

March, 2015

March 27st: Membership Meeting at Charles Z. Horwitz Planetarium

The upcoming General Membership Meeting will be held on March 27st, at 8:00 PM at the Charles Z. Horwitz Planetarium of the Retzer Nature Center (see the map).

Michelle Thaller, Assistant Director of Science for Communications, NASA Goddard Space Flight Center will present a talk entitled "Small Worlds, Big Discoveries". No doubt about it; at the end of this year, we'll need to re-write the textbooks about our solar system. Something on Mars is releasing burst of natural gas from the soil. As NASA's Dawn spacecraft approaches Ceres, we're seeing mysterious bright areas that may signal ice, or even liquid water, inside the largest asteroid. We'll also arrive at Pluto for the first time, and we're currently riding on a comet



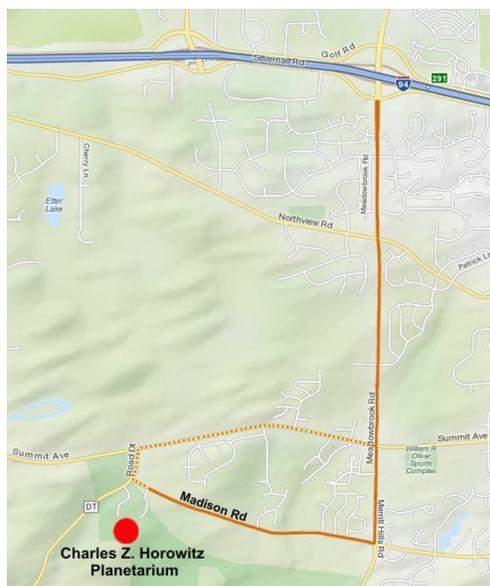
that's plunging closer to the Sun. Out by Saturn, the Cassini mission will dive down close to Titan, a world with rain, rivers and lakes, and the small moon Enceladus, which gushes warm, organic-rich water into space. These worlds may be small, but they're about to change what we know about this history of our Solar System, and our own place in it.

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

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The MAS Winter Schedule



The MAS meetings 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: 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).

Observatory Report

Activity at the observatory has been limited due to cloudy weather and extreme cold when it's clear. But we have great access due to the efforts of Paul Borchardt.

Though the B Dome shutter basically works, we're still experiencing some trouble when the shutter is opened nearly all the way. And we're still experiencing communications problems with the G Scope.

I have resurrected the Z UMa project to see if we can get anyone interested in doing variable stars (see page 5). I have updated that web page and moved it under the Variable Stars tab. As one of the people that wrote and edited the AAVSO Visual Observing Manual, I am in a good position to help anyone looking to give it a try.

Website Report:

The host server of the MAS website was upgraded to Windows 2008. See the full report on page 3-4.

Respectfully Submitted,
Gene Hanson, Observatory Director

Treasurer's Report

\$2,221.17	Starting Balance as of 1/16/2015
	Expenditures
\$119.45	WE Energies
\$1.87	Paypal Fees
\$160.00	New Berlin Tax
-\$281.32	TOTAL Expenditures
	Revenue
\$100.00	Membership Dues
\$100.00	TOTAL Revenue
\$2,039.85	Ending Balance as of 2/18/2015

Respectfully Submitted,
Dennis Roscoe, Treasurer

Meeting Minutes

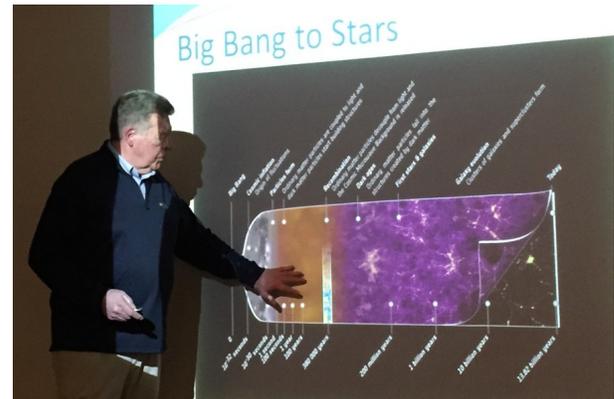
Held on February 20th at the Charles Z. Horwitz Planetarium, Waukesha. The meeting was called to order at 8:00 PM by President, Scott Jamieson.

Minutes of the previous meeting, **Treasurer's Report**, **Observatory Director's Report**, and the **Membership Report** were submitted electronically in advance (see this page), therefore were not read.

Membership applications of Richard Kenyon and Joyce Prewitt were approved.

Old Business - Dates and topics of the 2015 Public Nights schedule were determined. Sue Timlin Committee Chair was still looking for speakers.

Discussion about the potential investments to improve the Club's capabilities has been continued. The following ideas emerged: to buy a wide field telescope, move the G-scope to different building, investigate the fate of the Z-scope.



The Program Dennis Roscoe gave a presentation entitled "Star Dust, the Foundation of our Existence".

The meeting was adjourned at 9:00 PM.

Respectfully Submitted,
Agnes Keszler, Secretary

Membership Report

Two new membership applications were received from Joyce Prewitt, Richard Kenyon.

Current Membership number is at 80.

Respectfully Submitted,
Tamas Kriska, Committee Chair

Website Report

Upgrade to Windows Server 2008

There was a planned outage of the website on the night of January 22nd which was communicated to the membership via our Google Group. Here is more detail to clarify what happened for anyone interested: If not particularly interested, proceed directly to [End-of-complicated-explanation]

First of all, this was not a transfer of providers as all of this happened within our current provider, DiscountASP.Net. The data for our site is located on one of their servers and that happened to be

Microsoft Windows Server 2003. For the basic web content, it doesn't matter what the architecture happens to be. Where it makes a difference is in the databases and how they are accessed. Our site was

built with some Visual Basic code and we have a few databases which are Access databases. Though it is the responsibility of your own computer device (computer, laptop, pad, or phone) to render the content, any database access must be done by the provider's server. This means the server for our site at this time has to be one that supports Microsoft.

Our website is old enough that when it was built, Windows Server 2003 was relatively new. During the meantime, however, they have released new versions in 2008 and 2012. I knew we were running on what appears to be an old operating systems, but one of the golden rules of IT is you don't fix what isn't broken. And another axiom of IT is that the older something is, the more stable it is. Now there were some new features available, but there was only one that I felt could be an advantage for us. This is why our service provider was not pushing for everyone to upgrade.

But Microsoft has forced things because they're going to stop supporting it on July 15th of this year. That means no more security updates which means increasing vulnerability. Frankly, I would have done this earlier, but the site would be necessity down as the data was transferred from one server to the new one. And, of course, they guaranteed we would experience *some* difficulty and we did. Once the transfers were done, you saw this if you went to our website (see the picture).

The screenshot shows the DiscountASP.NET website interface. At the top, it says "Welcome To DiscountASP.NET" and provides instructions for users. Below this, there are several sections: "CONTROL PANEL LOGIN" with fields for User and Pwd, a "Forgot password?" link, and a "GO" button; "DNS INFORMATION Name Servers" listing ns1.discountasp.net, ns2.discountasp.net, and ns3.discountasp.net; "DiscountASP.NET KNOWLEDGE BASE" with a link to support.discountasp.net; and "DiscountASP.NET COMMUNITY FORUM" with a link to community.discountasp.net. At the bottom, there is a copyright notice: "© 2003-2009 DiscountASP.NET | All Rights Reserved | Policies".

Great, it says just rename the index.htm file they placed in our root directory. But for over an hour I was locked out of our website content because I couldn't log on to our FTP. After 15 minutes, however, I circumvented their index so at least our website was essentially up

and running (i.e., all the content was successfully moved), but I couldn't do any updates! I was never panicked because if necessary I could contact technical support, but I was determined to figure it out myself. An hour later I figured it out what was wrong and regained access. The problem was pretty silly (a lot of problems are when you finally figure them out) as it was a simple naming convention. I could complain to the service provider how confusing this is, but we do get our service from someone called "Discount."

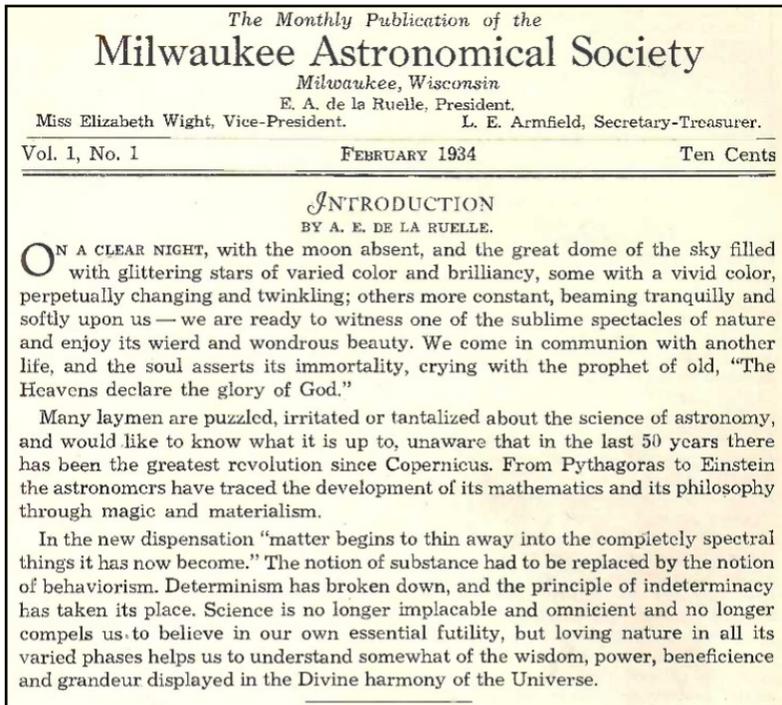
[End-of-complicated-explanation]

So far the upshot is that far as we can tell, the website is working exactly as it did and only a small amount of content needed to be modified.

continued on the next page

Website Report

Old Newsletters Posted



After placing all the old Focal Points and Double Domes going back to 1968 on our website, I was able to locate additional newsletters from one of the filing cabinets at the observatory. The Double Domes go back to 1958 and though there could be more. The text in the January '58 issue indicates that there was a considerable period of time when there was no newsletter. These have been scanned and are available on our website. In addition, I found some of our earliest newsletters from 1934 until late 1938. I have completed scanning them and have posted them to the website.

This leaves us with a significant gap between 1939 and 1957, although the period of 1942-1945 was World War II and our observatory was effectively shut down during that period because of gas rationing. It may be I have all the newsletters that were published.

Respectfully Submitted,
 Gene Hanson, Observatory Director

MAS Event

On Tuesday, March 17th a **Boy Scout Group** with parents (about 23 people) has visited the observatory. Gene Hanson, Observatory Director and Paul Borchardt gave a presentation about the MAS and amateur astronomy. Luckily, we had a clear night, so the guests were able to see some planets and deep sky objects, among others Venus, Jupiter, Sirius & Betelgeuse (showing the color differences of stars), the Orion Nebula, M35, double cluster, Pleiades, and Comet Lovejoy (which is still fairly bright).



Variable Star Observing

Z Ursae Majoris (Z UMa) Project

The purpose of this project is to give MAS members an introduction to variable star observing. This project has a long history starting as early as year 2000. Those who participated even sent their observations to the American Association of Variable Star Observers (AAVSO). Now the MAS is reactivating the Z UMa project. It will be interesting to see if the behavior of Z UMa's brightness variations has changed since we stopped observing nearly a decade ago. We encourage everybody who is interested in variable stars to join. We will collect all observations and generate a light curve, which will be published in the website along with the names of the observers.

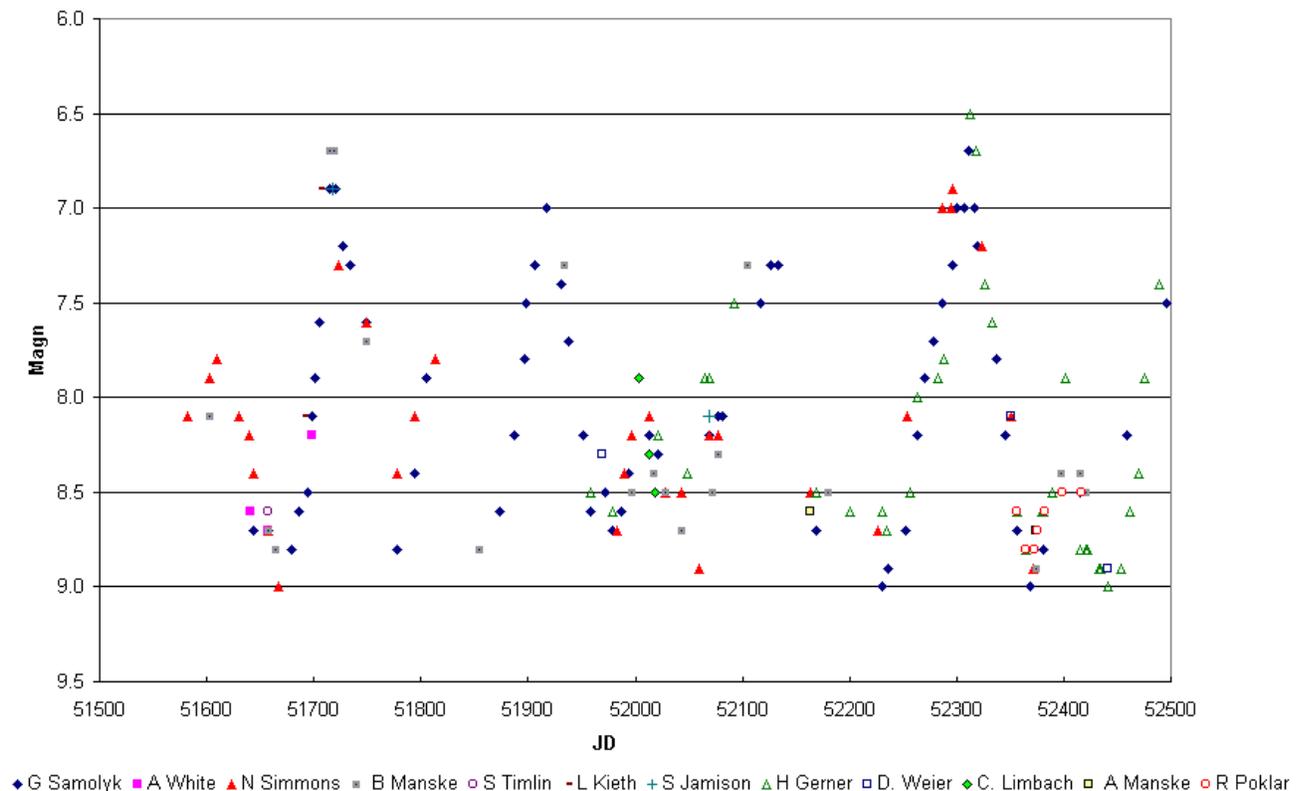
Z UMa is a circumpolar variable star high in the springtime sky. It is a semi-regular red giant that varies brightness between magnitudes 6.2 and 9.4. Sometimes it is bright enough to view with

binoculars, other times you need a telescope. Currently, the dipper is climbing out of the Northeast after sunset. Right now Z UMa is fading and is best viewed in a small telescope. The brightness should be observed approximately weekly, and compared with neighboring stars of known magnitudes by using a chart provided.

You can find more details about Z UMa Project and about the observing techniques on the webpage in the Variables section of the MAS website, or by going directly there with this link: <http://www.milwaukeeastro.org/variable/ZUMa.asp>.

Gene Hanson and Neil Simmons will be available to answer questions on the Google group (or in person at the Observatory) although others who have done this are welcome to pop into the discussion too.

2000 - 2002



In the Astronomical News

The Milky Way's New Companion Galaxies

For some cosmologists – like the Galactic Archaeologists – the focus is the local universe, asking if we can learn about the evolution of our own Milky Way from what we see around us. So far, we simply haven't scanned the immensity of the entire sky in enough detail to reveal its secrets. But new surveys with new telescopes are opening up the sky, and what they are revealing is quite surprising.

So, what have they discovered? Two new papers appeared just this month announcing the discovery of new "dwarfs" of the southern sky, small galaxies with only a few hundreds of millions of stars. What do these observations tell us about the universe? It's an interesting tale!

Let's start with the formation and evolution of galaxies. Over the past 30 years, with the explosive growth of computing power, our cosmological understanding has been revolutionized with synthetic universes revealing how galaxies are born from the featureless cosmic soup of the Big Bang. Unlike the real universe, through our *universe-within-a-computer* we can accurately track the motions of mass, watching both dark matter and gas flow together, building galaxies over cosmic time. In these synthetic universes, we would expect the Milky Way to be surrounded by many thousands of smaller dwarfs. If the Milky Way is really accompanied by such a wealth of smaller galaxies, it would be strong evidence that our ideas of galaxy evolution are pointing in the right direction. So, are they there?

The problem with finding dwarfs is that there is a lot of sky to look at. Dedicated survey telescopes with specialized optics are required. Over the last few decades, the Sloan Digital Sky Survey (SDSS) has patiently imaged a huge swath of the northern sky, finding many millions of distant galaxies. But Sloan also yielded many more dwarf galaxies in our own backyard, some reasonably large, with billions of stars, as well as

some so puny, with a thousand stars or so, that it is difficult to know whether it is really a galaxy or just an errant bunch of stars. And are the huge numbers of dwarf galaxies predicted by our model universe within a computer actually there? The simple answer is: no!

Instead of many thousands, SDSS saw only a handful. This missing satellites problem has significant implications for our understanding of galaxy evolution. But to know just how bad the

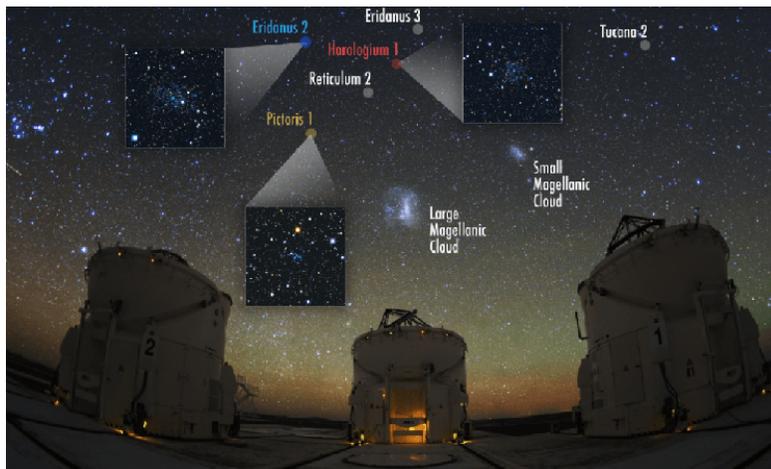
problem is, we need to know just how missing the dwarfs really are! Before we can fully answer the question, we need to survey the southern sky!

There is a steadily growing army of survey telescopes but, at the moment, out in the lead is a survey that is not focused on local universe at all.

Astronomers have planned new observational approaches to uncover the secrets of dark energy. Currently, a new camera, DECam, on the Blanco 4m Telescope in Chile is on the case. Its goal is the Dark Energy Survey (DES). To do this, DECam will survey a huge swath of the southern sky. As DECam stares into the distant universe, it also captures all the things in between, so its data will be a goldmine for a broad range of science.

The discovery of these new dwarfs does not solve the missing satellite problem, but is providing clues to bridge our gap between the observed and theoretical universe. The clustering of these dwarfs around the Magellanic Clouds may point towards all of these galaxies having fallen together into the Milky Way as a small group. If this really is the accretion of a group, it opens an exciting window onto galaxy evolution.

These new galaxies were found in the first year's worth of data from DECam, with more data becoming available on a yearly basis. With more and more sensitive eyes pointing at the sky, we can expect many more dwarfs of the southern sky to be revealed.



The Magellanic Clouds and the Auxiliary Telescopes at the Paranal Observatory in the Atacama Desert in Chile. Only six of the nine newly discovered satellites are present in this image. Credit: V. Belokurov, S. Koposov (IoA, Cambridge). Photo: Y. Beletsky (Carnegie Observatories)

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	Vacant	8"/14" Celestrons	Ray Zit Observatory
8	Vacant	10" LX 200	Jim Toeller Observatory

At Your Service

Officers / Staff

President	Scott Jamieson	262-592-3049
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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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Dennis Roscoe	608-206-0909
Michael Smiley	262-825-3981
Sue Timlin	414-460-4886
Dan Yanko	262-255-3482

February/March Keyholders

3/28	Dan Yanko	262-255-3482
4/4	Russell Chabot	414-881-3822
4/11	Brian Ganiere	414-961-8745
4/18	Paul Borchardt	262-781-0169
4/25	Gene Hanson	262-354-0138
5/2	Scott Jamieson	262-592-3049



MAS Observatory

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