Focal Point

June, 2011

Inside this issue:

Message from the President

The Milwaukee Astronomical Society (M.A.S) offers members the chance to explore a great many aspects of astronomy, whether your interests lie with meteors, planets or variable stars. Check out the astronomy links listed.

Do you want to earn a Messier Certificate or other observing award from the Astronomical League through the M.A.S or an observing award from the American Association of Variable Star Observers (AAVSO). The society has the telescopes for you to achieve that.

The M.A.S also offers special projects and events to get involved in. Every Saturday night a key holder will help you learn the use of the equipment and get you or your family started on this exploration. A phone number is listed for you to contact that night's key holder. The society also possesses an excellent library for you to further learn more on astronomy.

Enjoy your society and have clear skies.

Henry Gerner
President

Election Meeting Decisions

It was decided to raise the Membership dues by $10 for residents, but only by $5 for non-residents. Non-resident category comprises long time members who are moved out of Wisconsin but remained loyal to the MAS. The current yearly membership dues are:

Membership	Individual	Family	Student
Resident	$46.00	$52.00	$23.00
Non-Resident	$28.00	$32.00	$20.00

The MAS members elected the new Board of Directors. Henry Gerner and Neil Simmons were reelected for the second term, Tamas Kriska and Agnes Keszler were elected for their fist term.

The new Board then elected the officers. Brian Ganiere and Neil Simmons remained Vice President and Treasurer, respectively. Agnes Keszler became the new Secretary, while Henry Gerner was elected as President of the Society.

Next Membership Meeting in September

The MAS will not hold Membership Meetings during the summer months (June, July, August). All other activities are going according to regular schedule, e.g. public nights, Saturday key holder nights, MAS picnic, issuing Focal Point Newsletter. The next General Membership Meeting will be scheduled for September and announced in the Newsletter.

Treasurer's Report

In spite of the weather this spring we have brought in about $200 in parking donations. It seems we are able to entice the astronomically interested with our talks in spite of the clouds. We have also received donations from Gerry Samolyk and a donation from the General Electric Foundation in response to a donation from Bernie Sanders. I would like to remind those of you who are inclined to donate to also check with your employer. Many companies have matching donation programs that could add a little bit more value to your dollar.

Donation of time is always valuable, particularly so when Chris Hesseltine took some of our mirrors to an optical facility in Iowa where he was visiting over the holiday. The money saved in shipping helped pay to recoat the mirror set for one of our loaner scopes. And as a final note, Dan Yanko came through with a few extra sawbucks from calendar sales. Thank you all for your contributions.

Those of you in need of re-aluminizing their personal mirrors, the MAS has received coupons from Optical Mechanics of Iowa City for 10% of their coating services. This discount is only available to members of the MAS. A hand-full of coupons have been left near the log book in the office of "Z."

We have a checking account balance of $3,545.31 as of June 13th. The Albrecht fund for the dark sky site sits at $7,887.02.

Respectfully Submitted,
Neil Simmons, Treasurer

Membership Meeting Minutes

Held on May 20th at MAS Observatory, New Berlin.

The meeting was called to order at 8:35 PM by Vice President, Brian Ganiere. Nineteen members were present. A motion was made by Gerry Samolyk, and seconded, to declare a quorum. The motion carried.

Minutes of the April 15th General Meeting were read and approved.

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

The **Observatory Director's Report** was given by Director, Gerry Samolyk. He mentioned that the "A" scope and "B" scope mirrors are going to be coated. The "Z" scope drive now appears to be functioning. Work crews organized by Russell Chabot have completed the widening of the parking lot. The lawn tractor is up and running and Gerry has cut the grass twice.

Correspondence - Dan Yanko reminded us that the deadline for renewal of Astronomical League membership is mid June. The cost is $7.50. Tamas Kriska mentioned that we are invited to a Madison Astronomical Society event. Details will be given in the Focal Point.

There was no **Old Business**

New Business - Neil spoke to the need for a $10 dues increase which the Board had approved at it's February meeting. He said the increase will not cover all of our expenses but just the ones we need to exist.

A motion was made by Gerry Samolyk, and seconded, that we raise dues by $10 for resident memberships, but to raise the dues by only $5 for those in the non-resident individual and family categories, and that the non-resident student category should be raised to $20.

A motion to amend was made by Dan Yanko, and seconded, to increase the dues by $10 for all membership categories, as proposed during the February Board meeting. The motion to amend was lost, the original motion carried.

Elections - The MAS election results are as follows:

Four Board positions - Henry Gerner, Tamas Kriska, Agnes Keszler and Neil Simmons

Secretary - Agnes Keszler, Treasurer - Neil Simmons, Vice President - Brian Ganiere, President - Henry Gerner

Announcements - Our next Public Night will be held at the observatory on May 27th. The topic will be, "Saturn's Rings". We are in need of volunteers. Neil advised that "B" scope not be used during the upcoming Public Night as the mirror is going to be re-aluminized. Also, the ladder in "B" dome is not to be moved.

The meeting was adjourned at 9:12 PM

Respectfully Submitted,

Lana Silke, Secretary

Observatory Director's Report

The mirrors for the following telescopes were taken in for re-coating by Chris Hesseltine: A scope, B scope, and one of the 8" loaner scopes. The mirrors for A and B were done the same day and Chris brought them back; the 8" will be shipped back when done.

The B scope mirror has been installed and culminated by Neil Simmons. That scope is back in service. The A scope mirror is still in the box, as of yet nobody has "adopted" the A scope.

In preparation for our public observing of the Sun on 24 June, a few trees have been topped to improve the horizon for B scope. We typically use our objective filter on that scope for public Sun observing. The filter housing is a bit oversized for the B scope tube so some foam shims are required to center the filter. It may be a good idea to tape the filter to the tube to make sure it does not fall off during viewing. Also, make sure to cover the objective of the finder. We need to make sure that none of our visitors look at the Sun thru the finder.

Neil received an email regarding a possible dark sky observing site that may be available for purchase located on Tower road near Palmyra. Neil, Scot, and myself have each taken a look at the property. There are a number of issues that need to be resolved before we can consider this land. So far no price has been discussed.

Two weeks ago, Jill Roberts dumped a large pile of yard waste in the west parking lot at the observatory. I have not had a chance to ask her when she plans to clean this up but she needs to get that done soon so we have maximum parking available for our next public night.

Respectfully Submitted,

Gerry Samolyk, Observatory Director

Public Observing Nights

The third Public Observing Night was held with moderate turnout. Despite the cloudy sky 25-30 enthusiastic guests showed up. Brian gave a presentation about the Saturn. It was not possible to do any observations, but the visitors were given a tour of the Observatory. We collected $50 from parking fee ($5/car) for the MAS.

2011 Public Observing Nights	
April 8	The Moon
May 6	Eta Aquarid Meteors
May 27	Saturn's Rings
June 24	The Sun & Sunspots
August 19	The Milky Way Galaxy
September 23	Galaxies
October14	The Fall Constellations

The fourth public observing night is scheduled for June 24th at 6:00PM at the MAS Observatory. Topic: **The Sun & Sunspots**. The kind help of MAS members during the night is encouraged and highly appreciated.

Annual MAS Picnic

The Milwaukee Astronomical Society is organizing the Annual Picnic for MAS members and their guests. The event will be held on July 30th, 4:00pm at the MAS Observatory in New Berlin. Beverages and charcoal grills will be provided, the members should bring the food. We will do observing that evening weather permitting. More details will be announced as they become available

Member's Stories

Remote Imaging Part 2: How it works

In the previous article, I covered the background on remote imaging. Here, I'd like to talk more about the specifics. Say, you want to image M81, and this is a suitable night for this object, in terms of local weather, and height of object above horizon. You can verify the weather by checking the clear sky clock for that site, plus checking out the constantly updated weather webcam.

GRS (Global Rental Scopes) has set up and intuitive and easy to use interface for allowing you to control the telescopes, and monitor what is going on at all times. When you start your run, you enter your target object, and the number of exposures with or without filters, and select binning options, then click on the start imaging box.

M45, Takahashi FSQ-106 refractor, SBIG STL-11000M camera, L channel: 8 x 6 minutes, binned 1:1, R, G, B channels 4 x 5 minutes, binned 2:2. Total exposure 2 hrs.

Once you start your image, you go click on the monitor system box. This will show you exactly what is happening: the scope slews to object, optimizes focus, selects guide star, tracks, and begins imaging. As each image is completed, a partially processed image goes to the system monitor screen, so you can immediately see what your results are. It is very cool to see your first images appear, having been obtained from perhaps thousands of miles away. This is, after all, what professional astronomers do.

If the weather suddenly gets bad, or it gets very windy, the session would be terminated and the roof would close. The system/equipment would reopen later when weather improved. This only happened to me once. Also, if you get your first image back, and for some reason you don't want to continue, you can terminate this session, and start another session later.

After you have completed your session, you will get an email detailing the charges to your account for the rental, and your images will be available via an FTP application. You will be provided with unaltered and fully reduced (bias, dark frame, flat field subtracted) FIT files. You can them copy these to your own computer for further processing. When your session is complete, the telescopes "parks", and is available to the next person.

I generally plan for multiple imaging possibilities, so that if a scope I planned on using is in use, and am ready to go ahead with plan 'B'. Generally there are always some wide angle, and some smaller field objects on my 'to do' list for a given time. My general experience, plus what I have learned for others, is that taking longer exposure sequences is better. That is, you will generally get much higher quality images with six 10 minute shots than with thirty 2 minute shots. You have to balance your desire for better images and longer exposures, of course, against cost of equipment rental. Generally, I will have about 2 hours of exposures per object. With star only objects, such as globulars, a much shorter exposure is fine. Galaxies and nebula require the longer exposures for the faint outer reaches.

The mechanics of getting the data, I think, are not that difficult. The real skill is in processing these images. There is a lot of data that is hidden in the images that quality processing can reveal. Many times the detail you want in a galaxy, for example, is hidden in a relatively small range of the data you get back. The skill is being able to pull this out of the raw data. I have friends that can help with issues regarding processing, if I get stuck. I have started a log for my experiences, going back a few years now, for what works and what doesn't, both with imaging and image processing. I found this to be very helpful.

This journey has been very rewarding for me. I can image details in distant galaxies that no telescope could ever show. Just as vacation pictures provide a record of your travels, these astronomical images for me are the record of my travels through the universe, and of journeys that I will never tire of making.

by Tom Schmidtkunz

In the Astronomical News

Free-Floating Planets May Be More Common Than Stars

Astronomers have discovered a new class of Jupiter-sized planets floating alone in the dark of space, away from the light of a star.

The discovery is based on a joint Japan-New Zealand survey that scanned the center of the Milky Way galaxy during 2006 and 2007, revealing evidence for up to 10 free-floating planets roughly the mass of Jupiter.

The discovery indicates there are many more free-floating Jupiter-mass planets that can't be seen. The team estimates there are about twice as many of them as stars. This would add up to hundreds of billions of lone planets in our Milky Way galaxy alone.

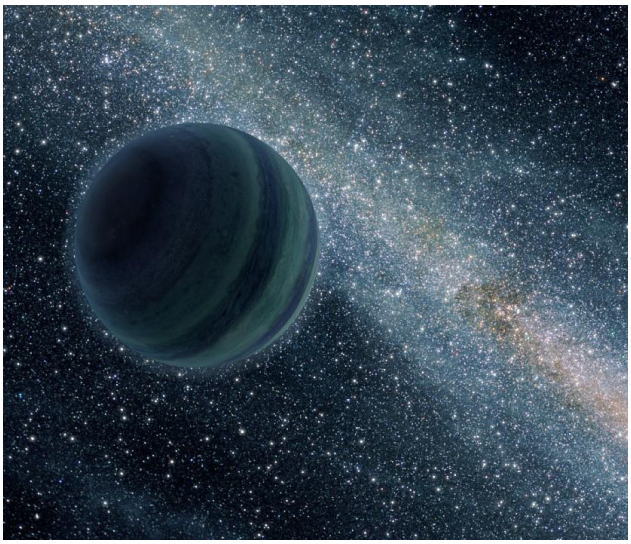
"Our survey is like a population census," said David Bennett, a NASA and National Science Foundation-funded co-author of the study from the University of Notre Dame in South Bend, Ind. "We sampled a portion of the galaxy, and based on these data, can estimate overall numbers in the galaxy."

The study, led by Takahiro Sumi from Osaka University in Japan, appears in the May 19 issue of the journal Nature.

Previous observations spotted a handful of free-floating, planet-like objects within star-forming clusters, with masses three times that of Jupiter. But scientists suspect the gaseous bodies form more like stars than planets. These small, dim orbs, called brown dwarfs, grow from collapsing balls of gas and dust, but lack the mass to ignite their nuclear fuel and shine with starlight. It is thought the smallest brown dwarfs are approximately the size of large planets.

On the other hand, it is likely that some planets are ejected from their early, turbulent solar systems, due to close gravitational encounters with other planets or stars. Without a star to circle, these planets would move through the galaxy as our sun and other stars do, in stable orbits around the galaxy's center. The discovery of 10 free-floating Jupiters supports the ejection scenario, though it's possible both mechanisms are at play.

The survey, the Microlensing Observations in Astrophysics (MOA), is named in part after a giant wingless, extinct bird family from New Zealand called the moa. A 5.9-foot (1.8-meter) telescope at Mount John University Observatory in New Zealand is used to regularly scan the copious stars at the center of our galaxy for gravitational microlensing events. These occur when something, such as a star or planet, passes in front of another, more distant star. The passing body's gravity warps the light of the background star, causing it to magnify and brighten. Heftier passing bodies, like massive stars, will warp the light of the background star to a greater extent, resulting in brightening events that can last weeks. Small planet-size bodies will cause less of a distortion, and brighten a star for only a few days or less.



This artist's conception illustrates a Jupiter-like planet alone in the dark of space, floating without a parent star.
Image Credits: NASA/JPL-Caltech

A second microlensing survey group, the Optical Gravitational Lensing Experiment (OGLE), contributed to this discovery using a 4.2 -foot (1.3 meter) telescope in Chile. The OGLE group also observed many of the same events, and their observations independently confirmed the analysis of the MOA group.

More information about exoplanets and NASA's planet-finding program is at:
http://planetquest.jpl.nasa.gov.

Adopt a Telescope Program - Signup Sheet

	Adoptee	Scope	Location
1	Sue Timlin	18" F/4.5 Obsession	D Shed
2	Neil Simmons	12.5" F/7.4 Buckstaff	B Dome
3		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		14" Z-Two scope	Ray Zit Observatory
8		10" LX 200	Jim Toeller Observatory

- Telescopes still waiting for adoption

At Your Service

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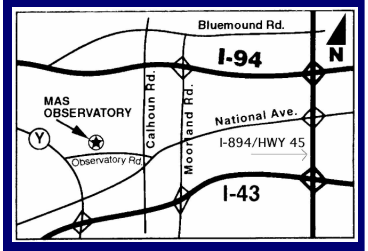
Dan Yanko	262-255-3482

June/July Key Holders

6/18	Scott Jamieson	262-896-0119
6/25	Lee Keith	414-425-2331
7/2	Scott Laskowski	414-421-3517
7/9	Jill Roberts	414-587-9422
7/16	Tom Schmidtkunz	414-352-1674



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