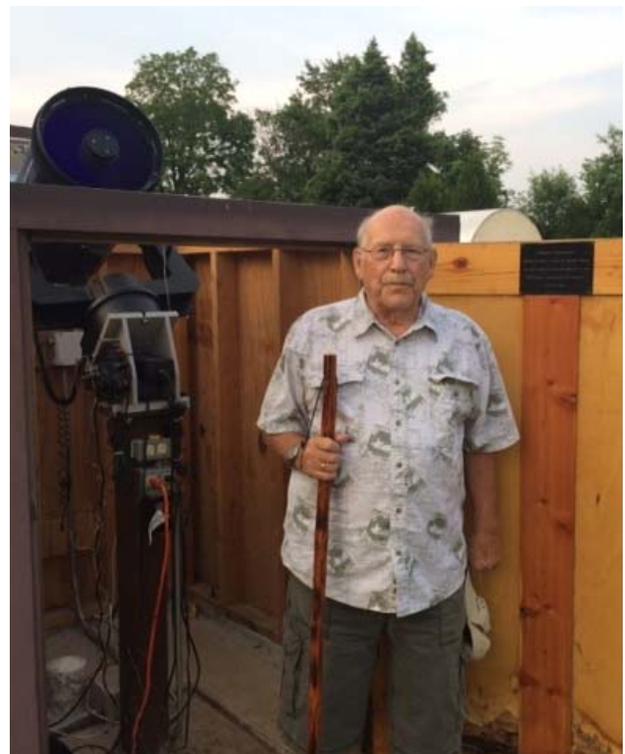
The use of the Observatory is not affected by the summer schedule. Remember: Saturday nights are the keyholder nights! See you there.

MAS Picnic

We were having our Annual Potluck Picnic on Saturday, July 19th at the MAS Observatory in New Berlin. This summer we got lucky with the beautiful weather, so after two consecutive indoor events we could set up the tables and lawn chairs on the grass by the B dome. Members and their guests (25 person altogether) were engaged in cheerful conversation while enjoying a variety of delicious food. Everybody had a great time.



As a surprise Virgil Tangney, who moved to Florida a couple of years ago, showed up with his family. Virgil joined the MAS 50 years ago, served as Board member and President. On a photo to the right he is standing in front of the



observatory named after him that housing the 12" LX200 telescope.

Photos are courtesy of Scott Jamieson

In the Astronomical News

Voyager Spacecraft Might Not Have Reached Interstellar Space

In 2012, the Voyager mission team announced that the Voyager 1 spacecraft had passed into interstellar space, traveling further from Earth than any other manmade object. But, in the nearly two years since that historic announcement, and despite subsequent observations backing it up, uncertainty about whether Voyager 1 really crossed the threshold continues. There are some scientists who say that the spacecraft is still within the heliosphere – the region of space dominated by the Sun and its wind of energetic particles – and has not yet reached the space between the stars.

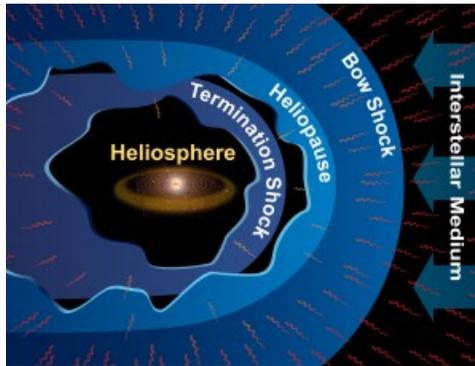
Now, two Voyager team scientists have developed a test that they say could prove once and for all if Voyager 1 has crossed the boundary. The new test is outlined in a study accepted for publication in *Geophysical Research Letters*, a journal of the American Geophysical Union.

The scientists predict that, in the next two years, Voyager 1 will cross the current sheet – the sprawling surface within the heliosphere where the polarity of the sun's magnetic field changes from plus to minus. The spacecraft will detect a reversal in the magnetic field, proving that it is still within the heliosphere. But, if the magnetic field reversal doesn't happen in the next year or two as expected, that is confirmation that Voyager 1 has already passed into interstellar space.

Professor George Gloeckler has worked on the Voyager mission since 1972 and has been a vocal opponent of the view that Voyager 1 has entered interstellar space. He said that, although the spacecraft has observed many of the signs indicating it may have reached interstellar space, like cosmic rays, Voyager 1 did not see a change in magnetic field that many were expecting. This controversy will continue until it is resolved by measurements.

Gloeckler and co-author, Len Fisk, also a

professor in atmospheric, oceanic and space sciences at the University of Michigan, are basing their new test on a model they developed and [published earlier this year](#) in *The Astrophysical Journal*. The model assumes that the solar wind is slowing down and, as a result, that the solar wind can be compressed. Based on this assumption, the study says Voyager 1 is moving faster than the outward flow of the solar wind and will encounter current sheets where the polarity of the magnetic field will reverse, proving that the spacecraft has not yet left the heliosphere. The scientists predict this reversal will most likely happen during 2015, based on observations made by Voyager 1.



The heliosphere is a large bubble inflated from the inside by the high-speed solar wind blowing out from the Sun. Pressure from the solar wind, along with pressure from the surrounding interstellar medium, determines the size and shape of the heliosphere. The supersonic flow of solar wind abruptly slows at the termination shock, the innermost boundary of the solar system. The edge of the solar system is the heliopause. The bow shock pushes ahead through the interstellar medium as the heliosphere plows through the galaxy. *Credit: Southwest Research Institute*

current sheet crossing like the one being proposed in the new study, it could also mean that the heliosphere is expanding and crossed the spacecraft again.

Stephen Fuselier, director of the space science department at the Southwest Research Institute in San Antonio, Texas, who believes Voyager 1 has entered interstellar space, said he will reserve judgment on whether Gloeckler and Fisk are correct until 2016. He said there is a sizeable fraction of the space community that is skeptical that Voyager 1 has entered interstellar space, but the new proposed test could help end that debate. Another good test will come when Voyager 2 crosses into interstellar space in the coming years.

from American Geophysical Union

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/3.4 Zemlock	Z Dome
6	Henry Gerner	12" LX 200	Tangney Observatory
7	Jeffrey Fillian	14" Z-Two scope	Ray Zit Observatory
8	Vacant	10" LX 200	Jim Toeller Observatory

At Your Service

Officers / Staff

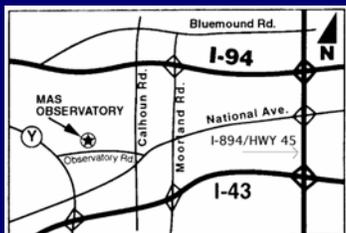
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Observatory Director	Gene Hanson	262-354-0138
Asst. Observatory Director	Jill Roberts	414-587-9422
Newsletter Editor	Tamas Kriska	414-581-3623
Webmaster	Robert Burgess	920-559-7472

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Robert Burgess	920-559-7472
Russell Chabot	414-881-3822
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Gene Hanson	262-354-0138
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Tamas Kriska	414-581-3623
Dennis Roscoe	608-206-0909
Michael Smiley	262-825-3981
Sue Timlin	414-460-4886
Dan Yanko	262-255-3482

August/September Key Holders

8/2	Scott Jamieson	414-352-1674
8/9	Jill Roberts	414-587-9422
8/16	Tim Hoff	262-662-2212
8/23	Lee Keith	414-425-2331
8/30	Henry Gerner	414-774-9194
9/6	Tamas Kriska	414-581-3623



MAS Observatory

18850 Observatory Rd
New Berlin, WI

www.milwaukeeastro.org