



Monthly Notices of the Everglades Astronomical Society



Naples, FL
October 2013

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President's Message

We are going to have a fun presentation this month! Team Charlie and Team Rick are going to square off in an astronomical trivia challenge! Winner gets bragging rights.

The Winter Star Party sign up site is live! I signed up within 20 minutes after it was open. Charlie was about as fast or faster. Jackie called several people and asked them to check their e-mail while she was in the middle of a bowling match; she herself did not sign up for another 3 hours. Last time I looked there was still space available - but don't wait! (<http://www.scas.org/winterstarparty.htm>)

For those of you who are interested in a telescope project update, the mirror box is completed, the altitude bearings are purchased as are the 8 aluminum truss tubes. The next step is attaching the truss tube clamps in the proper position to hold the secondary cage.

Clear Skies,
President
Mike Usher

Dates for the "Fak"

Usually the best times to go out to the Fakahatchee Strand viewing site are moonless nights. Below is a list of upcoming Saturday nights that you will often find fellow club members out there enjoying the skies with you (weather permitting).

Date	Moonrise	Moonset
October 26		12:43 p.m.
November 2	5:37 a.m.	5:13 p.m.

Sky Events

Oct. 4 - New moon
Oct. 11 - First quarter
Oct. 18 - Full moon
Oct. 20 - Orionids meteor shower
Oct. 26 - Last quarter

Next Meeting

October 8, 2013
Time 7:00 – 9:00 pm
At the Norris Center, Cambier Park

Comet ISON is Here! By Jackie Richards

After a year's wait, it's finally here. Comet ISON is making its way toward the sun and we may be able to see it through our telescopes in early October when it is two degrees north of Mars, 10th-11th magnitude, and traveling along almost the same path as Mars. (One degree in the sky is equivalent to two times the moon's diameter.) In early October, ISON and Mars will be moving through Cancer and then through Leo by mid-month (moving west to east) toward Regulus (Leo's brightest sun). The three will form a straight line on the morning of October 15th with only one degree between each object. The full moon on October 18th will make ISON viewing more difficult even though it will be brighter and only one degree north of Mars. ISON will move slightly ahead of Mars' path and appear to pass it by October 21st. At the end of October, ISON should be ten times brighter (at about 7th magnitude) and barely visible to the naked eye. ISON will be at its highest in the pre-dawn hours during October.

On October 25th, ISON passes less than two degrees south of a trio of bright galaxies--M95 (10th mag.), M96 (10th mag.) and M105 (9th mag.). This should provide a nice comparison of how a comet's light spreads over a measurable sky area just like a galaxy does and should provide a different comparison than to a pinpoint star. While some club members did go out to the Fak this weekend, ISON may have been too dim for viewing such a diverse object as a comet between 10th and 11th magnitude, and had cloud obstruction not been an issue, we might have attempted staying up till the pre-dawn hours to find ISON. We are hopeful to view and get some photos of ISON during our next Fak viewings.

And just when you thought it couldn't get any better, another comet (2P/Encke) also moves through Leo during the month of October which will move faster than ISON because it lies closer to the Earth. Comet Encke lit up the sky a decade ago and we are expecting a repeat performance this year. It begins in early October north of Gemini and ends in Virgo. It will brighten from 11th magnitude to 7th magnitude during October.

FAK PHOTOS



North American Nebula by Chuck Pavlick at the Fakahatchee Strand - Orion Eon 72 mm w/field flattener; Hap Griffin Modified Rebel xt w/lumicom deep sky filter; AP mach 1 w/PHD autoguiding, 50 mm w/starshoot 1; ten exposures @ 360 secs.



Summer Milkyway taken by Jackie Richards at the Fakahatchee Strand. Canon Rebel T2i, ISO 1600 15 secs.



How to hunt for your very own supernova!

By Dr. Ethan Siegel

In our day-to-day lives, stars seem like the most fixed and unchanging of all the night sky objects. Shining relentlessly and constantly for billions of years, it's only the long-term motion of these individual nuclear furnaces and our own motion through the cosmos that results in the most minute, barely-perceptible changes.

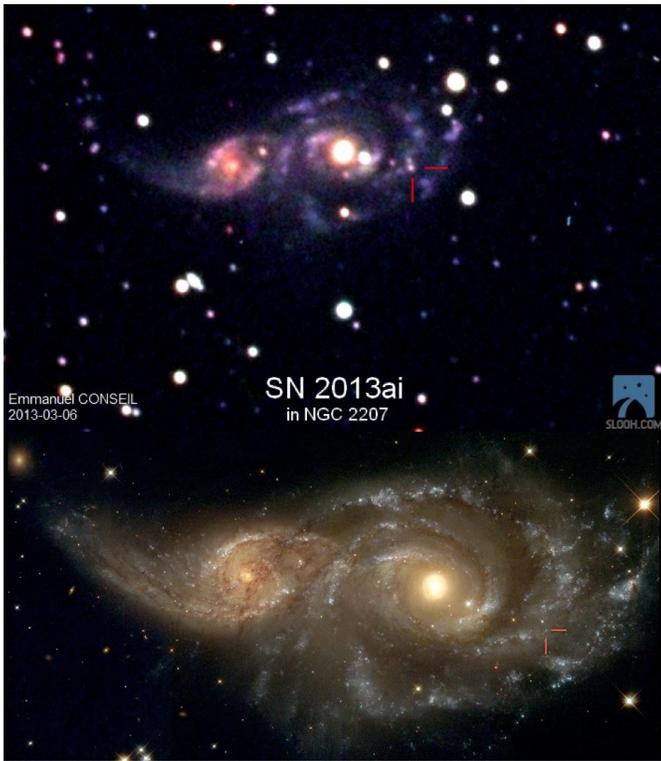
Unless, that is, you're talking about a star reaching the end of its life. A star like our Sun will burn through all the hydrogen in its core after approximately 10 billion years, after which the core contracts and heats up, and the heavier element helium begins to fuse. About a quarter of all stars are massive enough that they'll reach this giant stage, but the *most* massive ones -- only about 0.1% of all stars -- will continue to fuse leaner elements past carbon, oxygen, neon, magnesium, silicon, sulphur and all the way up to iron, cobalt, and, nickel in their core. For the rare ultra-massive stars that make it this far, their cores become so massive that they're unstable against gravitational collapse. When they run out of fuel, the core implodes.

The intruding matter approaches the center of the star, then rebounds and bounces outwards, creating a shockwave that eventually causes what we see as a core-collapse supernova, the most common type of supernova in the Universe! These occur only a few times a century in most galaxies, but because it's the most massive, hottest, shortest-lived stars that create these core-collapse supernovae, we can increase our odds of finding one by watching the most actively star-forming galaxies very closely. Want to maximize your chances of finding one for yourself? Here's how.

Pick a galaxy in the process of a major merger, and get to know it. Learn where the foreground stars are, where the apparent bright spots are, what its distinctive features are. If a supernova occurs, it will appear first as a barely perceptible bright spot that wasn't there before, and it will quickly brighten over a few nights. If you find what appears to be a "new star" in one of these galaxies and it checks out, report it *immediately*; you just might have discovered a new supernova!

This is one of the few cutting-edge astronomical discoveries well-suited to amateurs; Australian Robert Evans holds the all-time record with 42 (and counting) original supernova

discoveries. If you ever find one for yourself, you'll have seen an exploding star whose light traveled millions of light-years across the Universe right to you, and you'll be the *very first* person who's ever seen it!



SN 2013ai, via its discoverer, Emmanuel Conseil, taken with the Slooh.com robotic telescope just a few days after its emergence in NGC 2207 (top); NASA, ESA and the Hubble Heritage Team (STScI) of the same interacting galaxies prior to the supernova (bottom).

Read more about the evolution and ultimate fate of the stars in our universe: <http://science.nasa.gov/astrophysics/focus-areas/how-do-stars-form-and-evolve/>.

While you are out looking for supernovas, kids can have a blast finding constellations using the Space Place star finder: <http://spaceplace.nasa.gov/starfinder/>.

Learn about the many ways in which NASA strives to uncover the mysteries of the universe: <http://science.nasa.gov/astrophysics/>. Kids can make their own clusters of galaxies by checking out The Space Place's fun galactic mobile activity: <http://spaceplace.nasa.gov/galactic-mobile/>

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Items For Sale or Trade or Wanted:

http://www.naples.net/clubs/eas/equipment_sales.html

Useful links (software, telescope making, telescope and equipment suppliers, astronomical data sources, iPhone and iPad Apps and more):

<http://www.naples.net/clubs/eas/links.html>

EAS 2013 DUES

For the bargain price of only \$20.00 per family, all this can be yours this year:

- Meet with your fellow astronomy enthusiasts at least 10 times a year;
- Learn about astronomy and telescopes. Check out our club scope;
- Many opportunities to view planets, nebulae and other celestial objects (even if you don't have your own telescope); and
- Enjoy the many astronomy programs at our regular monthly meetings.

Don't miss out! Fill out this form (please print clearly) and send it with your \$20 check to the Everglades Astronomical Society, P. O. Box 1868, Marco Island, Florida, 34146.

Name:

Address:

Phone:

Email:
