



November, 2015

Membership Meeting on November 20th

The next Membership Meeting will be on November 20th at 8:00PM at the Observatory. **Matthew R. Brinson**, Graduate student at UWM, Physics Department will give a presentation entitled “**Relic gravitational waves: Echos from the big bang**”. The meeting will be preceded by the Board Meeting starting from 7:00PM.



‘Listen! There they are again – echoes of the Big Bang. The beginning of creation!’

“Relic gravitational waves (GWs) are ripples in the fabric of spacetime left over from the explosive birth of our universe. They are of great scientific interest since they offer a unique way to experimentally test both high energy physics and theories of gravity. I will discuss the evolution of relic GWs from their production at the earliest moments of the universe, to the observable effects that they are predicted to leave in the cosmic microwave background (CMB).”

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Christmas Party



The Milwaukee Astronomical Society is organizing the annual Christmas Party on December 5th at 4:00 PM at the Observatory. Just as last year we are going to have a potluck so bring your favorite dish to share. Pizza and beer/soda will be provided. Donations of \$5/person, or \$ 8/family will be collected.

Since this will be a keyholder night we might be observing after the party weather permitting.

Please, join us and bring your family to celebrate together!

Observatory Report

As I wrote last month, great progress has been on the new Toeller observatory, headed by Jeff Kraehnke. Details were written up in the Focal Point. I want to add my thanks to everyone who helped out.

The open house season is now over. We did not have a great start as we were cursed with bad weather. Fortunately, the last 3 nights had clear weather. Our special open house for the total lunar eclipse was huge success with an estimate of 200 guests on that night! My thanks to all those who participated and especially the Open House Chair, Sue Timlin.

Paul Borchardt is working on A-scope making parts for a new smaller secondary which should provide clearer images.

On the website we expanded our Showcase section with a special area called MAS showcase for Messier objects taken with our observatory equipment. We are doing this to encourage our members to take images of all the Messier list.

Our thanks to Steve Volp whose expertise was able to make this a reality. We now have a big job of updating a variety of the M objects pages as we have taken many qualifying images over the years.

Respectfully Submitted,
Gene Hanson, Observatory Director

Treasurer's Report

\$4,762.67	Ending Balance as of 9/16/2015
	Expenditures
\$74.81	WE Energies
\$9.15	PayPal Fees
\$100.00	Lamberts stipend
\$1,645.05	New Observatory
\$7.50	New Berlin water/sewer
\$410.81	Fire extinguisher, gas, lights
-\$2,250.32	TOTAL Expenditures
	Revenue
\$46.00	Donation Ganiere
\$573.00	Tours, Public Donation
\$788.00	Membership Dues
\$1,407.00	TOTAL Revenue
\$3,919.35	Ending Balance as of 10/14/2015

Respectfully Submitted,
Dennis Roscoe, Treasurer

Meeting Minutes

Held on October 14th at the MAS Observatory, New Berlin. The meeting was called to order at 8:07 PM by Vice President, Sue Timlin.

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.

Old Business - The re-building of the Toeller Observatory has been finished, the old 14' Celestron with HyperStar has been installed and is ready to use. Thank you for Jeff Kraehnke and Tamas Kriska for running the project.

New portable lights were purchased to ensure the safety of visitors in Open Houses. Thank you for Scott Jamieson and Rob Burgess for helping with this.

New Business - The A-scope is down for maintenance.

The annual Christmas party will take place on Saturday, December 5th at 4PM. We will be having a potluck, and pizza & beverages will also be served. Donations of \$5/person or \$8/family will be collected.

The Program - Tamas Kriska and Paul Borchardt gave presentations about wide field astrophotography, followed by Lee Keith's talk about planetary imaging.



Respectfully Submitted,
Agnes Keszler, Secretary

Membership Report

Since the September Report we received 4 new applications, and all of them were paid. We now have 98 members. The renewal process continues. As of the submission of this report, we have received just 37 renewals. Gene Hanson sent a round of personal emails, but will have to send another batch as we have not received even a simple majority of current members.

Respectfully Submitted,
Tamas Kriska, Committee Chair

Observatory News

The F-Scope is Fully Operational



After two months of construction work the rebuilt roll-off shed was ready to house the old 14" Celestron telescope equipped with HyperStar. First we tested the system by controlling it on site, and found that everything was working perfectly.

The next step was to make the scope remotely controlled from the Z-building. We purchased all components including a new computer, GPS, autoguider, and remote focuser, and used a tube that was connecting the original Toeller Observatory for the communication cable. By the end of October the F-scope was fully operational.

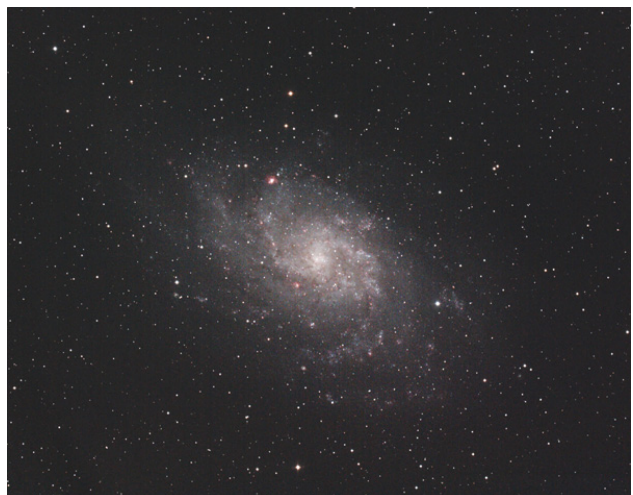
As expected, the new equipment has generated a huge interest. Couple members were already trained to use it. For somebody without prior experience it takes about 3-4 nights (3-5 hours each) to master it. If you are interested in using this telescope, please contact Jeff Kraehnke to arrange a training.

Luckily, this is really a fast scope, so we easily can image two or even three objects

during a single night taking full advantage of the rare occasions when we have clear skies without moonlight. Also, if you would like to practice image processing, all raw data are available for download.

Some of the early images were the Horsehead/Flame nebula (above) and the Triangulum galaxy (below).

The other imaging telescope, the G-scope is also operational. Training can be requested.



In the Astronomical News

Oldest Stars Found Near Milky Way

Astronomers have discovered the oldest known stars, dating from before the Milky Way Galaxy formed, when the Universe was just 300 million years old.

The stars, found near the centre of the Milky Way, are surprisingly pure but contain material from an even earlier star, which died in an enormous explosion called a hypernova.

"These pristine stars are among the oldest surviving stars in the Universe, and certainly the oldest stars we have ever seen," said Louise Howes, lead author of the study published in the latest issue of *Nature*.

"These stars formed before the Milky Way, and the galaxy formed around them," said Ms Howes, a PhD student at the ANU Research School of Astronomy and Astrophysics.

The discovery and analysis of the nine pure stars challenges current theories about the environment of the early Universe from which these stars formed.

The stars have surprisingly low levels of carbon, iron and other heavy elements, which suggests the first stars might not have exploded as normal supernovae," said Ms Howes.

"Perhaps they ended their lives as hypernovae - poorly understood explosions of probably rapidly rotating stars producing 10 times as much energy as normal supernovae."

Project leader Professor Martin Asplund,

from ANU Research School of Astronomy and Astrophysics said finding such rare relic stars amongst the billions of stars in the Milky Way centre was like finding a needle in a haystack.

"The ANU SkyMapper telescope has a unique ability to detect the distinct colours of anaemic stars - stars with little iron - which has been vital for this search," said Professor Asplund.

Following the team's discovery in 2014 of an extremely old star on the edge of the Milky Way, the team focused on the dense

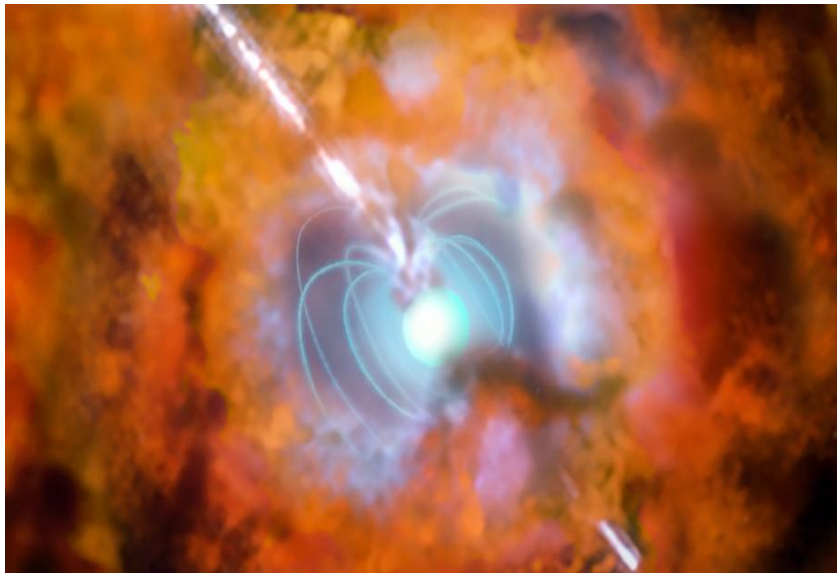
central parts of the galaxy, where stars formed even earlier.

The team sifted through about five million stars observed with SkyMapper to select the most pure and therefore oldest specimens, which were

then studied in more detail using the Anglo-Australian Telescope near Coonabarabran in New South Wales and the Magellan telescope in Chile to reveal their elemental make-up.

The team also demonstrated that the stars spend their entire lives near the Milky Way centre and are not just passing through, a further indication that the stars really are the oldest known stars in the Universe.

from Australian National University,
Research School of Astronomy and
Astrophysics



Artist's impression of a hypernova explosion (Credit: ESO)

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	14" F/11 Celestron (Gene Hanson)	Z Dome
6	Henry Gerner	12" LX 200	Tangney Observatory
7	Vacant	8" Celestron	Ray Zit Observatory
8	Vacant	14" F/2 Celestron	Jim Toeller Observatory

At Your Service

Officers / Staff

President	Vacant	
Vice President	Sue Timlin	414-460-4886
Treasurer	Dennis Roscoe	608-206-0909
Secretary	Agnes Keszler	414-581-7031
Observatory Director	Gene Hanson	262-354-0138
Asst. Observatory Director	Jill Roberts	414-587-9422
Asst. Observatory Director	Jeff Kraehnke	414-333-4656
Newsletter Editor	Tamas Kriska	414-581-3623
Webmaster	Robert Burgess	920-559-7472

Board of Directors

Paul Borchardt	262-781-0169
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
Frank Kenney	414-510-3507
Agnes Keszler	414-581-7031
Jeff Kraehnke	414-333-4656
Tamas Kriska	414-581-3623
Sue Timlin	414-460-4886

October/November Keyholders

11/21	Tim Hoff	262-662-2212
11/28	Lee Keith	414-425-2331
12/05	Brian Ganiere	414-961-8745
12/12	Henry Gerner	414-774-9194
12/19	Tamas Kriska	414-581-3623
12/26	Mike Smiley	262-825-3981



MAS Observatory

18850 Observatory Rd
New Berlin, WI

www.milwaukeeastro.org