



# Focal Point



February, 2011

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## Adopt a Telescope Program

We would like to make the buildings and domes of the MAS Observatory more organized and clean to keep our instruments in better shape. Therefore, we seek volunteers to adopt telescopes from the list on **page 6**. There is still plenty to choose from.

The person who adopts a telescope would be responsible for sweeping the floor, making sure that the eyepieces are clean and put away after our public meetings. It is also necessary getting

rid of the cobwebs and wasp nests or bee hives on or around the telescope. If you would not feel safe to do this you can ask me to help you out. The maintenance would not be the adoptee's duty, he/she just needs to call for it.

More information about the buildings can be found on MAS's website. The Z-Two scope, which is not listed there is also a roll off roof observatory.

This program would be an excellent opportunity for new/less

experienced members to get familiar with the MAS's equipment.

We hope this initiative is going to make the MAS Observatory more presentable and attractive during the Public Observing Nights.

If you made up your mind please let me know in person, by phone (414-559-3502) or by email:

[ahynes@wi.rr.com](mailto:ahynes@wi.rr.com).

Russell Chabot,  
Observatory Chair

## February 18th: Membership Meeting at Charles Z Horwitz Planetarium

At the January meeting held in Charles Z Horwitz Planetarium we tried something new, an indoor star party. Steve Diesso made a presentation about the meaning of right ascension and declination, and how astronomy utilizes them to determine the location of stars and other objects in the night sky. Steve also demonstrated how to properly align an



equatorially mounted telescope using a sky projected on the dome of the planetarium.

We are going to

continue this approach at the February Membership Meeting scheduled for **February 18th, 2011 at 8:00 PM**. Information about location and directions can be found on **page 2**.

This time we are going to talk about observing the Moon.

So join us for the second indoor star party of 2011. Warm weather and clear skies are still guaranteed!!

## Find the Planetarium

Directions to Charles Z Horwitz Planetarium at the Retzer Nature Center, S14 W28167 Madison St in Waukesha: take exit 291 off I-94 and go south on Meadowbrook Rd. After about 2.2 miles turn right onto Madison Rd. Drive about 1.2 miles. The driveway to the planetarium will be on the left side of the road.



## Treasurer's Report

I would like to correct my statement in January's recognition of donors where I said, "dues only make up a small portion of what we need to pay the bills." The statement should have read, "donations make up a small portion of what we need to pay the bills, but make the vital difference in the continuing operation of the Society." I regret any confusion this may have caused.

Donations have been received from Brian Ganiere, member applicant John Folaron, and a quarter from Russell Chabot's nephew.

As reported at the January board meeting, our checking account balance is \$5,120.24 with \$497.25 available to set aside for any specific purpose. The remainder have been slated to pay bills and are endowment funds being held for disbursement to project work. The Albright fund is at \$7,886.72.

Respectfully Submitted,  
Neil Simmons, Treasurer

## Membership Meeting Minutes

**Held** on January 21<sup>st</sup> at Horwitz Planetarium

The meeting was called to order at 8:00 PM by Vice President, Brian Ganiere.

**Minutes** of the November 19<sup>th</sup> General Meeting were read and approved.

**Treasurer's Report** was given by Treasurer, Neil Simmons, copy attached (see on this page).

There was no **Observatory Director's report**.

**Old Business** - Brian mentioned that we are looking for someone to fill the unexpired term for Virgil Tangney's Board position and that Susan Timlin has been appointed to fill Kip Hoffman's term.

Our new Newsletter Editor will be Tamas Kriska. We were asked to submit any articles or information we have to him in a timely fashion.

Our holiday party on December 3<sup>rd</sup> was a success. The Lunar eclipse event which was scheduled to meet at the observatory on December 20<sup>th</sup> was clouded out.

**New Business** - Russell Chabot asked for volunteers for our new, "Adopt a Telescope" program in which members are requested to choose a telescope at the observatory and do light upkeep such as cleaning, eyepiece monitoring, etc. Sue has volunteered for the 18" and Neil for B dome.

Tim Burrus announced that Yerke's will again host the Space Explorers this year for a star party on Saturday, August 6<sup>th</sup>. MAS is invited to bring telescopes to that event. He also announced that Wild Winter Night will be held at Retzger on Saturday, February 5<sup>th</sup>. There will be planetarium shows and telescope viewing beginning at 6PM.

Dave DeRemer mentioned that the planetarium program, "Time Bandits" will be shown throughout the day at the JanBoree event on Sunday, January 23<sup>rd</sup>, for free. All are invited.

**The Program** - An "Astronomy 101" session, was presented by Steve Diesso and Dave DeRemer. Steve gave instruction on the use of setting circles and an explanation of right ascension and declination. Neil Simmons presented a video on the eclipsing binary variable star, Epsilon Aurigae and on the ongoing Citizen Sky project.

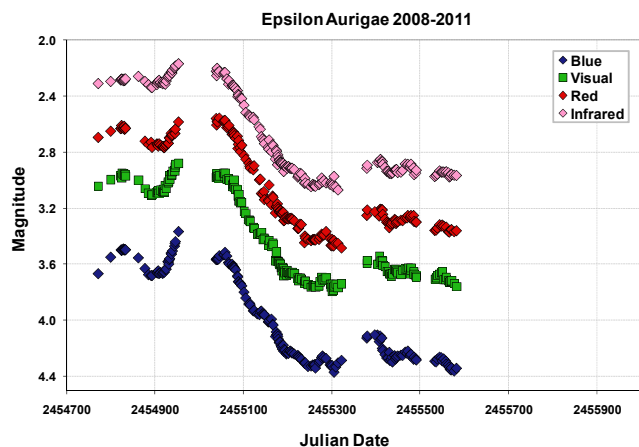
The meeting was adjourned at 9:15 PM.

Respectfully Submitted,  
Lana Silke, Secretary

## Member's Stories

### Another Epsilon Aurigae Update

Epsilon Aurigae is one of the most interesting binary stars in the sky. Once every 27 years, a large, edge on disk, transits across the face of a giant F type star. This eclipse drops the total brightness of the system by 50% and is easily observed with the unaided eye. The current eclipse began as the star emerged from the solar glare in August of 2009. I gave a program on this eclipse at our meeting in September 2009.



The plot above shows my CCD observations taken thru four filters (Blue, Visual, Red, and Infrared). The variations seen before the beginning of the eclipse are caused by pulsations in the F star. This star is close to the instability strip on the Hertzsprung-Russell (HR) Diagram. By the way, all of these measurements were made without using a telescope. I am simply using a camera on a tripod and taking 30-second exposures thru four different filters. A program called Mira was used to calibrate my images and perform the photometry.

According to current models, we believe that this disk has a hole in the center. In this hole there may be a star, binary star, or a star with one or more planets. There are many unknowns about the system. The brightening seen in the center of the light curve is probably caused by this hole passing in front of the F star. This feature is more prominent in blue and less in infrared.

Epsilon Aurigae is now visible in the evening sky. The constant phase of the current eclipse will be ending soon. At that time the brightness will begin to increase, taking a couple of months to double from its current brightness. The next eclipse will not start until 2036 so I recommend that you take a look. The star is very easy to find being a member of the "kids", the small triangle of stars near Capella. It is bright enough to be seen with the unaided eye, or in binoculars if the light pollution is bad.

The MAS website contains a special projects page. On one of these pages, you can find a chart showing the location of Epsilon Aurigae along with some comparison stars that can be used to estimate its brightness. More information can also be found on the AAVSO Citizen Sky Project website located at:

<http://www.citizensky.org/>.

Acknowledgment: A thank you goes to Neil Simmons for operating my camera rig and providing me images while I work in China.

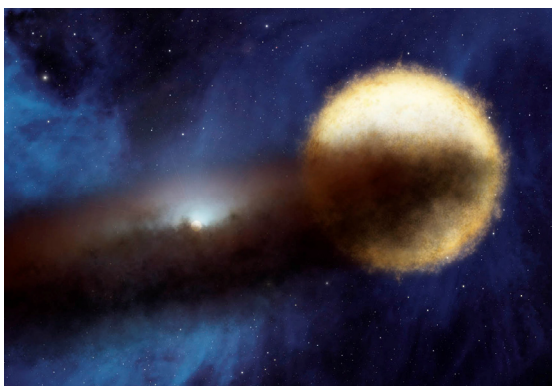
by Gerry Samolyk

Gerry Samolyk has been a member of the Milwaukee Astronomical Society since 1971. He is a Founding Member and is currently serving as Observatory Director.

## In the Astronomical News

### Century-Old Star Mystery Coming to a Close

For almost two centuries, humans have looked up and watched with their own eyes as a bright star called Epsilon Aurigae fades, then brightens back up again. In August of 2009, it began its roughly two-year dimming, an event that happens like clockwork every 27.1 years. Professional and amateur astronomers around the globe are watching, and the International Year of Astronomy 2009 marked the eclipse as a flagship "citizen science" event. More information is at <http://www.citizensky.org>.



Though astronomers know that Epsilon Aurigae is eclipsed by a dark companion object, the nature of both the star and object has remained unclear. One theory holds that the bright star is a massive supergiant, periodically eclipsed by two tight-knit stars inside a swirling, dusty disk. The second theory holds that the bright star is in fact a dying star with a lot less mass, periodically eclipsed by just a single B star surrounded by a dusty disk, as illustrated in artist's concept above.

New observations from NASA's Spitzer Space Telescope -- in combination with archived ultraviolet, visible and other infrared data -- point to one of two competing theories, and a likely solution to this age-old puzzle. Spitzer's infrared vision revealed the size of the dusty disk that swirls around the companion object as approximately four times the distance between Earth and the sun. When astronomers plugged this size information into a model of the system, they

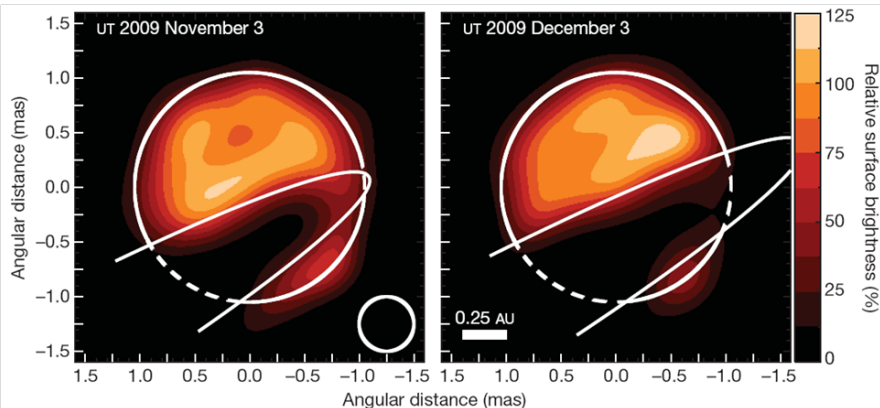
were able to rule out the theory that the main bright star is a supergiant. If they assumed the F star was actually a much less massive, dying star, and they also assumed that the eclipsing object was a single B star embedded in the dusty disk, everything snapped together.

"It was amazing how everything fell into place so neatly," said Steve Howell of the National Optical Astronomy Observatory in Tucson, Ariz. "All the features of this system are interlinked, so if you tinker with one, you have to change another. It's been hard to get everything to fall together perfectly until now."

According to the astronomers, there are still many more details to figure out. The ongoing observations of the current eclipse should provide the final clues needed to put this mystery of the night sky to rest.

*(Whitney Clavin, JPL, Pasadena, California)*

Recent data from the Michigan Infrared Combiner (MIRC) confirmed the Spitzer model. The MIRC instrument uses interferometry to combine the light entering four telescopes at the Center for High Resolution Astronomy (CHARA) array at Georgia State University and amplify it so that it seems to be coming through a device 100 times larger than the Hubble Space Telescope. The resulting images (below) show the eclipsing body moving in front of the F star. The body is an opaque disk and appears tilted as predicted. Adopting a mass of  $5.9M_{\odot}$  ( $M_{\odot}$ , mass of the Sun) for the B star, a mass of  $(3.6 \pm 0.7)M_{\odot}$  was derived for the F star. The disk mass is dynamically negligible; estimated to contain  $0.07M_{\oplus}$  ( $M_{\oplus}$ , mass of the Earth) if it consists purely of dust. (*Nature*, 464, 870-872, 2010)





## Astronomical Events

### Wild Winter Nights at Retzer Nature Center

On February 5, 2011 the Retzer Nature Center held its Wild Winter Nights event with Planetarium shows, telescope observing, night hikes, a bon fire and many more family activities.

Steve Diesso, Tim Burrus and Dan Yanko were there representing the MAS. The skies were cloudy so we did not do any telescope observing. Steve set up his telescope and laptop in the entranceway to the planetarium. We talked to the crowd that was in line waiting for the show. We talked about the MAS, handed out business cards, directed people to the MAS website for the Public Night schedule, and had discussions about different telescopes. Steve also showed moon landing videos on his laptop. Tim was giving out the tickets for the Planetarium shows and according him there were well over a hundred attendants.

by Dan Yanko



Dan Yanko has been a member of the MAS since 2000. He is currently serving as Board Director.



## 2011 NCRAL Convention



The Annual Regional Convention of the North Central Region of the Astronomical League (NCRAL) hosted by the Neville Public Museum Astronomical Society (NPMAS) is held at Ramada Plaza Hotel in Green Bay, WI, on April 29-30, 2011.

Events include a sketching workshop with Mr. Jeremy Perez, tours of Parmentier Observatory, the largest private observatory in Wisconsin, viewing of antique telescopes featuring a 10" Alvin Clark refractor, keynote speaker, paper sessions, banquets and more!

For more information contact Katrina DeWitt at NPMAS

On the web: [www.npmas.org](http://www.npmas.org), Email: [ncral2011@npmas.org](mailto:ncral2011@npmas.org), Phone: 920-405-8534

## Adopt a Telescope Program - Signup Sheet

	<b>Adoptee</b>	<b>Scope</b>	<b>Location</b>
<b>1</b>	Sue Timlin	18" F/4.5 Obsession	D Shed
<b>2</b>	Neil Simmons	12.5" F/7.4 Buckstaff	B Dome
<b>3</b>		12.5" F/9 Armfield	A Dome
<b>4</b>		10" F/6 Newtonian	Albrecht Observatory
<b>5</b>	Tamas Kriska	25" F/15 Zemlock	Z Dome
<b>6</b>		12" LX 200	Tagney Observatory
<b>7</b>		14" Z-Two scope	Z-Two Observatory
<b>8</b>		10" LX 200	Tagney Two (T-Two) Observatory

### At Your Service

#### Officers / Staff

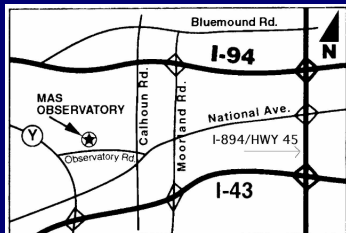
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Asst. Observatory Director	Henry Gerner	414-774-9194
Editor	Tamas Kriska	414-475-6267
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Chris Hesseltine	414-482-4515
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Jill Roberts	414-587-9422
Lana Silke	262-966-4929
Neil Simmons	262-889-2039
Sue Timlin	414-460-4886
Dan Yanko	262-255-3482

#### February/March Key Holders

2/19	Henry Gerner	414-774-9194
2/26	Chris Hesseltine	414-482-4515
3/5	Tim Hoff	262-662-212
3/12	Scott Jamieson	262-896-0119
3/19	Lee Keith	414-425-233



#### MAS Observatory

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