



MICHIANA ASTRONOMICAL SOCIETY

The Sirius Observer

May-June 2008

South Bend, Mishawaka, Elkhart, Niles

From the President:

I would like to start this letter by thanking everyone in the club that has helped make my last 5 years as your president so enjoyable. I have enjoyed watching the club grow and evolve into something that I think we can all be proud of! I will miss being president of the Michiana Astronomical Society!

I would also like to thank those that have contacted me and tried to sway me from stepping down this month. I appreciate your efforts to keep me in office, and I have really given running for president again a lot of thought, but in the end I will stick to my decision. This club is going in a great direction and I think it needs a new fresh perspective in the top office, and to be honest, that person is not me. I think that whoever is elected president this month will be more than able to make exciting things happen for this club. It's an exciting time, and I look forward to being a member for many more years.

There has been some interest in going on another field trip to the Adler Planetarium this summer, and I'd like to propose going on Saturday, July 12th. I know some have expressed a desire to drive instead of taking the South Shore, and I think we can discuss this more at the meeting and on the email list. For those who haven't been to Adler in a few years, they have done a lot of remodeling and it's a bit different than it used to be. I think it'll be a fun trip and I hope we can get a good group to go this year.

Remember that on most clear weekend nights someone will be down at Potawatomi Wildlife Park. If you need directions or just want to know if anyone is going, contact an officer or send out an email to the Yahoo email list.

Thank you all again for the last 5 years!

Tom Nowicki-Nowicky Nowicki

Event Calendar

May 2008

Sun	Mon	Tue	Wed	Thu	Fri	Sat
				1	2	3
4	5 ●	6	7	8	9	10
11	12 ◐	13	14	15	16	17
18	19 ○	20	21	22	23	24
25	26	27	28 ◑	29	30	31

May 2-4: **Star Party at Potawatomi!!!**
 May 5: New Moon
 May 12: First Quarter Moon
 May 19: **MAS meeting, 7:00 PM**
 May 20: Full Moon
 May 28: Last Quarter Moon

June 2008

Sun	Mon	Tue	Wed	Thu	Fri	Sat
1	2	3 ●	4	5	6	7
8	9	10 ◐	11	12	13	14
15	16	17	18 ○	19	20	21
22	23	24	25	26 ◑	27	28
29	30					

Jun 3: New Moon
 Jun 7: New Moon observing, Potawatomi
 Jun 10: First Quarter Moon
 Jun 16: **MAS Meeting, 7:00 PM**
 Jun 18: Full Moon
 Jun 26: Last Quarter Moon

MAS meeting minutes

April 21, 2008

President Tom Nowicki opened the meeting with nominations for upcoming vacancies of these offices: President, Vice-President, Secretary and Member-At-Large.

Nominees for their choice of office were: Bill Foreman, Jerry Karacsony, and Eileen Murphy. Mike Sherck was nominated, but declined, and Linda Marks was nominated to continue as secretary but declined. Dan Smith remains as treasurer, which is an appointed position. (Ed. Note: From the May meeting, Jeff Perry threw his hat into the ring for President.)

Eileen Murphy reported that a cash donation was received by her to set up a tent raising dinner. Linda will bring the leftover soda pop from our last picnic to supplement the dinner.

There will be a program at St. Patrick's Park on Friday, April 25th. Jeff Perry will run the indoor program and Jerry Karacsony will assist. Telescopes will be brought by Jerry, Mike Sherck, and Linda and Steve if it is not cloudy. The park closes at 10 p.m.

Bob Warren brought several books about Meteor Crater, Upheaval Dome and Rhys Crater in Germany. Bob authored one of these books!

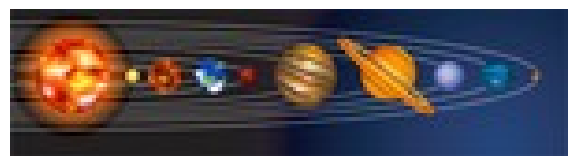
If anyone wants one year's worth of Sky & Tel magazines, see Mike Sherck (or he will recycle them).

A donation was made to the Michiana Star Party as a door prize. Alan Zucksworth of the Miami Valley Astronomical Society in Dayton, Ohio, mailed the admission ticket to the Apollo Rendezvous to club secretary Linda Marks. A thank you note is in order.

Linda Marks made a final check of personnel and donations for the star party. A big thank you goes out to all that have already helped and all of those whose help will come in handy very soon.

Steve Accuosti and Linda will bring the tent back to the Army Reserve.

Respectfully submitted by Linda Marks, Secretary.



MAS Meeting Minutes

May 19, 2008

The May MAS meeting was held Monday, 5/19/08, at 7PM in the Lions

room of the Mishawaka main library. Attendees were Ruth Craft, Bill Foreman, Jerry & Katie Karacsony, Tom Nowicki, Jeff Perry, Mike Sherck, & Mark Suhovecky.

Ruth led the group through a Night Sky Network exercise designed to illustrate the relative distances of various galactic objects. Using a scale of 1 quarter = 100,000 light years, M31 was 30 inches from our own Milky Way galaxy, M81 & M82 were 4 yards away, the nearest Quasar was 4/10s of a mile away (think Hacienda) and the Hubble deep field was 2.5 miles (we didn't actually pace off this one.)

We briefly discussed our Star Party earlier this month. We made money, could have used more help tearing down on Sunday, and of course are always at the mercy of the weather.

Mike apologized for the lateness of the Newsletter this month.

The group signed two thank-you cards to send to our Star Party Speakers.

Jeff Perry announced his intention to run for club president in elections next month.

Ruth polled the members present for their fields of interest, which led to some interesting discussion- if only the VP had continued to take notes during it all...

The meeting was adjourned around 8:15PM.

-MS

Note: Elections for club officers will be held at the JUNE meeting.



To the Moon, Alice! To the Moon!

You can go to the Moon! Well, your name can, anyway. NASA is taking names to be taken to the Moon aboard this fall's Lunar Reconnaissance Orbiter (LRO) spacecraft. To provide your name and get a spiffy certificate ready for printing, direct your web browser to: <http://lro.jhuapl.edu/NameToMoon/index.php>

The deadline is June 27th.

To the stars, Alice! To the stars!

NASA's Kepler mission will launch in February, 2009 to look for Earth-like planets orbiting nearby stars. Kepler will carry a DVD containing the names and comments of the public. Go to <http://www.seti.org/kepler/names/> before November 1st to make your own personal contribution.

EXO WORLDS**Astronomers Find Tiny Planet Orbiting Tiny Star**

Artist's conception of the newly discovered planet MOA-2007-BLG-192Lb orbiting a brown dwarf "star" with a mass of only 6% of that of the Sun. Theory suggests that the 3-earth-

mass planet is made primarily of rock and ice. Observational and theoretical studies of brown dwarfs reveal that they have a magenta color due to absorption by elements such as Sodium and Potassium in their atmospheres. An alternate artist's conception of the planet MOA-2007-BLG-192Lb, under the assumption that the host star has a mass of 9% of that of the Sun, which is also consistent with the microlensing data. This would be a red dwarf star about 100 times brighter than the brown dwarf, but 1000 times fainter than the Sun. Images credit: NASA's Exoplanet Exploration Program.

by Staff Writers

St. Louis, MO (SPX) Jun 02, 2008

An international team of astronomers led by David Bennett of the University of Notre Dame has discovered an extra-solar planet of about three Earth masses orbiting a star with a mass so low that its core may not be massive enough to maintain nuclear reactions. This result is being presented in a press conference at the AAS meeting in St. Louis, MO.

The planet, referred to as MOA-2007-BLG-192Lb, establishes a new record for the lowest mass planet to orbit a normal star. The star, MOA-2007-BLG-192L, is at a distance of 3000 light years and the lowest mass host star to have a companion with a planetary mass ratio.

The mass of the host is about 6% of the mass of the Sun. Such a star is called a brown dwarf, because this is slight below the mass needed to sustain nuclear reactions in the core. But the

measurement uncertainty also permits a host mass slightly above 8% of a solar mass, which would make MOA-2007-BLG-192L a very low-mass Hydrogen burning star.

"Our discovery indicates that that even the lowest mass stars can host planets" says Bennett.

No planets have previously been found to orbit stars with masses less than about 20% of that of the Sun, but this finding suggests that we should expect very low-mass stars near the Sun to have planets with a mass similar to that of the Earth. This is of particular interest because it may be possible use NASA's planned James Webb Space Telescope to search for signs of life on Earth-mass planets orbiting low-mass stars in the vicinity of the Sun.

This discovery of the MOA-2007-BLG-192L star-planet system was made by the Microlensing Observations in Astrophysics (MOA), which includes Bennett, and the Optical Gravitational Lensing Experiment (OGLE) collaborations using the gravitational microlensing method.

Gravitational microlensing takes advantage of the fact that light is bent as the rays pass close to a massive object, like a star. The gravity from the mass of the intervening object, or lens star, warps surrounding space and acts like a giant magnifying glass.

As predicted by Albert Einstein and later confirmed, this phenomena causes an apparent brightening of the light from a background "source" star. The effect is seen only if the astronomer's telescope lies in almost perfect alignment with the source star and the lens star.

Astronomers are then able to detect planets orbiting the lens star if the light from the background star also is warped by one or more planets.

The primary challenge of the microlensing method is that the precise alignments needed for the planetary microlensing signals are quite rare and brief, often lasting less than a day.

This new discovery was made possible by the new MOA-II telescope at New Zealand's Mt.

John Observatory, using the MOA-cam3 camera, which is able to image an area of sky 13 times larger than the area of the full moon in a single image.

Bennett explains, "The new MOA telescope-camera system allows us to monitor virtually all of the known microlensing events for planetary signals. We would not have made this discovery without it."

The microlensing observations provided evidence that the host star has a mass of about 6% of the mass of the Sun. This was confirmed by high angular resolution adaptive optics images with the Very Large Telescope (VLT) at the European Southern Observatory in Chile. These images confirm that the planetary host is either a brown dwarf or a very low-mass star.

The planet orbits its host star or brown dwarf with an orbital radius similar to that of Venus. But the host is likely to be between three thousand and 1 million times fainter than the Sun, so the top of the planet's atmosphere is likely to be colder than Pluto.

However, the planet is likely to maintain a massive atmosphere that would allow warmer temperatures at lower altitudes. It is even possible that interior heating by radioactive decays would be sufficient to make the surface as warm as the Earth, but theory suggests that the surface may be completely covered by a very deep ocean.

This result also supports the 1996 prediction by Bennett and Sun Hong Rhie that the microlensing method should be sensitive to Earth-mass planets.

"I'll hazard a prediction that the first extra-solar Earth-mass planet will be found by microlensing. But we'll have to be very quick to beat the radial velocity programs and NASA's Kepler mission, which will be launched in early 2009."

A paper describing this result has been accepted for publication in the *Astrophysical Journal*, and it is scheduled to be published in the September 1 issue. Bennett's work is funded by the National Science Foundation and the National Aeronautics and Space Administration.

In addition to Bennett, the MOA group is made up of astronomers from Nagoya University, Konan University, Nagano National College of Technology, and Tokyo Metropolitan College of Aeronautics in Japan, as well as Massey University, the University of Auckland, Mt. John Observatory, the University of Canterbury, and Victoria University in New Zealand.

The OGLE group is comprised of astronomers from Warsaw University Observatory in Poland, the Universidad de Concepcion in Chile, and the University of Cambridge in England. Additional collaborators who provided the VLT data and analysis are from the Institut d'Astrophysique de Paris, the Observatoire Midi-Pyrenees, and the Observatoire de Paris in France, the European Southern Observatory in Chile, and Heidelberg University in Germany.

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Sherlock Holmes and Dr. Watson went on a camping trip. After a good meal and a bottle of wine, they lay down for the night and went to sleep. Some hours later, Holmes awoke and nudged his faithful friend. "Watson, look up and tell me what you see."

Watson replied, "I see millions and millions of stars."

"And what does that tell you?" Holmes asked.

Watson pondered for a minute. "Astronomically, it tells me that there are millions of galaxies and potentially billions of planets. Astrologically, I observe that Saturn is in Leo. Horologically, I deduce that the time is about a quarter past three. Theologically, I can see that God is all-powerful and that we are small and insignificant. Meteorologically, I suspect that we will have a beautiful day tomorrow. Why, what does it tell you?"

"Watson, you idiot: someone has stolen our tent!"

Michiana Astronomical Society
PO Box 262
South Bend, IN 46624



Like what you see? Come and join the fun – It's out of this world!

Michiana Astronomical Society Membership Application

Please fill out and mail, along with check or money order, to:

Michiana Astronomical Society
PO Box 262
South Bend, IN 46624

Name: _____
Address: _____
City: _____ State: _____ Zp Code: _____
Telephone: _____ E-mail: _____

Type of membership: Individual (\$15) Student or Senior (\$12) Family (\$20)