

Inside this Issue...

- 2 - Schedule for 2012
- 3 - March Calendar / Events
- 4 - Satellite Insight
- 5 - Upcoming Programs
- 6 - Constellation Feature: Gemini
- 7 - Minutes of January meeting
- 9 - Officers of the E.A.S.
- 10 - About the E.A.S. Organization
- 11 - How to Find E.A.S. and the Wahnsiedler Observatory



NGC 2392 - [The Eskimo Nebula](#) is about 5,000 light-years from Earth in the constellation Gemini (see page 6 for more about this constellation). The picture was taken Jan. 10 and 11, 2000, with the Wide Field and Planetary Camera 2. The nebula's glowing gases produce the colors in this image: nitrogen (red), hydrogen (green), oxygen (blue), and helium (violet).

The planetary nebula began forming about 10,000 years ago, when the dying star began flinging material into space. The nebula is composed of two elliptically shaped lobes of matter streaming above and below the dying star. In this photo, one bubble lies in front of the other, obscuring part of the second lobe.

It is believed that a ring of dense material around the star's equator, ejected during its red giant phase, created the nebula's shape. This dense waist of material is plodding along at 72,000 miles per hour (115,000 kilometers per hour), preventing high-velocity stellar winds from pushing matter along the equator. Instead, the 900,000-mile-per-hour (1.5-million-kilometer-per-hour) winds are sweeping the material above and below the star, creating the elongated bubbles. The bubbles are not smooth like balloons but have filaments of denser matter. Each bubble is about 1 light-year long and about half a light-year wide. The origin of the comet-shaped features in the Eskimo's "parka" is unknown. One possible explanation is that these objects formed from a collision of slow- and fast-moving gases.

The planetary nebula was discovered in 1787 by astronomer William Herschel. It is part of the Astronomical League's Herschel 400 observing program. A small telescope is sufficient to see the deep sky object.

Credit: <http://hubblesite.org/gallery/album/pr2000007a>, http://en.wikipedia.org/wiki/Eskimo_Nebula

Schedule 2012

Regular Meeting	Friday , Jan 20	7:30 pm
Regular Meeting	Friday, Feb 17	7:30 pm
Regular Meeting	Friday, Mar 16	7:30 pm
PSW	Saturday Mar 24	7:30 pm Venus, Mars, Jupiter (Saturn > 10)
Girl Scout Space Night	Saturday, Mar 31	@ Museum
Girl Scout Space Night	Saturday, Apr 7	@ Museum (seniors)
Roof Repair Day	Saturday, Apr 14 (or 21)	9:00 am (apply coat #1 to roof)
Regular Meeting	Friday, Apr 20	7:30 pm
<i>Mid South Star Gaze</i>	<i>April 18-21</i>	
<i>Texas Star Party</i>	<i>April 15-22</i>	
Astronomy Day	Saturday, Apr 28	@ Museum 11 am – 9 pm
Dome Enhancement Day	Saturday, May 12	9:00 am (possibly apply coat #2 to roof)
Regular Meeting	Friday, May 18	7:30 pm
PSW	Saturday, May 19	8:15 pm (new Moon on 20th)
Venus Transit	Tuesday, Jun 5	4:30 pm @ Museum (1st contact 5:05 pm)
EAS Picnic	Saturday, Jun 23	4:00 pm observing in Illinois after picnic
Patoka Lake (21st)	Saturday, Jul 14	4:30 pm Patoka Lake
<i>Nebraska Star Party (19th)</i>	<i>Jul 15-20</i>	
Regular Meeting	Friday, Jul 20	7:30 pm
PSW	Saturday, Aug 11	8:00 pm Saturn
Regular Meeting	Friday, Aug 17	7:30 pm
PSW	Saturday, Sep 8	7:30 pm
<i>Okie-TEX (29th)</i>	<i>Sep 8-16</i>	
<i>Ferdinand Folk Festival</i>	<i>Sep 15</i>	<i>afternoon</i>
Regular Meeting	Friday, Sep 21	7:30 pm
<i>Twin Lakes (23rd)</i>	<i>Oct 6-14</i>	
Fall/winter Cleanup	Saturday, Oct 13	1:30 pm
PSW	Saturday, Oct 13	6:45 pm
Regular Meeting	Friday, Oct 19	7:30 pm (nominations for Officers)
Regular Meeting	Friday, Nov 16	7:30 pm (election of Officers)
Regular Meeting	Friday, Dec 21	7:30 pm (Mike Borman - Quiz Master)

Daylight savings Time Begins	Sunday, Mar 11	2:00 am
Daylight Savings Time Ends	Sunday, Nov 4	2:00 am

Events in Red are at the Observatory.

Events in Black are not at the observatory.

Events in Blue are not firm at this time

Events In Green are not EAS Events

EAS OBSERVER NEWSLETTER

March 2012

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

generated by [HTML Calendar Maker 1.1](#). Copyright (C) 2009 John Dalbey.

February Events (reminder)....

Regular Meeting Feb. 17 (Friday) 7:30 pm Wahnsiedler Observatory

March Events...

Regular Meeting Mar. 16 (Friday) 7:30 pm Wahnsiedler Observatory
Public Star Watch Mar. 24 (Saturday) 7:30 pm Wahnsiedler Observatory

Moon phase times (CST)

full	3:40 a	Mar 8	
third quarter	8:25 p	Mar 14	
new	9:37 a	Mar 22	
first quarter	2:41 p	Mar 30	courtesy of Time and Date

The Nerdiest Video Game Ever

By Dr. Tony Phillips

NASA has a job opening. Wanted: People of all ages to sort, stack, and catalogue terabytes of simulated data from a satellite that launches in 2015. Agile thumbs required.

Sorting terabytes of data? It's more fun than it sounds.

In fact it's a game: *Satellite Insight*. The Space Place Team at the Jet Propulsion Laboratory created the entertaining app for iPhones to get the word out about GOES-R, an advanced Earth science satellite built by NOAA and NASA.

Described by the Los Angeles Times as possibly "the nerdiest game ever," *Satellite Insight* may be downloaded for free from Apple's app store. Be careful, though, once you start playing it's hard to stop. Some reviewers have likened it to Tetris, one of the most popular video games of all time.

GOES, short for "Geostationary Operational Environmental Satellite," is the workhorse spacecraft for weather forecasters. NOAA operates two (at a time) in geosynchronous orbit, one above the west coast of North America and one above the east coast. They monitor clouds, wind, rain, hurricanes, tornadoes and even solar flares. The GOES program has been in action since 1975.



GOES-R is the next-generation satellite with advanced technologies far beyond those of the older GOES satellites. It has sensors for lightning detection, wildfire mapping, storm tracking, search and rescue, solar imaging, and more. Many of the sensors are trailblazers. For example, the Advanced Baseline Imager has 60 times the capability of the current imager—16 channels instead of 5. It has twice the spatial resolution and five times the temporal refresh rate, including the 30-second imaging of weather systems over a region of 1000 km x 1000 km. Also, the Geostationary Lightning Mapper can count and pinpoint lightning bolts over the Americas 24/7. It's the first such detector to fly on a geosynchronous satellite, and it could lead to transformative advances in severe storm warning capability.

All in all, GOES-R represents a "huge technological leap from the current GOES." We know this because *Satellite Insight* tells us so. The app has an informative "Learn More" feature where players can find out about the satellite and the data they have been sorting.

Which brings us back to sorting data. It's a bit like eating Cheerios; just don't tell the kids it's nutritious, and they love it. Helping GOES-R gather and stash data from all those advanced sensors is just as satisfying, too—a dose of Earth science wrapped in thumb-flying fun.

EAS OBSERVER NEWSLETTER

More information about Satellite Insight may be found on the web at <http://itunes.apple.com/us/app/satellite-insight/id463588902?mt=8>. The game also available in web form (flying thumbs optional) at spaceplace.nasa.gov/satellite-insight.

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



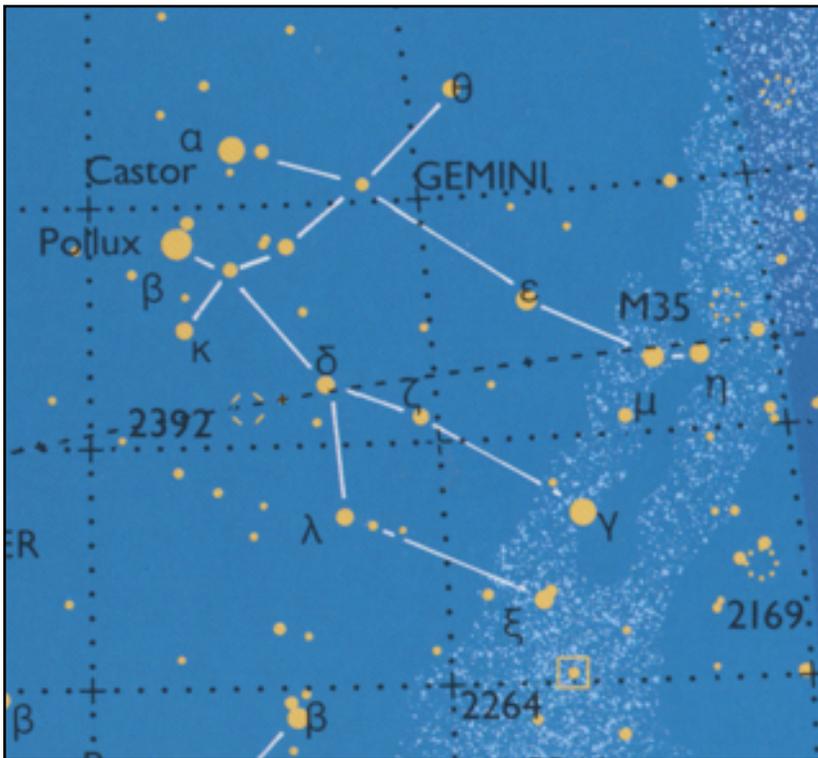
New iPhone game is first NOAA app and only the second NASA game app. Just as with the real GOES-R, the challenge with Satellite Insight is to keep up with the massive influx of weather and other environmental data.

Credit: NASA/JPL-Caltech/UCLA/MPS/DLR/IDA

Upcoming Programs

February and March Programs have not been determined as of the date of publication for this newsletter issue. Please check the [EAS website](#) for further updates.

CONSTELLATION FEATURE: GEMINI



Gemini, the Twins, is a splendid constellation of the Zodiac and well-named for its pair of first magnitude stars, Castor and Pollux. **Pollux** is the brighter of the two and more colorful with a rich yellow-orange hue.

However, **Castor** is the more interesting twin due to its multiple star system. A small telescope visually resolves Castor into two components and brings a fainter third into view.

Castor is about 50 light years away from Earth and, in 1678, was originally discovered to be a visual binary with the two components separated by 6" and period of revolution of about 467 years. Both components are themselves a spectroscopic

binary (hence a quadruple system). A fainter third companion is separated from the quadruple by about 72" but has the same parallax and proper motion. This companion is an eclipsing binary system with a period just less than one day. Thus, Castor is considered a 6-star gravitationally-bound system.

Binary stars can be classified into four types according to the way they are observed: (1) visually, (2) spectroscopically via wavelength shifts, (3) eclipsing due to light intensity changes, and (4) astrometrically. In the case of Castor, the spectroscopic binaries are noted by the Doppler shift in spectral lines emitted from each star: first toward the blue as each moves toward us, then toward the red as each moves away from us during its motion about their common center of mass, with the period of their common orbit. For further reading about binary star systems and other multiple star examples, check out this extensive [Wiki article](#).

Among Gemini's double stars is **Zeta**. Its brightest component is a [Cepheid variable](#), which fluctuates in brightness over a period of ten days. The change in brightness can be seen by comparison with the steady shining **Delta**, which a small telescope will reveal to be a double star.

A good binocular subject in Gemini is M35, a large and bright open star cluster just north of **Mu** and **Eta**. Telescopes will reveal close to Delta the greenish disk of **NGC 2392**, the subject of page 1 of this newsletter.

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

Credits: Text and constellation diagram from *The Star Guide*, by Robin Kerrod, 1993 MacMillan, pages 46-47.

EAS OBSERVER NEWSLETTER

EAS Meeting Minutes -- January 20, 2012

The meeting was CALLED TO ORDER by President Scott Conner at 7:44 pm with 11 members in attendance. It was moved and seconded to approve the MINUTES as could be seen on the EAS Internet page.

Scott announced the following UPCOMING EVENTS:

Regular Meeting	Friday, February 17	7:30 PM
-----------------	---------------------	---------

There were no visitors.

Treasurer Scott Bishop announced that it is time to renew our CD which pays 0.45% interest. Also, the EAS wall and desk calendars are still available for sale. He gave an update on the balances in the various funds of the club.

Scott also stated that the INSURANCE BILL will need to be paid this month and that this is our largest expense each year. He also mentioned that the club again received a very generous donation from James Jacke, and that the expense for the casters was covered by Charleen Kaelin.

SPECIAL PROJECTS ... The upcoming projects include restoring the DOME, possibly in the spring. This will include scraping, cleaning, painting, and re-carpeting. Many volunteers will be needed to accomplish this project. Also, additional funds are needed to cover the carpet. Mitch Luman suggested that instead of putting down carpet maybe it would be better to use a rubber or vinyl carpet instead. A couple of possible locations were suggested for the purchase of it.

OLD BUSINESS ... Our annual Christmas party and astronomy quiz was held last month and the winners in each category were announced.

NEW BUSINESS ... The officers will meet on Sunday, February 5, 2012, for their annual BOARD MEETING to discuss the schedule for next year. It will be held at Mike Borman's home at 2:00 pm.

Scott Conner announced that he will be STEPPING DOWN at the end of this year from his position as President after being an executive officer for nearly a quarter of a century and President for 12 years. He will remain very active and has participating in public outreach as his priority.

Also, Scott plans to run for the office of COUNSELOR, replacing Ed Erikson, and to finish the Astronomy 101 DVD, which anyone could then use for Public Star Watches.

We need someone to fill Mitch Luman's shoes as Program chairman.

The PROGRAM topic was the Sikhote-Alin Meteorite.

February Program – Not set yet.

The meeting adjourned at 8:15 PM.

Respectfully submitted,

Charleen Kaelin
Executive Board Secretary





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



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

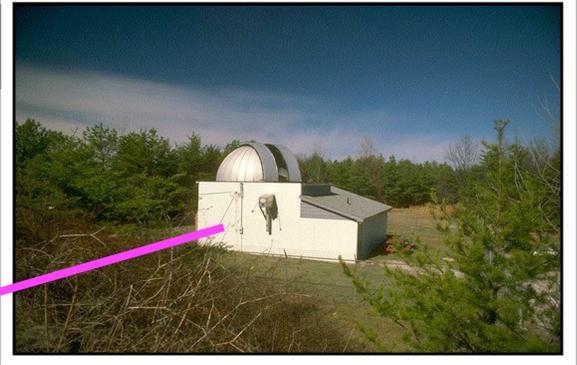
Single ... \$35.00

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

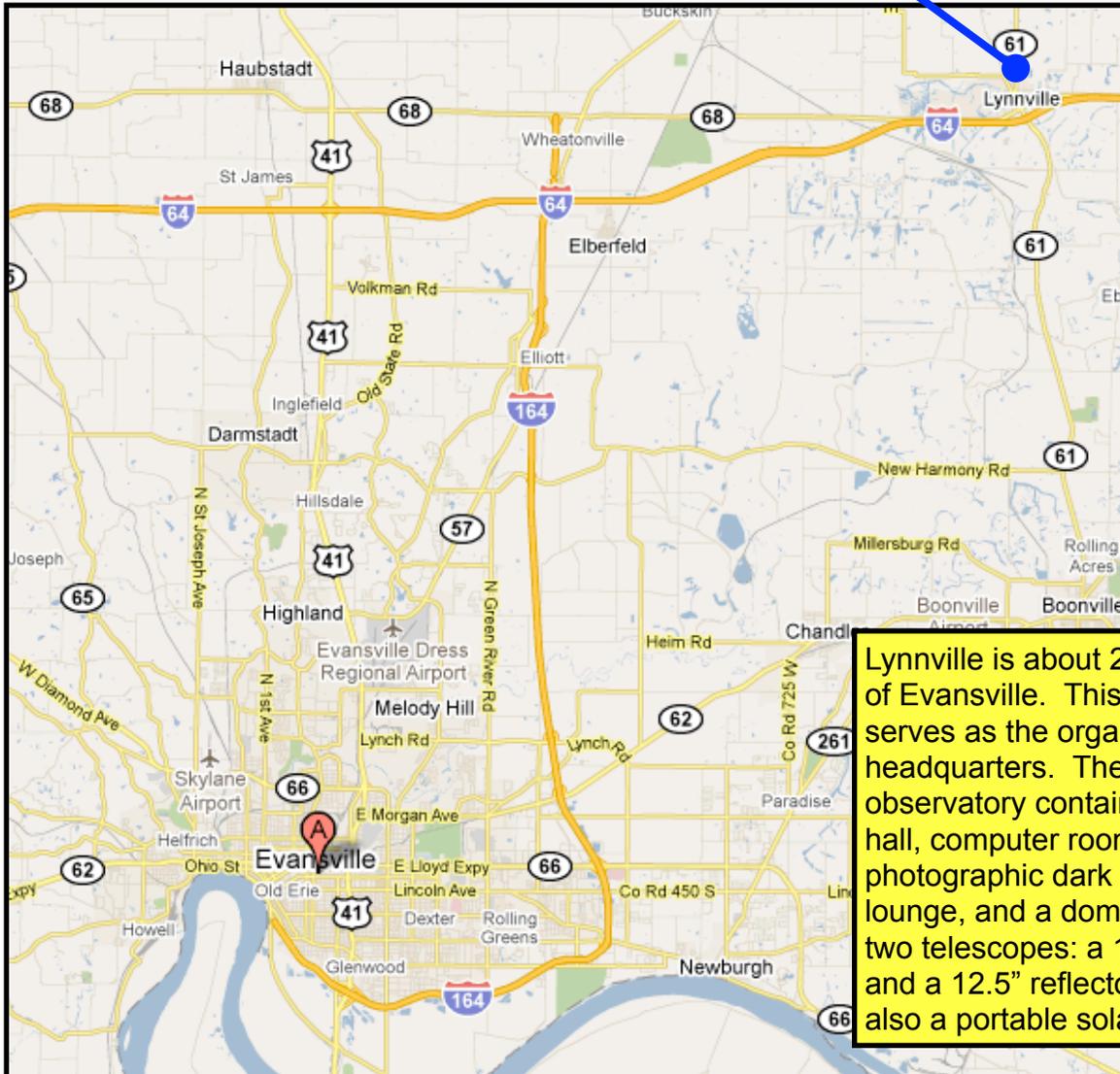
For more information, view the E.A.S. website at:
<http://evansvilleastro.org>

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.