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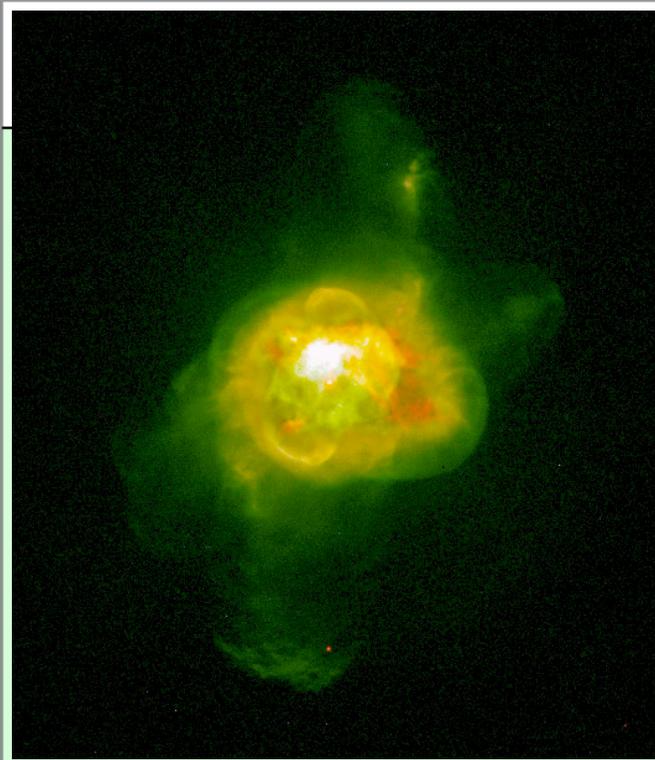
**M13**, a globular cluster in the constellation Hercules, taken 5.20.2007 with a Canon 20Da DSLR through a 10" LX200R with F/6.7 Telecompressor on a G11 Mount. *photo credit: Mike Borman*

For more on the night sky objects of June, play the Movie of Tonight's Sky at [Amazing Space](#)

A combination of two composite images of **NGC 6210**, the Green Turtle, which is found within the constellation Hercules. The outer, mostly green portion represents the light of doubly ionized oxygen. The inner portion represents the light of singly and doubly ionized oxygen in red and green respectively.

**Credit:** Robert Rubin and Christopher Ortiz ([NASA/ESA](#) Ames Research Center), Patrick Harrington and Nancy Jo Lane (University of Maryland), Reginald Dufour (Rice University), and [NASA/ESA](#)

For more information on the use of color for enhancing images, go to [http://hubblesite.org/gallery/behind\\_the\\_pictures/meaning\\_of\\_color/](http://hubblesite.org/gallery/behind_the_pictures/meaning_of_color/)



## Local Events and Information

☆ **STARS ON THE BEACH** ☆ ... The 20th annual program at **Patoka Lake** is Saturday, June 25 beginning at 1 pm.

It's **Grass Cutting Season**. Volunteers are needed twice a month to help with this project. A signup list will be posted on the website. Mitch Luman volunteered to get the lawn mower fixed.

**Thank You** ... To **Glen Bye** who helped out with the Posey County 4-H Fair.

... To **Wayne and Missy Donohue** for getting the observatory dried up after the rains.

... To **Scott Connor** (President) who made a presentation at the Evansville Museum on April 30 for a Girl Scouts event.

... And to **Joe Caruso** for his excellent presentation on the *Geologic History of the Moon*. Joe provided a well-paced, informative, and enthusiastic slide show drawing from his many years of experience. Using a handout and a manually prepared scroll (greater than 12' in length) depicting a geologic time scale covering about 4.6 billion years, he compared events on Earth with the evolution of the Moon's surface, while describing aging processes for craters.

**\$ Reminder \$** Per Scott Bishop (Treasurer), annual **membership dues** are due July 1. Single membership is \$35.00 and Family is \$40.00. Mail check to EAS, PO Box 3474, Evansville, IN 47733.

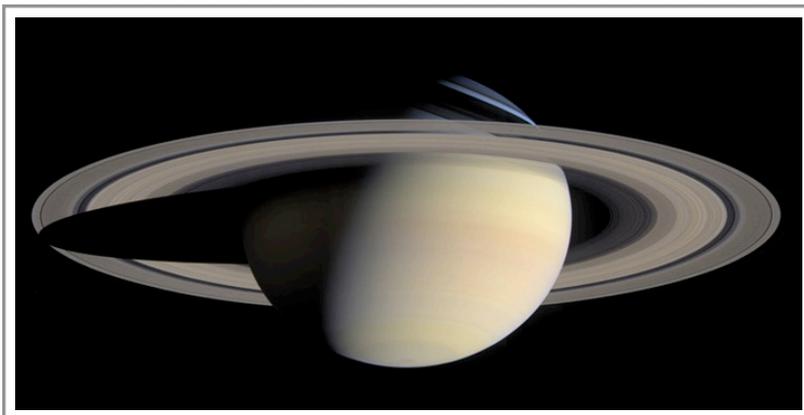
Dues are used for operational expenses which include monthly costs for utilities (water,

HVAC, electricity), supplies, and distribution of the newsletter, as well as for building and equipment maintenance (including telescopes). In addition, there are annual costs for insurance, PO box rental, property lease, and membership to the Astronomical League.

Optionally, but recommended, members may purchase a subscription to **Sky and Telescope** and/or **Astronomy** magazines. Special rates are available through the club. Also, wall and desk calendars are available for purchase in the fall, again at discounted prices.

!!! Just in from Mitch Luman.... The Society will host a **Saturn Watch** from the parking lot of the Evansville Museum on Saturday, July 23. Saturn still shines brightly overhead and provides a perfect opportunity to do some outreach and allow those members willing to share their enthusiasm and socialize at the same time. The planet Saturn is one celestial object that light pollution can't touch, so given at least partly cloudy conditions and a cadre of telescopes, the viewing should be excellent. Bring your telescope -- large or small -- and you'll be able to help with our outreach efforts with people out for a stroll along the levee. Similar events in the past have been attended by in excess of 150 people. The **Saturn Watch** takes place from **8:30 pm to 10:00 pm**. Mark you calendars for this event and don't forget the next **Evansville Museum** event, a **Moon Watch** on Saturday, September 3.

Both events are weather permitting and will be cancelled in the event of inclement weather. To learn of cancellations, call 812-425-2406, extension 227 after 4 pm the day of the event.



caption: In 2004, the Cassini spacecraft captured this series of images that have been composed into this global natural color view of Saturn. credit: NASA

# EAS OBSERVER NEWSLETTER

July 2011

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					1 New 	2
3	4	5	6	7	8 First 	9
10	11	12	13	14	15 Regular Mtg. Full 	16
17	18	19	20	21	22	23 Saturn Watch Last 
24	25	26	27	28	29	30
31						

## June Events (reminder)....

Patoka Lake (20th)      June 25 (Saturday) 1:00 pm      Patoka Lake Beach

## July Events...

Regular Meeting      July 15 (Friday) 7:30 pm      Wahnsiedler Observatory

Saturn Watch      July 23 (Saturday) 8:30 -10:00 pm      Evansville Museum

Nebraska Star Party      July 31 - August 5      (not an EAS event)

## Moon rise - set times (CDT)

new    05:45 a - 08:35 p  
 first quarter    1:45 p - 00:35 a  
                  full    08:26 p - 06:01 a  
 last quarter    00:16 a - 01:54 p  
 courtesy of U.S. Naval Observatory

## Sun rise - set times (CDT) -- for key events

July 15    05:25 a - 08:14 p  
 July 23    05:27 a - 08:16 p  
 courtesy of U.S. Naval Observatory

## Milky Way Safari

by Dauna Coulter and Dr. Tony Phillips



Safari, anyone? Citizen scientists are invited to join a hunt through the galaxy. As a volunteer for Zooniverse's Milky Way Project, you'll track down exotic creatures like mysterious gas bubbles, twisted green knots of dust and gas, and the notorious "red fuzzies."

"The project began about four months ago," says astrophysicist Robert Simpson of Oxford University. "Already, more than 18,000 people are scouting the Milky Way for these quarry."

The volunteers have been scrutinizing infrared images of the Milky Way's inner regions gathered by NASA's Spitzer Space Telescope. Spitzer's high resolution in infrared helps it pierce the cloaking haze of interstellar gas and dust, revealing strange and beautiful structures invisible to conventional telescopes. The Milky Way Project is helping astronomers catalogue these intriguing features, map our galaxy, and plan future research.

"Participants use drawing tools to flag the objects," explains Simpson. "So far they've made over a million drawings and classified over 300,000 images."

Scientists are especially interested in bubble-like objects believed to represent areas of active star formation. "Every bubble signifies hundreds to thousands of young, hot stars. Our volunteers have circled almost 300,000 bubble candidates, and counting," he says.

Humans are better at this than computers.

Computer searches turn up only the objects precisely defined in a program, missing the ones that don't fit a specified mold. A computer would, for example, overlook partial bubbles and those that are skewed into unusual shapes.

"People are more flexible. They tend to pick out patterns computers don't pick up and find things that just look interesting. They're less precise, but very complementary to computer searches, making it less likely we'll miss structures that deserve a closer look. And just the sheer numbers of eyes on the prize mean more comprehensive coverage."

Along the way the project scientists distill the volunteers' data to eliminate repetitive finds (such as different people spotting the same bubbles) and other distortions.

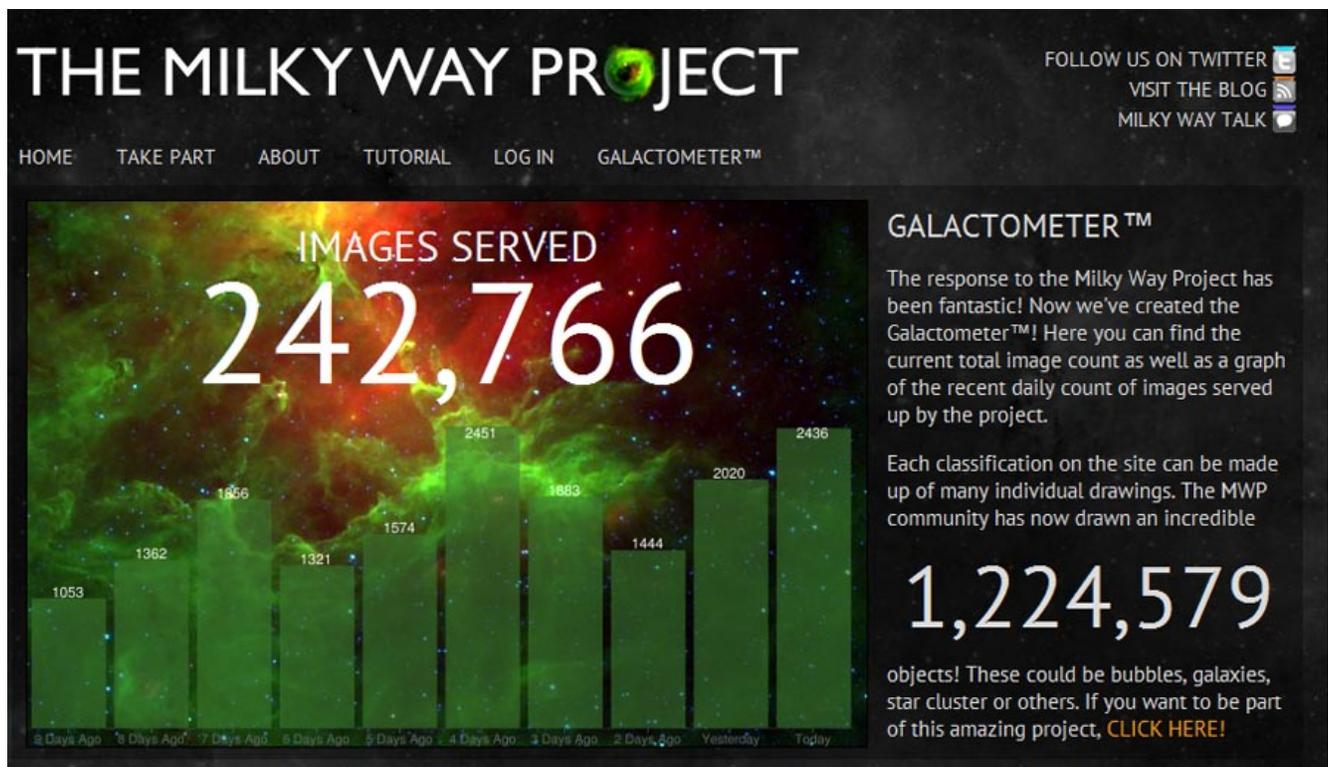
The project's main site (<http://www.milkywayproject.org>) includes links to a blog and a site called Milky Way Talk. Here "hunters" can post comments, chat about images they've found, tag the ones they consider especially intriguing, vote for their favorite images (see the winners at <http://talk.milkywayproject.org/collections/CMWS00002u>), and more.

Zooniverse invites public participation in science missions both to garner interest in science and to help scientists achieve their goals. More than 400,000 volunteers are involved in their projects at the moment. If you want to help with the

Milky Way Project, visit the site, take the tutorial, and ... happy hunting!

You can get a preview some of the bubbles at Spitzer's own web site, <http://www.spitzer.caltech.edu/>. Kids will enjoy looking for bubbles in space pictures while playing the Spitzer concentration game at <http://spaceplace.nasa.gov/spitzer-concentration/>.

*This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration*



Caption:

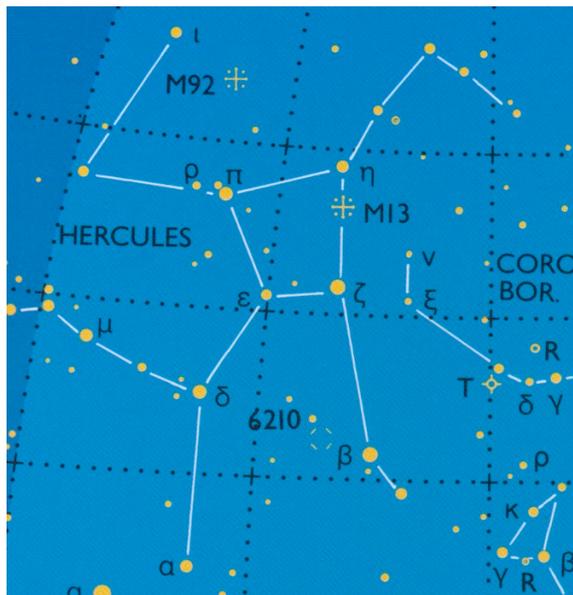
*Volunteers study infrared images of our galaxy from the Spitzer Space Telescope, identifying interesting features using the special tools of the Milky Way Project, part of the Citizen Science Alliance Zooniverse web site.*

*Constellation feature: Hercules and Scorpius*

**Hercules** is the 5th largest constellation. Though not impressive to the naked eye, it is richly endowed for the binocular and telescopic observer. **M13**, almost visible to the naked eye on a really dark night, is the finest globular cluster in the northern skies. Binoculars show it as a fuzzy blob, but telescopes resolve it into a conglomeration of countless stars.

**M92** is another fine globular cluster and is slightly fainter than M13. With large telescopes, **NGC 6210** is worth seeing. It is a small, bright planetary nebula with a brilliant blue central star.

Among the stars of Hercules, **Alpha** is noticeably red and varies over a period of months between 3rd and 4th magnitudes. It is actually a double star composed of reddish 3<sup>rd</sup> and greenish components. The stars **Delta**, **Rho**, and **Mu** are also doubles worth viewing.



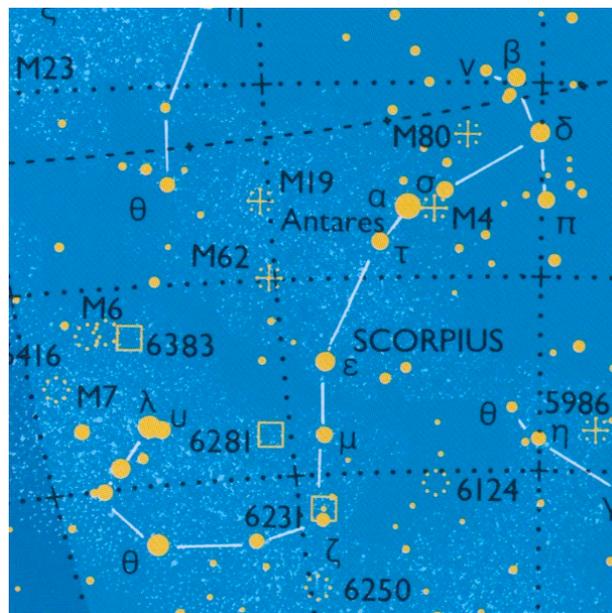
**Scorpius**, the Scorpion, a southern constellation envied by northern astronomers, is relatively small but brilliant, having 11 stars of 3rd mag. or greater. Lying almost entirely in the Milky Way, it is rich in open and globular clusters.

At 1 mag., **Antares** is the brightest star and marks the heart of the Scorpion. It is a red super giant star, perhaps 700x the size of the Sun. Were it located in place of the Sun, its surface would extend beyond Mars' orbit.

At the head of the Scorpion is **Nu**, a double star when viewed with binoculars, but a quadruple star when resolved with a telescope. **Beta** and **Omega** are also double stars. Along the backbone of bright stars, **Mu**, **Sigma**, and **Zeta** are double stars. The region around Zeta is fascinating and includes the 3rd mag. open cluster **NGC 6231**, composed of young, hot stars like the Pleiades.

At the tail, the 1.6 mag. star **Lambda** marks the Scorpion's sting. **Theta**, which is south of Lambda is nearly as bright.

Just north of the tail lie **M6** and **M7**, bright open clusters visible to the naked eye. Both can be resolved into stars with binoculars. At 3rd mag., M7 is the brighter and larger of the two, covering an area of sky larger than a full



Moon. M6 is also known as the Butterfly cluster due to the "open-wing" arrangement of its principal stars.

Other Messier objects in the constellation include 6th mag. **M4**, a globular cluster next to Antares, and the somewhat fainter globular **M80**, which is roughly midway between Antares and Beta.

Credit: Text and photo from *The Star Guide*, by Robin Kerrod, 1993 MacMillan, pages 54 and 90.

# EAS OBSERVER NEWSLETTER

## **EAS Meeting Minutes -- May 20, 2011** ... by Charleen Kaelin, Secretary

The meeting was CALLED TO ORDER by President Scott Conner at 7:38 PM with 22 members and visitors in attendance. It was moved and seconded to not read the MINUTES of the previous meeting. Charleen Kaelin announced the following **UPCOMING EVENTS**:

Foundation portable planetarium, Make-It-Take-It activities, and displays of meteorites, astrophotography, and telescopes.

Many thanks to Glen Bye who helped out with the Posey County 4-H Fair.

EAS Picnic	4:00 pm, Saturday, June 4 Observing in Illinois after picnic
Patoka Lake (21 <sup>st</sup> )	1:00 pm, Saturday, June 25
Regular Meeting	7:30 pm, Friday, July 15
Saturn Watch	8:30 pm, Saturday, July 23 at Museum
Nebraska Star Party	July 31 - August 5
Regular Meeting	7:30 pm, Friday, August 19

### **NEW BUSINESS**

There is NO MEETING IN JUNE.

Our annual picnic is scheduled for JUNE 4 starting at 4:00 PM. There is a \$3.00 fee to cover the meat and buns

There were no visitors.

Treasurer Scott Bishop announced that the club's finances are in the black. He stated that July 1 is MEMBERSHIP RENEWAL TIME. Single membership is \$35.00 and Family is \$40.00.

### **SPECIAL PROJECTS**

The president mentioned a number of improvements needed. His first priority is roof repair. Also needed is landscaping and dome repair. No date has been set to deal with these issues but maybe some time in September or October.

Scott Conner thanked Wayne and Missy Donohue for getting the place dried up after the rains.

### **OLD BUSINESS**

The president made a presentation to a Girl Scouts event at the Evansville Museum on April 30.

There were about 20 in attendance. Astronomy Day was held May 8 at the Museum. Fortunately, the weather eventually cooperated to allow solar observing in the parking lot. There was very good attendance this year. Activities included the Haven's

expenses. Bring a side dish or dessert. Weather permitting, there will be observing at Dolan Lake following the picnic.

The 21<sup>st</sup> annual "STARS ON THE BEACH" program at Patoka Lake is Saturday, June 25 beginning at 1 pm.

It's GRASS CUTTING SEASON. Volunteers are needed twice a month to help with this project. A signup list will be posted on the website. Mitch Luman volunteered to get the lawn mower fixed.

Charleen Kaelin presented an Astronomy report.

Lastly, Scott reminded the members that dues are due July 1.

The meeting adjourned at 8:06 PM.

The program was "Geological History of the Earth's Moon" by Joe Caruso.

Respectfully submitted,

Charleen Kaelin  
Executive Board Secretary



**Upcoming programs at the Regular Meeting of EAS ... by Mitch Luman**

Note: Since the EAS Picnic will take the place of the regular monthly meeting, there will be no **June** program.

**July Program: "Remote Observing from New Mexico"  
by Dr. Daniel Johnson**

EAS member Dr. Dan Johnson will report on the recent construction of his 15x15 foot roll off roof observatory located in Granite Gap, New Mexico at the July 15 Regular Meeting. Dr. Johnson's observatory, which will be controlled over the Internet, is one of about a dozen similar pads and buildings that are currently operational, or under construction at Granite Gap.

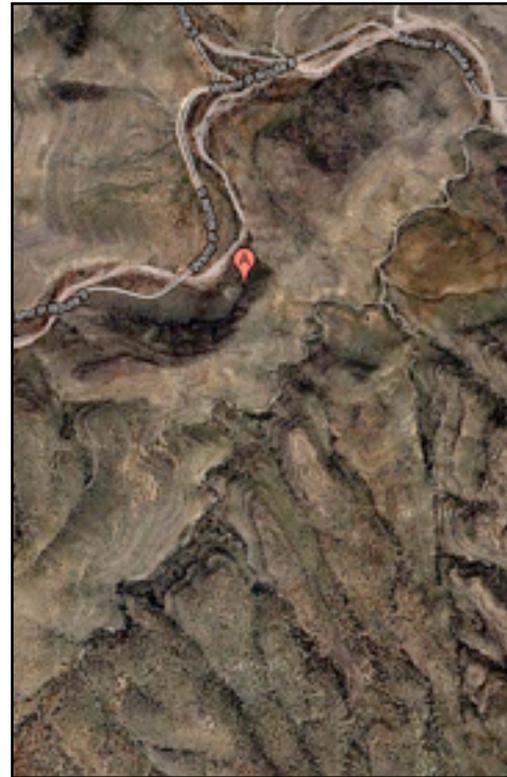
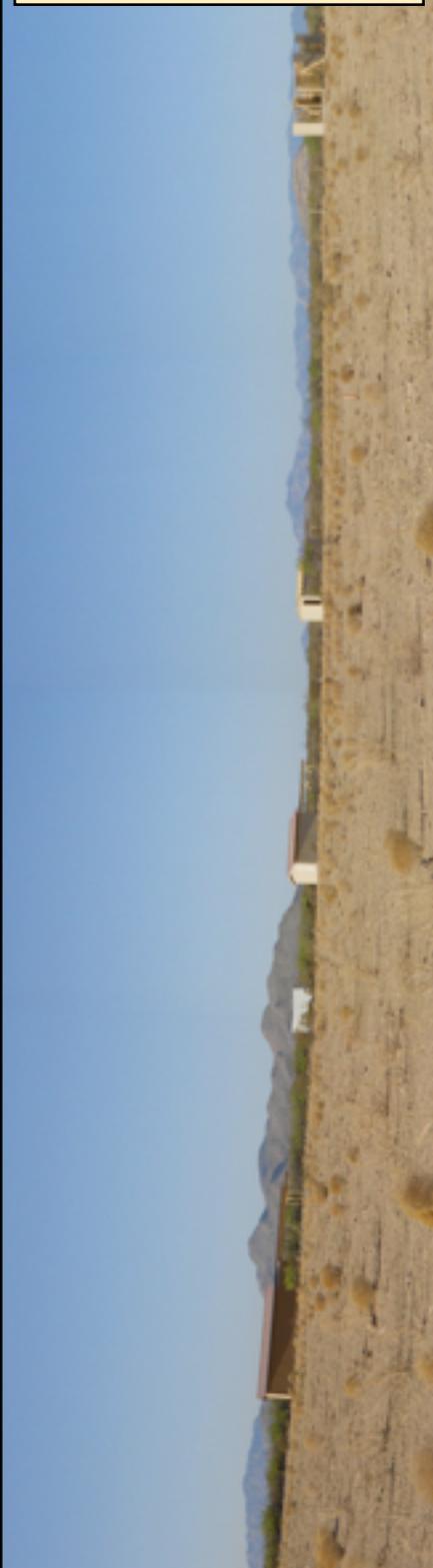
Dan has just returned from a trip over Memorial Day Weekend to check up on things and run down any unexpected problems now that electricity and Internet have been installed. First light is several months off.

Dr. Johnson is one of the area's most accomplished astrophotographers. If all goes well, remote controlled imaging should begin later this year. The July program will be a progress report of sorts, with another program promised next year once the observatory is fully operational !

Johnson's observatory, shown here under construction, includes a warm room and space for two pier mounted telescopes. Image by Dr. Daniel Johnson.



Panorama of several of the personal observatories at Granite Gap, New Mexico. Image by Dr. Daniel Johnson.



Above: Traffic map and Satellite views of the mountainous terrain near Granite Gap, NM (refer to point A). Courtesy: *Google Maps*



**Scott Conner - President**

An Evansville West-sider and a Mater Dei High School graduate, Scott continued his education at USI and IVY Tech. He is currently employed in the Metal Fabrication Industry as a Manager. Scott actually has a zest for the “trilogy of sister sciences”: Astronomy, Geology and Meteorology. A very valuable asset to the EAS, Scott has served in previous years as the Society’s Secretary, Vice President and Treasurer. 812.449.2721 (cell) [ssconner24@gmail.com](mailto:ssconner24@gmail.com)



**Tony Bryan - Vice President**

Tony calls Louisville, Ky. His home town but now resides in Jasper, In. with wife Donna. Tony is a senior technician employed by the U.S. Government. Interest in Astronomy began very early but reached a peak when Tony became an active member of the Louisville club. He has an excellent 8” Meade scope but shows no bias when viewing the skies, “He likes them all.” Other interests include woodworking and collecting classic cars. For relaxation, he enjoys hiking.



**Charleen Kaelin - Secretary**

A current resident of Evansville, IN, Charleen was born in Baton Rouge, LA where she received her Bachelor of Science degree in Business. She moved to this area in 1993. She works for a judge and lawyer in the Tribunal Office of the Diocese of Evansville. Charleen’s hobbies include community service, decorating for all holidays and events, and sharing information on astronomy. 812.303.1711 (home)



**Scott Bishop - Treasurer**

A Native of Evansville, Scott lives on the city’s west side with wife Crystal and Daughters Flannery and Piper. Professionally, Scott is a graphic artist. Although his interest in astronomy developed only recently, he has made remarkable progress. He now owns a 6” Dobsonian scope but shows no preference as to which sky objects he views. “The sky’s the limit.” Other hobbies Scott enjoys include bowling, reading and short story writing.

***About the E.A.S. organization...***

The Evansville Astronomical Society (E.A.S.) 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, both for its members and the public, 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 E.A.S. picnic is held. The Society also sponsors Open House events monthly through the warmer seasons) that afford the public an opportunity to tour the observatory.

The accounting year covered by the dues runs from July 1 to June 30 of the next year. Anyone joining the E.A.S. from January to June. Dues are 1/2 of the amount listed in the box, then full dues beginning in July. Optional, but recommended, is the subscription to Sky and Telescope and/or Astronomy Magazines. Special subscription rates are available through the club.

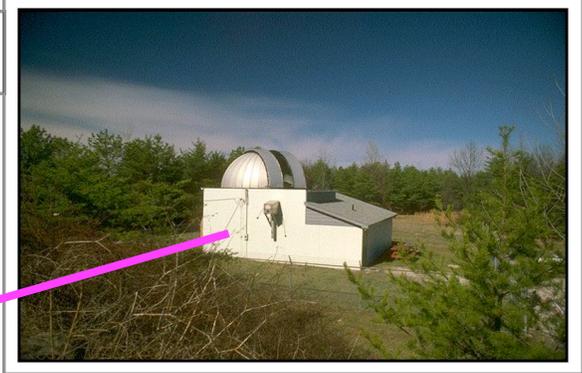
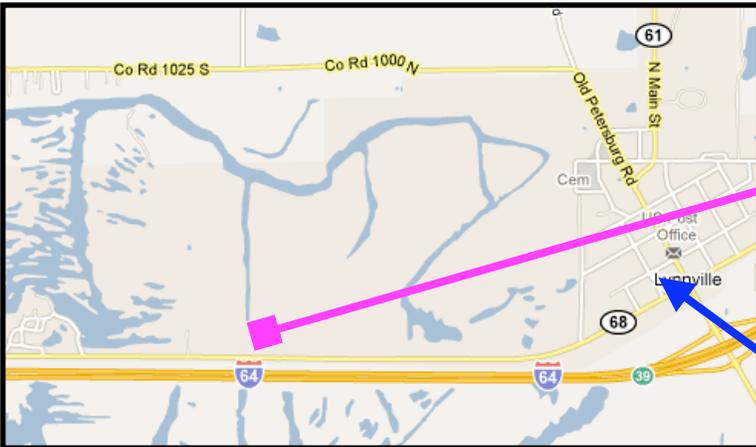
**The Dues schedule for  
membership in the E.A.S. is:**  
**Family ... \$40.00**  
  
**Single ... \$35.00**

The E.A.S. newsletter, OBSERVER, is published monthly. Anyone wishing to contribute articles, should mail them to the Club's PO Box. EAS, at PO Box 3474, Evansville, IN 47733, or email them to the editor at:  
[gneireiter@wowway.com](mailto:gneireiter@wowway.com)

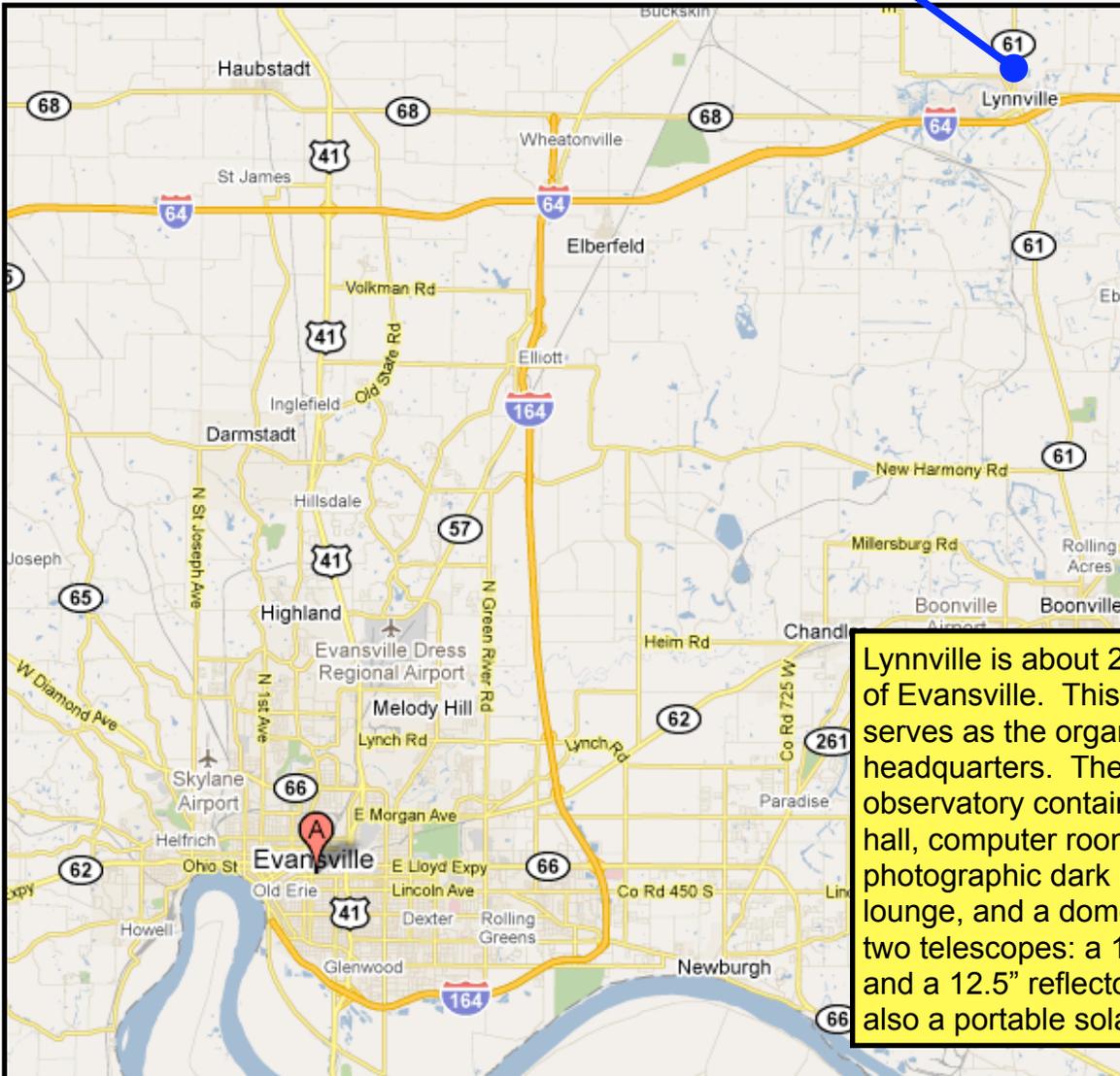
**For more information, view the E.A.S. website at:**  
**<http://evansvilleastro.org>**

# EAS OBSERVER NEWSLETTER

## How to find E.A.S. and the observatory...



The E.A.S. facility is located in Wahnsiedler Observatory at Lynnville Park near the town of Lynnville, IN.



Lynnville is about 20 miles NE of Evansville. This location serves as the organization's headquarters. The observatory contains a lecture hall, computer room, photographic dark room, lounge, and a dome housing two telescopes: a 14" reflector and a 12.5" reflector. There is also a portable solar scope.