Inside this issue:

- Membership
- Public Night
- Summer Schedule
- Observatory tour
- Yerkes Party
- In the News
- Adopt a Scope
- Officers/Staff
- Keyholders

MAS Membership Renewal

Just like last year the Membership Renewal Notice will be sent out via email. Recently, the Renewal Form was integrated into the MAS website with different payment options including Credit Card, PayPal, Money transfer or Check made payable to The Milwaukee Astronomical Society.

Open the For Members menu on the MAS website and scroll down to the Renew Membership tab on the left side, or just follow this link: http://www.milwaukeearstro.org/sendmsg/onlineRenew.asp.

Please renew your membership soon.

If you joined the MAS after January 1st, 2014 your membership is active till the 2015 renewal period.

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.

<table>
<thead>
<tr>
<th>2014 Public Observing Nights</th>
</tr>
</thead>
<tbody>
<tr>
<td>August 22, 19:30</td>
</tr>
<tr>
<td>September 12, 19:30</td>
</tr>
<tr>
<td>October 3, 19:30</td>
</tr>
</tbody>
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The MAS Summer Schedule

There will be no General Membership Meeting in June, July, and August. The September Meeting will be announced in September 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.
Maintaining a good relationship with the New Berlin Public Library is part of our public outreach. Recently our Observatory Director, Gene Hanson visited the library and gave a presentation about the MAS and astronomy.

On the Tuesday night of August 5th, a group organized by the New Berlin Public Library visited the Observatory. Paul Borchartdt and Dan Yanko coordinated this event. They gave presentations about the history of the MAS and basics of astronomy.

The presentations were followed by a tour of Z-dome, where Scott Jamieson introduced the Z-scope and its control room. As usual, people were amazed by the dimensions of that telescope, which was not operational due to the ongoing reconstruction effort.

The sky cleared out somehow unexpectedly so the visitors were able to take a look at Moon, Mars, Saturn and several deep sky objects at the end of the tour.
We had another Yerkes star party under the clouds. As always, MAS has put on a star party for the one week Yerkes Summer Institute at Yerkes Observatory on August 10th. The participants are African American high school students from inner city Chicago. An average student stays in the program for three years. Program graduates succeed at a rate that is over five times better than their peers: 100% in college, 54% Science Technology, Engineering & Math majors.

MAS was represented by seven members: Russell Chabot, Henry Gerner, Agnes Keszler, Tamas Kriska, Paul Smith, Sue Timlin, and Lance Traylor accompanied by family members.

The students could not see anything through telescopes, but fortunately this event is not all about showing celestial object to an audience. Technical aspects of astronomy is also of great interest to these students. We had to explain the working principles of our equipment and answer lots of questions.
Lurking in the centers of most galaxies, including our own Milky Way, are supermassive black holes: monsters from several hundred thousand to several billion solar masses jammed into a volume equivalent to that of our solar system. Gas or stars drifting too close will find themselves caught in the grip of the powerful gravitational field, trapped in an inexorable death spiral ever faster and tighter down toward the black hole, until voraciously consumed in a last gasp of electromagnetic radiation. Right?

Not so fast. A new study of 76 supermassive black holes, combining analysis of observations with computer simulations, reveals that some galactic behemoths have magnetic fields powerful enough to counteract the enormous pull of their gravity—thereby allowing clouds of gas or other objects at the top of the magnetic fields to levitate temporarily in place above a supermassive black hole.

Of interest are blazars: active galactic nuclei (AGNs) that beam extremely bright, energetic, collimated jets of gas at nearly the speed of light in the direction of the Earth. Such jets—which shoot out along the axis of rotation of a disk of gas accreting around a rotating black hole—emit powerful radiation at radio wavelengths. Only about one in ten AGNs have powerful radio-emitting jets.

From such radio emission independently observed by other astronomers at different frequencies using very long baseline interferometry (VLBI) from a vast network radio telescopes separated by thousands of miles, the authors determined the strengths of magnetic fields threading through the jets and central black holes of 68 blazars and eight nearby radio galaxies. Included were such famous galaxies as the beautiful spiral Messier 81 in Ursa Major, Centaurus A (the radio galaxy nearest to our Milky Way), and Cygnus A (a famous radio galaxy discovered in 1939 by radio astronomy pioneer Grote Reber).

Good agreement was found between the predictions of the computer simulations and the measured magnetic field strengths. The simulations revealed that the magnetic fields, which are twisted by the rotation of a supermassive black hole, are strong enough to counteract the pull of gravity and retard the infall of gas. The twist also transfers black hole rotational energy to electromagnetic energy of the jets, which carry it out as far as several light-years away.

Thus, the jet-launching regions of these radio-loud galaxies are threaded by dynamically important [magnetic] fields, which will affect the disk properties.

These fields obstruct gas infall, compress the accretion disk vertically, slow down the disk rotation by carrying away its angular momentum in an outflow, and determine the directionality of jets.

—Trudy E. Bell, M.A.
**Adopt a Telescope Program - Signup Sheet**

<table>
<thead>
<tr>
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<th>Scope</th>
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<td>12&quot; LX 200</td>
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<tr>
<td>Jeffrey Fillian</td>
<td>14&quot; Z-Two scope</td>
<td>Ray Zit Observatory</td>
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<tr>
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<td>Jim Toeller Observatory</td>
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**At Your Service**

**Officers / Staff**

- President: Scott Jamieson 262-592-3049
- Vice President: Brian Ganiere 414-961-8745
- 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
- Newsletter Editor: Tamas Kriska 414-581-3623
- Webmaster: Robert Burgess 920-559-7472

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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**

- 8/23 Lee Keith 414-425-2331
- 8/30 Henry Gerner 414-774-9194
- 9/6 Tamas Kriska 414-581-3623
- 9/13 Mike Smiley 262-825-3981
- 9/20 Tom Schmidtkunz 414-352-1674
- 9/27 Dan Yanko 262-255-3482

**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)

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