



Monthly Notices of the Everglades Astronomical Society



Naples, FL
December 2016

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President's Message

Happy Holiday Season to everyone. My wish for all is for peace, happiness, love, and clear skies.

Robyn Pritchard gave a very informative talk on Jupiter at our November meeting. As Jupiter is my favorite planet (other than Pluto), I found the information she presented very interesting. This was Robyn's first presentation to our group, and she did a great job. Thanks, Robyn.

I was outside for the Leonids, for all the good it did me. The sky was cloudy. I'm sure that comes as no shock to anyone. If anyone saw anything, I'd be interested in learning about it. Our December meeting will be presented by Mike Usher. Mike is our "official" Alex Trebeck. Mike puts together a trivia game of some sort where minds are challenged. He will try to have questions that will make you think and just maybe learn some obscure facts. It is a lot of fun.

If you haven't attended our December meetings before, please take special note. Usually in December the City of Naples' Santa Parade conflicts with our second Tuesday meeting. We have IN THE PAST changed our meeting to be the first Tuesday. Because of the way the calendar falls this year, there isn't a conflict. **OUR MEETING IS THE SECOND TUESDAY, DECEMBER 13, 2016, at 7: PM in the Norris Center.**

We have a full slate of speakers lined up through April, 2017. I still have May and June open. If you have any requests for a topic or speaker, please let me know, and I'll work on it. If you are interested in giving a talk, we welcome your participation.

Clear skies,
Denise Sabatini

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	Moonsset
Dec. 24	3:56 a.m.	3:20 p.m.
Dec. 31	8:52 a.m.	8:10 p.m.

Sky Events

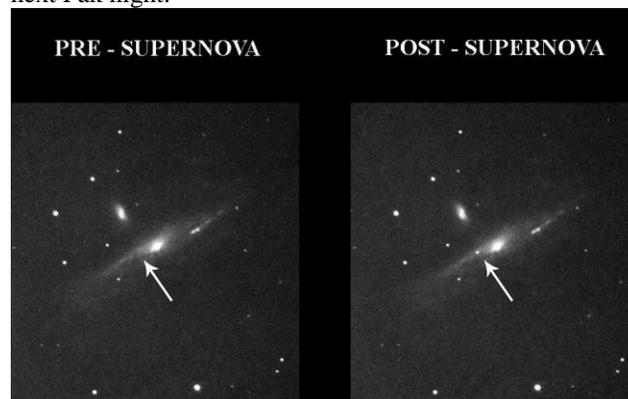
Dec. 7 - First Quarter
Dec. 13 - Full Moon
Dec. 13/14 - Geminid Meteor Shower
Dec. 20 - Last Quarter
Dec. 21/22 - Ursid Meteor Shower
Dec. 28 - New Moon

Next Meeting

December 13, 2016: Time 7:00 – 9:00 pm
Norris Center, Cambier Park

CLEAR SKIES PROVIDE GREAT VIEWING AND PHOTO OPPORTUNITIES FOR ALL By Jackie Richards

We have had some awesome weather which provided great viewing opportunities for all at the Fak and elsewhere. EAS member, Ted Wolfe, informed the EAS group that a supernova (ATLAS16dvr in NGC 1532) occurred in mid November. So naturally, we all anticipated finding it at our next Fak night.



Photos provided by Ted Wolfe of pre- and post-Supernova ATLAS16dvr in NGC 1532.

Mike Usher was able to find the faint galaxy NGC 1532 in his 20" Dob but we were not able to see the supernova through his telescope. Then Chuck Pavlick decided to find the galaxy and try imaging it. His awesome photo of the supernova is shown below as well as photos by other EAS members.

Over the next eight months, we will have five comets to chase at 10th magnitude or brighter, with the first (Comet 45P/Honda-Mrkos-Pajdusakova) arriving in our southwest night sky around December 15th. Three of them should come within binocular range. This is going to be a fun winter!

Happy Holidays to all and to all a CLEAR night!



Photo of M31 (Andromeda Galaxy) by Bob Francis taken at the Fak on 11/19/16. Canon EOS Rebel T5i; Orion ED80mm Triplet Carbon Fiber Apochromatic Refractor. One exposure at 5 minutes; ISO 1600.



Photo by Chuck Pavlick on 11/19/16 at the Fak. Supernova ATLAS16dvr in NGC 1532. Camera: Starlight Xpress SX25C; Scope: Celestron Edge 9.25 w/Lepus 0.62 Reducer; captured in Nebulosity and processed in Pixinsight and Photoshop; 6 at 120 seconds.



Photo by Chuck Pavlick on 11/27/16 at the Fak. M74. Camera: Starlight Xpress SX25C; Scope: Celestron Edge 9.25 w/Lepus 0.62 Reducer; captured in Nebulosity and processed in Pixinsight and Photoshop; 11 at 420 seconds.



Photo by Brian McGaffney taken last month from the Nutwood Observatory, Ontario, Canada. NGC 6090 Cirrus Nebula (western strip of the Veil Nebula).

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Naples High School Receives Grant for eclipse glasses Contributed by Bart Thomas

Naples High School Astronomy teacher and EAS member, Bart Thomas, received a grant for 1600 eclipse glasses from Champions of Learning on November 22, 2016. The glasses will be distributed to students in a school wide Great American Eclipse event on Monday August 21, 2017.



Bart Thomas (holding yellow folder) and students at Naples High School wearing eclipse glasses received via a grant from Champions of Learning.

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Published Articles by EAS Members

Ted Wolfe's article in the Naples News/Collier Citizen on November 21, 2016: Looking Up: Wall of gold: Peering at galaxy's earliest citizen stars.

<http://www.naplesnews.com/story/news/local/communities/collier-citizen/2016/11/21/looking-up-wall-gold-peering-galaxys-earliest-citizen-stars/94222094/>

TO VIEW THE ABOVE ARTICLE, PRESS "CTRL" AND LEFT CLICK BUTTON.

The below link provides previous articles in the Collier Citizen by Ted Wolfe that appeared over past years.
<http://search.naplesnews.com/jmg.aspx?k=looking+up+ted+wolfe>

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DARK DKY PRESERVATION IN COLLIER COUNTY (County Lighting Standards)

Email from Diana Umpierre,
 VP of International dark Sky Association

Just wanted to share 2 inter-related success stories from our IDA Florida Chapter. On Nov 15, I had the privilege of attending the Collier Co Commission mtg in Naples, Florida where 2 items related to dark skies were brought to Commission. Our IDA Florida chapter was involved in both.

County Lighting Standards - (for county-owned/ maintained properties) - Our chapter was contacted a few months ago to provide feedback to the County's lighting team. We met w/

them and gave them 2 rounds of feedback. While the standards still have room for improvement, we were happy they integrated most of our input, including the strong recommendation to use warmer LEDs at 3000K or lower.

I highly recommend watching the video below where commission deliberated on this.
<https://youtu.be/WKujBdNF1AQ>

They voted unanimously to approve. **During the mtg, the Chair commented about lighting for security. The follow-up discussion was truly amazing. Two of the commissioners (in particular Tim Nance) did a spectacular job defending the position that dark sky lighting is actually better for people, better for safety. If you don't want to watch the whole thing, start at 4:10 into the video.** If you feel like watching a very sleepy lady (me), my comments start at 15:10. (My thanks to Paul Davis and Kirt Rusenko, members of our chapter, that contributed significantly to this effort. Kirt attended mtg w/ me ;).

Media coverage

<http://www.winknews.com/2016/11/15/collier-initiative-aims-to-help-drivers-curb-light-pollution/>
<http://www.naplesnews.com/story/news/local/2016/11/28/collier-county-looks-darker-skies-save-money/94537746/>

Proclamation to celebrate Big Cypress National Park's Dark Sky Place Designation

<https://youtu.be/9ePDD0N8Rw>

I wrote the proclamation at Commissioner Nance's request who was the sponsor. You can hear Park's Superintendent comments at 1:36 into the video. They are very proud of IDA designation.

Attached are copies of the proclamation and county standards that were passed that day.

Diana Umpierre, AICP, GISP
 Vice President
[International Dark-Sky Association](http://www.internationaldarksky.org/)
[IDA Florida Chapter](http://www.idaflorida.org/), Chair
[Night Sky Conservancy](http://www.nightskyconservancy.org/), Founder
NightSkyConservancy@gmail.com
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FRIENDS OF FAKAHATCHEE DINNER

If you are interested in attending the Friends of Fakahatchee welcome back dinner on December 17, 2016 at 5:00 p.m. at The Everglades Adventure Center, 102 Collier Avenue in Everglades City, below is a link with info and reservations.

<https://www.eventbrite.com/o/friends-of-fakahatchee-4741210771>

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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>

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Dimming stars, erupting plasma, and beautiful nebulae

By Marcus Woo

Boasting intricate patterns and translucent colors, planetary nebulae are among the most beautiful sights in the universe. How they got their shapes is complicated, but astronomers think they've solved part of the mystery—with giant blobs of plasma shooting through space at half a million miles per hour.

Planetary nebulae are shells of gas and dust blown off from a dying, giant star. Most nebulae aren't spherical, but can have multiple lobes extending from opposite sides—possibly generated by powerful jets erupting from the star.

Using the Hubble Space Telescope, astronomers discovered blobs of plasma that could form some of these lobes. "We're quite excited about this," says Raghvendra Sahai, an astronomer at NASA's Jet Propulsion Laboratory. "Nobody has really been able to come up with a good argument for why we have multipolar nebulae."

Sahai and his team discovered blobs launching from a red giant star 1,200 light years away, called V Hydrae. The plasma is 17,000 degrees Fahrenheit and spans 40 astronomical units—roughly the distance between the sun and Pluto. The blobs don't erupt continuously, but once every 8.5 years.

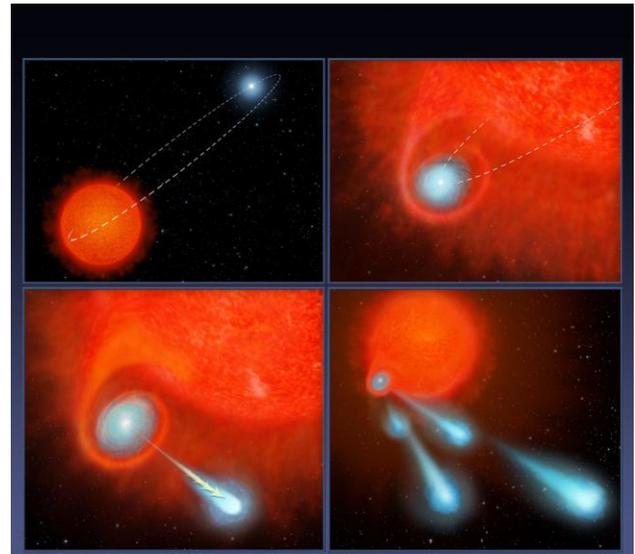
The launching pad of these blobs, the researchers propose, is a smaller, unseen star orbiting V Hydrae. The highly elliptical orbit brings the companion star through the outer layers of the

red giant at closest approach. The companion's gravity pulls plasma from the red giant. The material settles into a disk as it spirals into the companion star, whose magnetic field channels the plasma out from its poles, hurling it into space. This happens once per orbit—every 8.5 years—at closest approach.

When the red giant exhausts its fuel, it will shrink and get very hot, producing ultraviolet radiation that will excite the shell of gas blown off from it in the past. This shell, with cavities carved in it by the cannon-balls that continue to be launched every 8.5 years, will thus become visible as a beautiful bipolar or multipolar planetary nebula.

The astronomers also discovered that the companion's disk appears to wobble, flinging the cannonballs in one direction during one orbit, and a slightly different one in the next. As a result, every other orbit, the flying blobs block starlight from the red giant, which explains why V Hydrae dims every 17 years. For decades, amateur astronomers have been monitoring this variability, making V Hydrae one of the most well-studied stars.

Because the star fires plasma in the same few directions repeatedly, the blobs would create multiple lobes in the nebula—and a pretty sight for future astronomers.



This four-panel graphic illustrates how the binary-star system V Hydrae is launching balls of plasma into space. Image credit: NASA/ESA/STScI

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EAS 2017 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: _____