



Photo by Dave Kube

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note: No Meeting Minutes for June, since no Regular Meeting

Left... **Burger-meister** Ken Harris, with spatula in hand, conducts the cooking symphony of burgers and dogs at the EAS annual picnic on June 8th. For more photos, see page 4.

On June 8th, the EAS held its' **annual picnic**. We had a total of 16 people show up to eat and enjoy some very good fellowship with other members. Scott had left the meat in the refrigerator as he could not be there this year. Ken brought his grill as usual. Ken cooked up 36 burgers and about a dozen hotdogs for all to eat. Ken also brought his world famous meatballs which were totally consumed ! Several members sat outside under the trees while the cooking was going on and had some great conversations.

After we ate, most of us stayed around for the open house (**PSW**). There were people stopping and checking to see when would we be open for the public. Once it became dark enough, we opened up the dome for about 8 or 9 guests and started the

night by showing Saturn. We also had several scopes set up outside, so after an hour or so, we sent everyone outside to look through the different scopes. Our guests stayed until after 10 pm, and then our members had the night to themselves.

I hope that you will make plans to attend the picnic next year as all who were there had a good time. In the past, we had had as many as 30 attend; but in the last 2 years, the attendance has been down. This year the weather was great, and I had hoped for at least 20 or more. If the interest isn't there, then maybe we need to reconsider having a picnic. It is an expense for the club, but one that until recently, has been well worth it. Just something to think about for next year.

Submitted by Ken Harris

The EAS newsletter, **Observer**, is published monthly. Anyone wishing to contribute articles or photos may mail them to the club's PO box: EAS, PO box 3474, Evansville, IN 47733, or e-mail them to the editor at: gneireiter@wowway.com

Local Events and Information

The **Evansville Astronomical Society** (EAS) is a non-profit organization fully incorporated in the state of Indiana. It has, as its primary goal, the advancement of amateur astronomy. Founded in 1952, the society seeks to:

- 1... maintain adequate facilities for its members and for the public in order to extensively study the skies, and
- 2... promote an educational program for those who wish to learn more about the science of Astronomy.

Meetings are held the third Friday of each month, except June, when the annual EAS picnic is held. The society also sponsors monthly Open House events during the warmer seasons that afford the public an opportunity to tour the observatory.

EAS 2013 Officers and Contacts

President - Scott Conner 812.604.7164
ssconner24@gmail.com

Vice President - Tony Bryan

Secretary - Charleen Kaelin 812.303.1711

Treasurer - Scott Bishop

Counselors - Michael Borman, Kent Brenton, and Ken Harris

Webmaster - Michael Borman

Program Director - open

Newsletter Editor - George Neireiter
812.629.7822 gneireiter@wowway.com

For more information about EAS or directions to the Observatory, visit the club's web page:
<http://www.evansvilleastro.org/>



Telescope mount upgrade status... **Good**

news: Per Scott Conner, the new telescope mount is on order with the vendor Software Bisque. We are awaiting delivery of a [Paramount ME II](#) -- date to be determined.

We could use a few more donations of any amount. If you haven't contributed, please help out and make a contribution.

Please send your check to Scott Bishop, Treasurer, at: E.A.S., P.O. Box 3474, Evansville, IN, 47733. Or, even better, come to the next meeting (July 19) and personally deliver your support of E.A.S. and its mission. Thank you.

PSW for July... We have our 22nd annual Patoka Lake "Stars on the Beach" scheduled for Saturday July 13th. This year we will be starting at 6 pm. We will have hands on activities and giveaways from about 6:00 - 7:45 while it is getting dark. We may even throw in a program in the tent if conditions are right. We will then observe until everyone gets tired.

This is a great event. If you have not made it up before, you should make plans for this year. If you have a telescope bring it. If you don't come look through one of many.

Is there anyone interested in meeting for lunch in Wickliffe before the event? If so let me know, and I will make plans and let those who are interested know.

Submitted by Scott Conner

Request for help... Don't forget to sign up to cut the grass at the observatory. There is a sign-up sheet on the table. We sign up to cut the grass one time during a 2-week period. If that period has an event please do the cutting close to the date. You may bring a little gas with you when you come. Both mowers are operational.

Submitted by Scott Conner

Solar image processing revisited... In the June issue of the Observer (page 4) is an article on the solar image processing techniques used by Mike Borman. Included were two closeup images with different colors for the discs. The article may have indicated that these were two different images.

In fact, they are from the same image, with the one on the right being the negative of the one on the left. As Mike explained, "Some people like the inverted images because they say it makes the disk detail look more 3D."

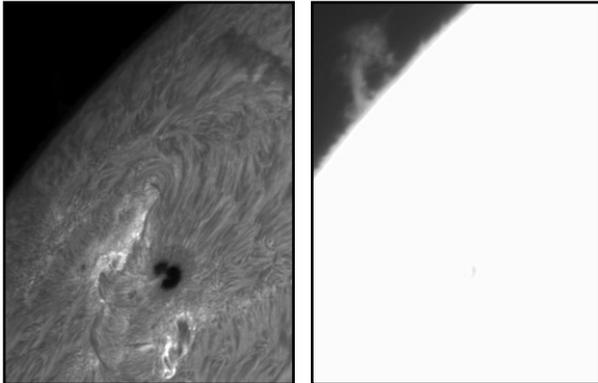
... continued on page 3 < Solar >

... Continued from page 2 < Solar >

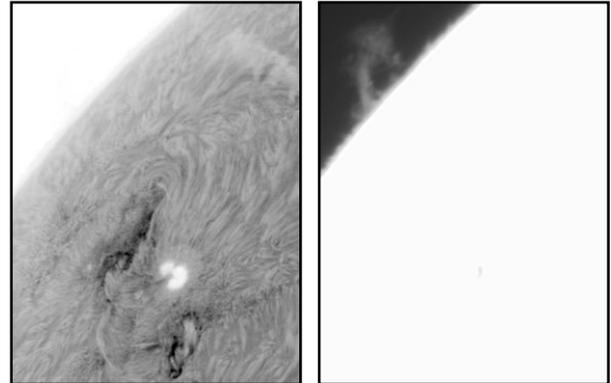
“ When I was talking about processing the disk detail and the prominences separately, I meant that the red portion of the 1st image (showing the prominences) was processed separately from the yellow portion of the 1st image (showing the disk detail) due to the difference in

brightness, and then the two were combined into one image.” Mike provides more detailed instructions on his web site under: [Solar Image Processing How To](#).

Shown below is an example workflow leading to the two final images. The images here are cropped from the originals.



Original greyscale disc (left) and prominence (right) images from the Registax processing. Both are positives.

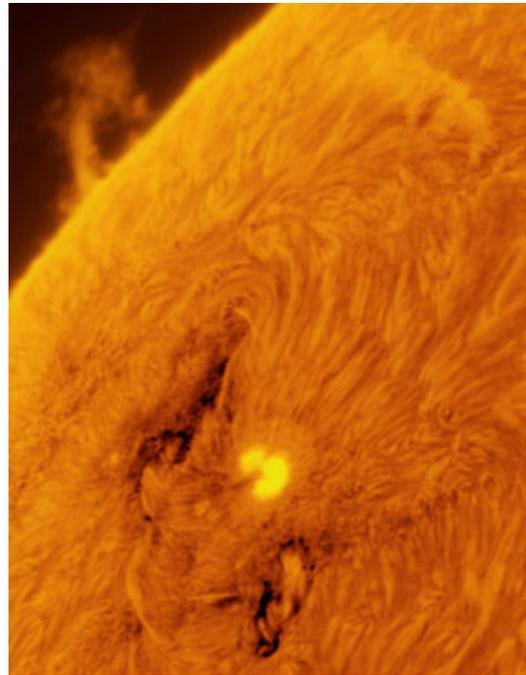
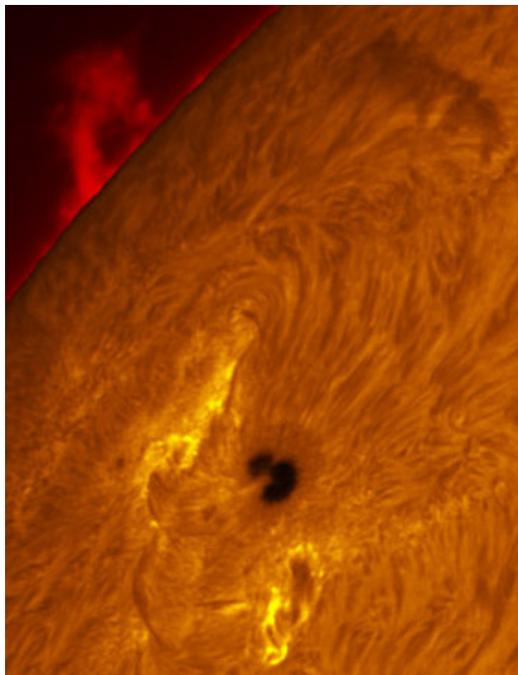


Negative of the original greyscale disc image (left) and copy of positive prominence image (right).

Using Curves Tool in Photoshop, add false color to each image to achieve desired look, per step #8 of Mike's instructions - see [web page How To](#).

In Photoshop, combine false colored positive disc and prominence images and flatten.

In Photoshop, combine false colored negative disc and positive prominence images and flatten.



EAS OBSERVER NEWSLETTER

August 2013

Sun	Mon	Tue	Wed	Thu	Fri	Sat
				1	2	3
4	5	6 New 	7	8	9	10
11	12	13	14 First 	15	16 Regular Mtg.	17
18	19	20 Full 	21	22	23	24
25	26	27	28 Last 	29	30	31

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July Events (reminder)....

Patoka Lake (22nd) Jul. 13 (Saturday) 6:00 pm Patoka Lake beach area
 Regular Meeting Jul. 19 (Friday) 7:30 pm Wahnsiedler Observatory

August Events...

*Nebraska Star Party (20th) Aug 4 - 9 Merritt Reservoir's Snake Campground,
 near Valentine, NE*

PSW Aug 10 (Saturday) 8:00 pm Wahnsiedler Observatory
 Regular Meeting Aug 16 (Friday) 7:30 pm Wahnsiedler Observatory

Moon phase times (Evansville local time)

new 4:51 p Aug 6 first quarter 5:57 a Aug 14
 full 8:45 p Aug 20 third quarter 4:35 a Aug 28

courtesy of [Time and Date](#)

EAS OBSERVER NEWSLETTER

Photos from the Annual Picnic courtesy of Dave Kube



above... Donna Bryan is impressed with husband Tony's preparation of the grill, and Tony is pleased.



Members and guests (above) converse and enjoy the food outside, while other members and guests (left) chose to avoid pesky insects and eat inside.

Tirelessly, Ken Harris keeps on cooking. For a summary of the June 8th picnic and PSW activities, see page 1 story by Ken.

High-energy Spy

By Dr. Martin C. Weisskopf



The idea for the Chandra X-Ray Observatory was born only one year after Riccardo Giacconi discovered the first celestial X-ray source other than the Sun. In 1962, he used a sounding rocket to place the experiment above the atmosphere for a few minutes. The sounding rocket was necessary because the atmosphere blocks X-rays. If you want to look at X-ray emissions from objects like stars, galaxies, and clusters of galaxies, your instrument must get above the atmosphere.

Giacconi's idea was to launch a large diameter (about 1 meter) telescope to bring X-rays to a focus. He wanted to investigate the hazy glow of X-rays that could be seen from all directions throughout the sounding rocket flight. He wanted to find out whether this glow was, in fact, made up of many point-like objects. That is, was the glow actually from millions of X-ray sources in the Universe. Except for the brightest sources from nearby neighbors, the rocket instrument could not distinguish objects within the glow.

Giacconi's vision and the promise and importance of X-ray astronomy was borne out by many sounding rocket flights and, later satellite experiments, all of which provided years-, as opposed to minutes-, worth of data.

By 1980, we knew that X-ray sources exist within all classes of astronomical objects. In many cases, this discovery was completely unexpected. For example, that first source turned out to be a very small star in a binary system with a more normal star. The vast

amount of energy needed to produce the X-rays was provided by gravity, which, because of the small star's mass (about equal to the Sun's) and compactness (about 10 km in diameter) would accelerate particles transferred from the normal star to X-ray emitting energies. In 1962, who knew such compact stars (in this case a neutron star) even existed, much less this energy transfer mechanism?

X-ray astronomy grew in importance to the fields of astronomy and astrophysics. The National Academy of Sciences, as part of its "Decadal Survey" released in 1981, recommended as its number one priority for large missions an X-ray observatory along the lines that Giacconi outlined in 1963. This observatory was eventually realized as the Chandra X-Ray Observatory, which launched in 1999.

The Chandra Project is built around a high-resolution X-ray telescope capable of sharply focusing X-rays onto two different X-ray-sensitive cameras. The focusing ability is of the caliber such that one could resolve an X-ray emitting dime at a distance of about 5 kilometers !

The building of this major scientific observatory has many stories. Learn more about Chandra at www.science.nasa.gov/missions/chandra.

Take kids on a "Trip to the Land of the Magic Windows" and see the universe in X-rays and other invisible wavelengths of light at spaceplace.nasa.gov/magic-windows.

Dr. Weisskopf is project scientist for NASA's Chandra X-ray Observatory. This article was provided by the Jet Propulsion Laboratory,

California Institute of Technology, under a contract with the National Aeronautics and Space Administration.



Composite image of DEM L50, a so-called super-bubble found in the Large Magellanic Cloud. X-ray data from Chandra is pink, while optical data is red, green, and blue. Super-bubbles are created by winds from massive stars and the shock waves produced when the stars explode as supernovas.

Upcoming Programs...

July

Date: Friday the 19th

Topic and Presenter: to be determined