Focal Point

April, 2012

The April Membership Meeting

The upcoming General Membership Meeting is going to be held on April 20th, at 8:00 PM at the MAS Observatory. Patrick E. Palmer, Professor Emeritus of the Department of Astronomy and Astrophysics at the University of Chicago will give a talk entitled: **Observing with the newly upgraded Very Large Array.**

Inside this issue:

Observing with the Newly Upgraded VLA

The Very Large Array, already the most powerful radio telescope in the world, has just undergone a through updating, switching from 70's era electronics to current electronics. This resulted in greatly enhanced sensitivity and capabilities. I will provide a brief overview of the updated instrument.

I will also describe the first large project that I have begun with the upgraded instrument. That project is a study of a Galactic radio source with the uninteresting name CTB80. The region itself is far from uninteresting. Optically, the region is heavily obscured, although in places diffuse filaments and nebulosities are visible. A supernova was reported in this direction in 1408. At radio wavelengths it is not obscured. It contains three(?) supernova remnants, four regions ionized by recently formed massive stars, and two pulsars. We are able to study many aspects of this region simultaneously with the renewed instrument.

Patrick Palmer

VLA as seen from the north

Close-up of one dish

Treasurer's Report

We have received donations from Lina Darelyte for a private star party at the Observatory. Thanks go to Lina and Randy Culp for being their guide and to Chris Hesseltine, the keyholder for that evening.

Between meetings the board approved with online voting to spend up to $500 for the repair of the controller of the Zemlock telescope.

It's tax season. I am currently working on the annual taxes and the bi -annual statement to the City of New Berlin regarding the value of our property. the checking account balance as of March 16th is $5,081.02. The Albrecht fund is $8,070.44.

After compensating for projected bills, subscription payments for members and other set asides, the amount available for discretionary spending is $368.67.

Respectfully Submitted,

Neil Simmons, Treasurer

Announcements

Hello Milwaukee Astronomical Society members who purchased Astronomy Calendars. Thanks for your support for the calendar fundraiser for the MAS. We were able to sell 25 calendars. I submitted a check to the Treasurer for $73.12 in March 2012.

Please talk to your family and friends and ask them if they are interested in Astronomy calendars for 2013. I can have them available at the December meeting just in time to give out for Christmas gifts. The calendars sell for $10.00 each.

Thanks again!

Dan Yanko

Meeting Minutes

Held on March 16th at UWM, Physics Building.

The meeting was called to order at 8:01 PM by President, Henry Gerner

Minutes of the February General Meeting, was read and approved.

The **Treasurer's Report** was read by Treasurer, Neil Simmons. Copy attached.

There was no **Observatory Director's Report**

There was no **Correspondence**

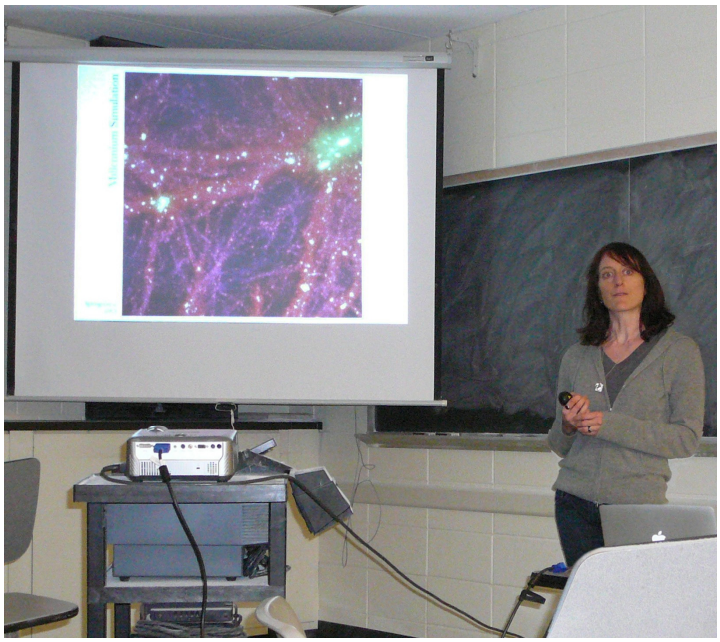
There was no **Old Business**

There was no **New Business** .

Announcement - Sue Timlin announced that the participation of new members at public nights as volunteers would be appreciated.

Russell Chabot announced a work party to be organized on Saturday, March 31 at 10 AM.

The Program Brian Ganiere announced the guest speaker : Dawn Erb, an assistant professor at the Department of Physics, UWM who gave a presentation entitled "The feeding and care of galaxies".



The meeting was adjourned at 8:58 PM

Respectfully Submitted,

Agnes Keszler, Secretary

Observatory News

Training on Mirror Cleaning

On April 7th Scott Jamieson held a training on how to clean telescope mirrors. This event generated great interest, 8 members showed up. The 18" Obsession telescope in D-shed was disassembled and Scott demonstrated the

cleaning process. The scope was reassembled and collimated using laser light. For those who missed the event, but interested in the technique the obsessiotelescopes.com website has an illustrated tutorial.

Training on Using Sky Charts

On March 31st Neil Simmons on his keyholder night run a class on how to use sky charts. We discussed how to translate the star patters from a chart to a viewfield of an eyepiece. Unfortunately the cloudy sky prevented a real-time demonstration.

Astronomy Survey

I want to thank everyone who participated in the Astronomy survey I sent out last fall. I had over 75 respondents answer the survey. I received over 20 surveys from MAS members and the rest were WCTC students on the Pewaukee Campus.

Many of the respondents were very interested in Astronomy but they thought the hobby was very complicated or expensive. Many of the respondents were not familiar with the MAS or even Astronomy clubs in general.

I did find some of the newer members were very interested in getting some additional "hands on" telescope training at the MAS. One of the ways we can do that is to get new members to help out at the Public nights. New members can work with other members on the telescopes or in the parking area to gain some valuable insight to the MAS. The keyholder nights are always a great way to show new members the equipment as well as how to get around the night sky too.

I did get a list of email addresses from the Astronomy Survey respondents and I will send out the MAS public night schedule to them so they can come out to see us at the Milwaukee Astronomical Society for some telescope viewing.

FYI, I did good on my projects and also in the Marketing Research class.
Thanks again!

Dan Yanko

First Public Night

On April 13th the MAS held its first Public Night of the season. The cloudy sky probably contributed to the very low turnout. Only ten guests visited the Observatory. The topic was: **Charles Messier and his objects.**

The following members helped to run the event: Russell Chabot, John Hammetter, Al Hovey, Agnes Keszler, Tamas Kriska, Mike Smiley and Sue Timlin. One family expressed their interest in joining the Society. The evening showed that we need to put much more effort on advertizing our Public Nights.

The next Public Night will be held on May 18th , at 7:30 PM., with Constellations—landmarks of the sky as a topic. Help from all MAS members are highly appreciated.

Replacing the 10" with Second 18" Obsession Scope

On March 24th we were having a work party to replace the 10" F/6 Newtonian telescope located in an Albrecht observatory with a second 18" Obsession telescope donated earlier by Kyle Baron. Scott Jamieson suggested this move, which was approved by the Board of Directors. Everybody agreed that this scope would serve better the needs of MAS members and would generate more observation activity. This telescope is equipped with a controller enabling a basic go-to function.

According to Tom Schmidtkunz, who tested the scope, it is performing extremely well. The motions are wonderfully smooth. Venus is sharp, and Mars and Saturn are showing good surface details. Faint star clusters, for example, NGC 2158 near M35, and NGC 1907 near M38, could be resolved. Tom also saw the Quasar 3C273, out there at nearly 2 billion light years. He found the 35mm eyepiece is great for finding things, and the 17mm is great for details.

Spring Work Party

On March 31st the MAS held its spring work party to prepare the observatory for the Public Nights. All observatories were cleaned as well as the parking lot. Maintenance was also done on some telescopes. The following members participated: Rassell Chabot, Brian Ganiere, Henry Gerner, Agnes Keszler, Tamas Kriska, Neil Simmons, Mike Smiley and Dan Yanko.

Member's Stories

Taking Outreach Around the World

I took a break from my work in Surat, India and visited the Gir Forest wildlife preserve. I stayed at the Gateway hotel. It's a small (28 rooms) and comfortable place, and a great location for taking jeep safaris into the forest. While there, I met Chaula Mazmudar, the manager of the hotel. Because this hotel is located far from city lights, she wanted to add the night sky as one of the attractions that they can offer their guests. She mentioned that they had just purchased a telescope but nobody there knew how set it up or use it. I was in the right place at the right time.

We set the telescope up on the top floor terrace of the hotel. It is a Celestron 130 on a German Equatorial Mount. They only have two eyepieces, 10 and 20mm. First, I explained the polar axis and set it up for our latitude of 21 degrees. Then, I showed them how to balance the scope.

As is got dark, we went on a tour of the evening sky. Jupiter was still visible in the west. We saw all four Galilean moons and the main cloud belts on the planet. Venus was a bit less than 50% sunlit so it showed a slight crescent. Right next to Venus was the Pleiades so we took a look, switching to the lower magnification. We then moved on to the Orion Nebula. I made it a point to show everyone these objects in binoculars as well as in the telescope so they could become familiar with where they are in the sky. We had a waxing moon so there was plenty of detain along the terminator. Mars showed a small disk but it still impressed the first time viewers.

This might not be the Star Hill Inn, but it's great to see a hotel realize that having dark skies can be used a benefit for its guests. In the winter, the weather here is pretty much clear (and warm) every night. Now that it's summer (they do not have a spring or fall here), there is a little more haze in the sky and we sometimes get a few cirrus clouds at night. So far, I have not seen a night clouded out since I arrived. The monsoon season starts in the middle of June, and runs thru September. This will bring clouds and rain. It will be difficult to observe during these months but they do get an occasional break.

I did mention to Chaula that she must learn the constellation Leo. After all, Gir is the only place in that world where Asian lions can be seen in the wild. Why not show the guests the lion in the sky as well. The lion is a symbol of the Gir forest. We have remained in contact after I returned to Surat. The telescope has been a real hit with the hotel guests. Chaula closed here last message with:

> *"But yes, I am hooked. Thanks to you. Its an amazing world ! "*

A few years ago I conducted an impromptu sidewalk astronomy session in Wuhan, China during a solar eclipse. It seems anywhere I go in the world; there are people who are interested in Astronomy. The sky knows no cultural boundaries.

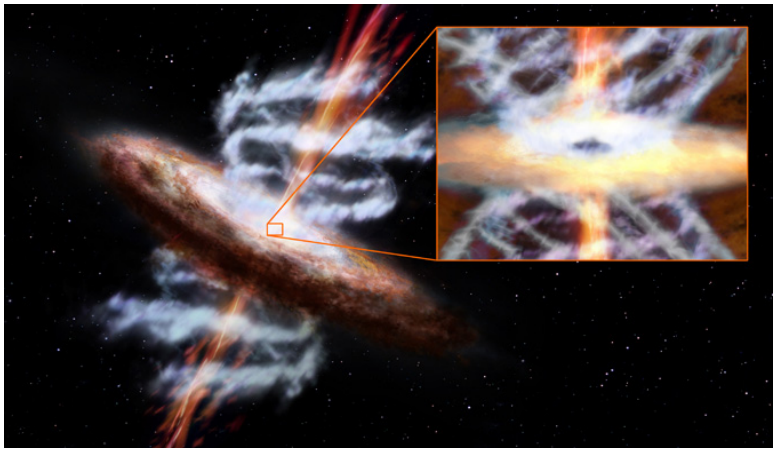
by Gerry Samolyk

In the Astronomical News

Ultra-fast Outflows Help Monster Black Holes Shape Their Galaxies

A curious correlation between the mass of a galaxy's central black hole and the velocity of stars in a vast, roughly spherical structure known as its bulge has puzzled astronomers for years. An international team led by Francesco Tombesi at NASA's Goddard Space Flight Center in Greenbelt, Md., now has identified a new type of black-hole-driven outflow that appears to be both powerful enough and common enough to explain this link.

Most big galaxies contain a central black hole weighing millions of times the sun's mass, but galaxies hosting more massive black holes also possess bulges that contain, on average, faster-moving stars. This link suggested some sort of feedback mechanism between a galaxy's black hole and its star-formation processes. Yet there was no adequate explanation for how a monster black hole's activity, which strongly affects a region several times larger than our solar system, could influence a galaxy's bulge, which encompasses regions roughly a million times larger.



Active black holes acquire their power by gradually accreting -- or "feeding" on -- million-degree gas stored in a vast surrounding disk. This hot disk lies within a corona of energetic particles, and while both are strong X-ray sources, this emission cannot account for galaxy-wide properties. Near the inner edge of the disk, a fraction of the matter orbiting a black hole often is redirected into an outward particle jet. Although these jets can hurl matter at half the speed of light, computer simulations show that they remain narrow and deposit most of their energy far beyond the galaxy's star-forming regions.

Over the last decade, evidence for a new type of black-hole-driven outflow has emerged. At the centers of some active galaxies, X-ray observations at wavelengths corresponding to those of fluorescent iron show that this radiation is being absorbed. This means that clouds of cooler gas must lie in front of the X-ray source. What's more, these absorbed spectral lines are displaced from their normal positions to shorter wavelengths -- that is, blueshifted, which indicates that the clouds are moving toward us.

In two previously published studies, Tombesi and his colleagues showed that these clouds represented a distinct type of outflow. In the latest study, the researchers targeted 42 nearby active galaxies using the European Space Agency's XMM-Newton satellite to hone in on the location and properties of these so-called "ultra-fast outflows" -- or UFOs, for short. The galaxies, which were selected from the All-Sky Slew Survey Catalog produced by NASA's Rossi X-ray Timing Explorer satellite, were all located less than 1.3 billion light-years away.

The outflows turned up in 40 percent of the sample, which suggests that they're common features of black-hole-powered galaxies. On average, the distance between the clouds and the central black hole is less than one-tenth of a light-year. Their average velocity is about 14 percent the speed of light, or about 94 million mph, and the team estimates that the amount of matter required to sustain the outflow is close to one solar mass per year -- comparable to the accretion rate of these black holes.

By removing mass that would otherwise fall into a supermassive black hole, ultra-fast outflows may put the brakes on its growth. At the same time, UFOs may strip gas from star-forming regions in the galaxy's bulge, slowing or even shutting down star formation there by sweeping away the gas clouds that represent the raw material for new stars. Such a scenario would naturally explain the observed connection between an active galaxy's black hole and its bulge stars.

by Francis Reddy

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 Armfield	A Dome
4	Dan Yanko	18" F/4.5 Obsession	Albrecht Observatory
5	Tamas Kriska	25" F/15 Zemlock	Z Dome
6	Henry Gerner	12" LX 200	Tagney 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

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Vice President	Brian Ganiere	414-961-8745
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Editor	Tamas Kriska	414-475-6267

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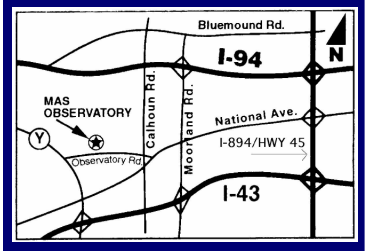
Henry Gerner	414-774-9194
Chris Hesseltine	414-482-4515
Al Hovey	262-524-5510
Agnes Keszler	414-475-6267
Tamas Kriska	414-475-6267
Lana Silke	262-966-4929
Neil Simmons	262-889-2039
Sue Timlin	414-460-4886
Dan Yanko	262-255-3482

December/January Key Holders

4/21	Brian Ganiere	414-961-8745
4/28	Henry Gerner	414-774-9194
5/5	Chris Hesseltine	414-482-4515
5/12	Tim Hoff	262-662-2212
5/19	To be determined	(see website)



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