Focal Point

April, 2014

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The April Membership Meeting

The next General Membership Meeting of the MAS will be held on Friday, **April 18th,** at UWM, Physics building, at 1900 E Kenwood Bld. The room 133 is the first big auditorium on the left side of the hallway leading to the Manfred Olson Planetarium. The meeting will start at 8:00 PM, immediately following the Board Meeting.

The speaker of the night will be **Dr. Margaret Turnbull**, a visiting Assistant Professor at UW-Madison. Dr. Turnbull is a freelance Astronomer/ Astrobiologist. Her specialty is in searching for signs of life on planets orbiting nearby stars, including intelligent civilizations. The search for alien life outside our solar system has been made less daunting thanks to a new list drawn up by astronomer Margaret Turnbull that includes the known stars most likely to support habitable stellar systems. She listed 10 of what she believes are likely to be habitable stellar systems, or "habstars," capable of supporting Earth-like planets and life. Five of the stars on the list are candidates for SETI astronomers seeking only to listen for radio signals from intelligent alien civilizations. They will be included in a list of targets for the Allen Telescope Array, a network of 42 linked radio dishes that is expected to go online this spring in California. The other five are for NASA's Terrestrial Planet Finder (TPF), a planned space telescope that would attempt to directly image Earth-like planets around nearby stars. The TPF mission was scheduled for launch around 2016, but if it is cancelled, there is a chance her list could be adjusted for the European Space Agency's Darwin mission, which is expected to launch in 2015.

Work Party on April 19th

The MAS is organizing a spring work party for April 19th, at 10 AM. The goal is to prepare the Observatory for the Public Night season. It will include cleaning and widening of the parking lots, cleaning the Quonset Hut, the domes and sheds and the restrooms. All help will be appreciated.

First Public Night on April 25th

The first public observing night is scheduled for April 25 at 7:30PM. Topic: **The Planet Jupiter**. The evening will include a presentation about the topic by Lee Keith, and viewing thru the telescopes if the weather permits. 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.

Treasurer's Report

The MAS has spent $10 on Wisconsin Department of Financial Institutions.

The income from Membership renewal fees and GE Foundation was $142.

Currently the checking account balance is at $6435.40. The Albrecht fund balance 4714.81. The Endowment Found is at $83963.90.

Respectfully Submitted,

Russell Chabot, Treasurer

Observatory Director's Report

We are experiencing trouble with the well pump. Will try to get it working by our first Public Night.

Z-dome is giving us a rotational problem and Scott has looked at this.

We received some genuine parts of the Sputnik 4 satellite that fell here in Wisconsin on September 5, 1962. Probably more of interest to us was the documentation that came along with it which was by Ed Halbach who verified their authenticity.

MAS got its 15 minutes fame when Fox News 6 visited the MAS on March 9. We were called on Thursday and got the snow blowing and shoveling done to have good access.

The website traffic immediately spiked at 5 times of normal on the day of broadcast and it is still higher by 10%. All the videos from that day and the dates of Public Nights were placed to the website.

Respectfully Submitted,

Gene Hanson, Observatory Director

Meeting Minutes

Held on March 21st at UWM, Physics building. The meeting was called to order at 8:00 PM by President, Scott Jamieson.

Minutes from the February General Membership Meeting, were read by Secretary and approved.

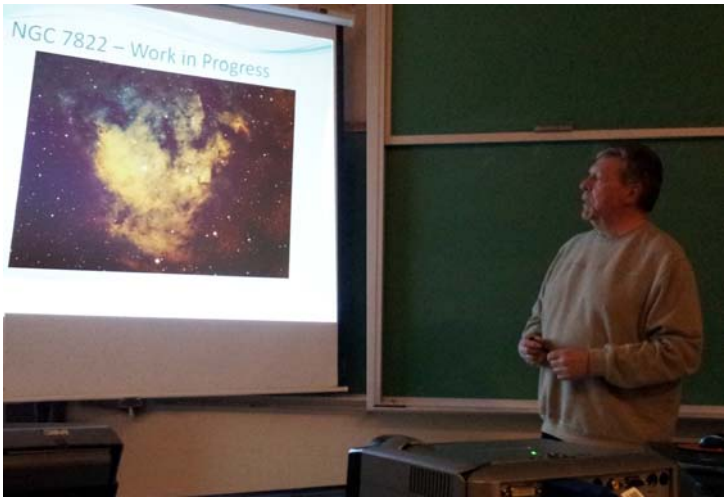
Treasurer's Report was read by Treasurer, Russell Chabot. Copy attached.

Observatory Director's Report - was submitted by Gene Hanson Observatory Director, and read by Jill Roberts Assistant Observatory Director. Copy attached.

Membership Committee - There was no new membership application. Two membership renewals arrived since the last meeting.

Old Business - The Z-dome does not rotate due to torn bolts. Scott is going to fix this problem. The well pump failed, the observatory does not have currently water. The Board approved $2500 to replace the old pump.

New Business - The new Cosmos series were discussed. Was found good despite the frequent interruptions by commercials.



The Program - MAS member Dennis Roscoe gave a presentation about the RoscoeSkies Observatory.

The meeting was adjourned at 9:12 PM.

Respectfully Submitted,

Agnes Keszler, Secretary

Replacing the Old Well Pump

S & K Pump and Plumbing, Inc. was at the Observatory Friday morning to fix our water problem. Our well pump, which was installed thirty years ago, in May of 1984 was kaputski. It was replaced, so we have a new well pump, and we have water again! S & K dumped some chlorine crystals in the well, and they will have to return later to test the water quality (state requirement). The water table is at 69 feet, which is interesting considering that we are on the top of a hill. The pump was installed to a depth of 105 ft. of a 170 ft. deep well.

Brian Ganiere

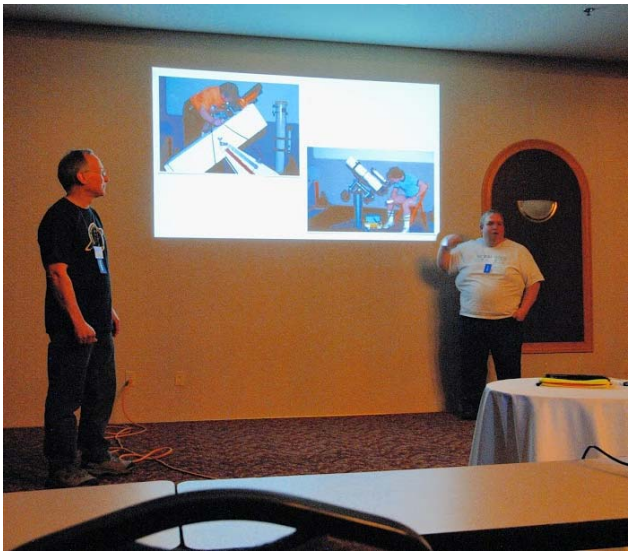
Pulling out the old pump.

The old pump.

The new pump.

MAS Attends the 2014 NCRAL

I had the pleasure to attend the 2014 NCRAL Convention held in Port Washington, and hosted by the Northern Cross Science Foundation on April 4-5, representing the MAS. Though the main day of the conference was Saturday,



Friday was a "can't miss" day because there was a presentation by Jeff Setzer and Kevin Bert called "Epoch What?" which chronicled their years of amateur astronomy and the instruments they lusted after or bought. One of their photos at a gathering in Racine even showed one of our 10 inch Portascopes. The other presentation that night, however, was rather depressing as it was on light pollution. We may need to spend a considerable effort in the coming years as outdoor lighting shifts to LED which could increase the problem dramatically.

The other reason not to miss Friday was the chance to tour the Jim & Gwen Plunkett Observatory at Barrington Beach State Park, which was built and operated by their club. It's a single building with a large roll-off roof with the main scope being a 20 inch, f/4.5 Newtonian reflector on a fork mount. Unfortunately, though the skies were generally clear, it was also snowing simultaneously so no viewing.

Saturday started with two of the best presentations I have experienced in my 30+ years of attending astronomy conferences. The first was by Dean Regas, who has taken over as co-host of Star Gazers after Jack Horkheimer passed away. It was on eclipse and transit chasing and after hearing him it was no wonder he was chosen for Star Gazers.

He was followed by local meteorologist Bart Adrian who was a weathercaster for WITI-6 for 28 years and now teaches at UWM. His talk was basically about the thermometer and related weather phenomenon like air pressure. Now he chose that topic for our group because unknown to most people (including me and most of the

audience) is that Galileo is the one credited with the invention of the thermometer.

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MAS Attends the 2014 NCRAL

But certainly this is one of Bart's "canned" presentations he's made over the years and really one criticism we could have leveled was that he didn't tailor it to an audience that otherwise needed no introduction to Galileo. Rather than show a diagram of the moons positions on those first few nights as a slide projection, he used people from the audience and moved the people around to show the various positions, using a small telescope simulating looking at them. Obviously for a non-astronomical

audience it was far more interesting this way, but for our group he could have skipped all of it. I'm betting everyone not only knew that Galileo discovered those moons, but there wasn't a single person there that hasn't seen Jupiter and its moons in a real telescope.

However, it was enjoyable nonetheless and in the end it was actually great that he didn't modify his presentation because many in the audience make astronomical presentations (especially for kids) as part of their club memberships and this was a fun way to demonstrate this. I for one am thinking I should make a set of signs just like he did which is why I took several pictures of this.

There were also interesting presentations on Children & Astronomy (think props) and unique astrophotography by John Rummel of the Madison AS. The evening banquet featured another great talk by Barbara Becker, who has written a book about William & Margaret Huggins who were pioneers in astrospectroscopy.

One of the best things about attending conferences is meeting up with great people you've met in the past. In my case it was meeting up once again with Barry and Carol Beaman who I first encountered in 1982 when the MAS hosted the AAVSO Spring Meeting. Barry, a former AL President, has attended well over 100 conferences in his time and even he said those two talks were among the best he'd ever heard! And the other great thing is meeting new people. Finally, it was nice to hear stories of how the other astronomy clubs are doing. What they think is working and not working for them.

by Gene Hanson

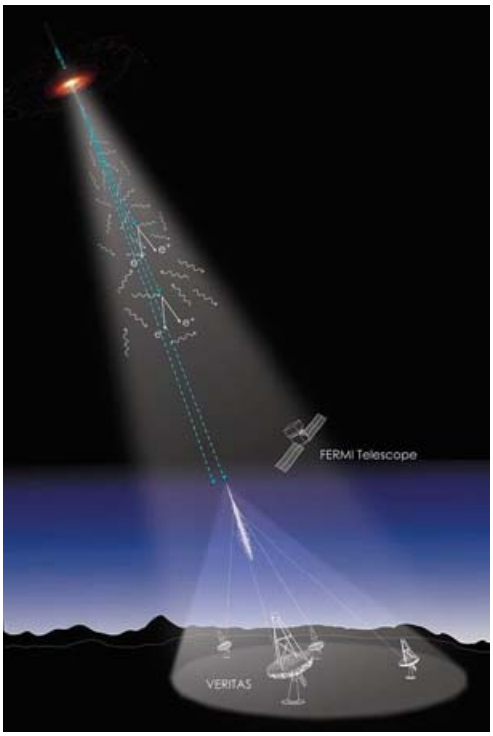
In the Astronomical News

Measuring Olbers' Paradox

Why is the sky dark at night? That question puzzled centuries of astronomers. After all, if the universe were infinite in all directions, it would be filled with an infinite number of stars, whose collective glow would make the night sky bright. So did a dark sky at night imply that the universe was not infinite? The conundrum was given the name of Olbers' paradox, after the German astronomer Wilhelm Olbers who discussed it in the 1820s.

Even from deep space far away from the lights of Earth and the stars of the Milky Way, the sky of intergalactic space is *not* absolutely black. It *does* faintly glow with photons from galaxies, both bright and those too distant to resolve with current instruments. That faint glow is called the extragalactic background light (EBL).

Streaming through deep space today in some form is almost all the light that all galaxies have radiated throughout the history of the Universe. Some of these photons are extraordinarily ancient, emitted billions of years ago and red-shifted with the expansion of the universe. Other photons are comparatively recent from local galaxies nearby. Together, these photons crisscrossing space suffuse the Universe with a faint background glow rendering the deep night-black void between galaxies not totally dark.



Gamma rays from a distant blazar strike photons of extragalactic background light in intergalactic space, annihilating both gamma ray and photon. Different energies of EBL photons waylay different energies of gamma rays, so comparing the attenuation of gamma rays at different energies from different spacecraft and ground-based instruments indirectly measures the spectrum of EBL photons. Credit: Nina McCurdy and Joel R. Primack/UC-HiPACC; Blazar: Frame from a conceptual animation of 3C 120 created by Wolfgang Steffen/UNAM

Measuring the EBL directly is difficult, however, because our solar system and the Milky Way are themselves awash in light. Only in the past year or so have astronomers succeeded in obtaining actual measurements of the elusive EBL using a clever indirect work-around: observations of gamma rays from blazars—galaxies with supermassive black holes producing jets of gamma rays that happen to be pointed at Earth.

The new measurements required combining data on X-ray and gamma-ray blazer emissions from space observatories with observations of the highest-energy gamma rays detected by Atmospheric Cherenkov Telescopes on the ground.

The result? The EBL both nearby and from earlier (more distant) epochs is consistent with expectations from the number of galaxies observed, with little room for additional light from exotic hypothetical sources. This important measurement constrains when and how the universe was reionized during the first billion years.

The EBL measurements also show that the galaxies that were shining at "cosmic high noon"—the period from about eight to twelve billion years ago when stars were forming most rapidly—were unlike most nearby galaxies. Nearby galaxies emit most of their light near visible wavelengths. But at cosmic high noon, exploding stars produced dust (made of heavier elements such as carbon, oxygen, and iron) that enveloped star-forming regions and absorbed much of the ultraviolet and visible light, which was reradiated at much longer infrared. As this dust built up in galaxies over cosmic time, it allowed later generations of stars to form along with rocky planets, including Earth.

–Trudy E. Bell, M.A.

The University of California High-Performance AstroComputing Center (UC-HIPACC), based at the University of California, Santa Cruz, is a consortium of nine University of California campuses and three Department of Energy laboratories (Lawrence Berkeley Laboratory, Lawrence Livermore Laboratory, and Los Alamos National Laboratory). UC-HiPACC fosters collaborations among researchers at the various sites by sponsoring an annual advanced International Summer School on AstroComputing (ISSAC), offering travel and other grants, co-sponsoring conferences, and drawing attention to the world-class resources for computational astronomy within the University of California system. More information appears at http://hipacc.ucsc.edu .

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	10" F/6 Newtonian	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	Vacant	10" LX 200	Jim Toeller Observatory

At Your Service

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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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Tamas Kriska	414-581-3623
Neil Simmons	262-889-2039
Michael Smiley	262-825-3981
Sue Timlin	414-460-4886
Dan Yanko	262-255-3482

April/May Key Holders

4/19	Gene Hanson	262-354-0138
4/26	Paul Borchardt	262-781-0169
5/3	Gene Hanson	262-354-0138
5/10	Jill Roberts	414-587-9422
5/17	Tim Hoff	262-662-2212
5/24	Lee Keith	414-425-2331

MAS Observatory

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