



# Monthly Notices of the Everglades Astronomical Society



Naples, FL  
November 2013

**Officers:** **President:** Michael Usher; **VP/Secretary:** Todd Strackbein; **Treasurer:** Bob Gurnitz  
**Newsletter Editor:** Jackie Richards ([jmrichards2005@yahoo.com](mailto:jmrichards2005@yahoo.com))  
**Home Page:** <http://naples.net/clubs/eas> **Webmaster:** Martin Zombeck ([mvz@alum.mit.edu](mailto:mvz@alum.mit.edu))  
**Fack Coordinator & information on viewing:** Charlie Paul ([cpaul651@earthlink.net](mailto:cpaul651@earthlink.net)) 410-8192

## President's Message

Holy Cow! It's almost Thanksgiving already! Black Friday is almost here too and some of you will be hunting for a telescope for yourself or family. Before you do so, I suggest you read my essay *Buying Your First Telescope* on our webpage, in the Links section.

Comet ISON is putting on a pretty poor show at the moment as it fizzles out badly. It may meet its destruction on Thanksgiving Day when it reaches perihelion, otherwise it might become visible to the unaided eye as it approaches Earth in December.

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
November 30	4:19 a.m.	3:47 p.m.
December 7	11:05 a.m.	10:54 p.m.

## Sky Events

Nov. 3 - New moon  
Nov. 9 - First quarter  
Nov. 17 - Full moon  
Nov. 17 - Leonids Meteor Shower  
Nov. 25 - Last quarter

## Next Meeting

November 12, 2013  
Time 7:00 – 9:00 pm  
At the Norris Center, Cambier Park

## Mike Usher's New Telescope By Jackie Richards

It's finally done. Our President, Mike Usher, has finished building his new 20" Newtonian f/5 telescope which made its first Fak appearance two weeks ago. I know Mike will be happy to show us all what he can see through it. The new telescope contains Teflon and glassboard bearings, .055" aluminum truss tubes and wooden parts of birch plywood with Honduran rosewood trim. The clamps are all hard maple, walnut, cocobola pine, oak and seagrape. The mirror cell is mild steel (painted) with aluminum triangles. The mirror itself is 2" Pyrex. The weight of all components is 197 pounds. With a couple of wheels and handles (as seen in the photo below), Mike can easily move the scope wheelbarrow style. If you would like an opportunity to view the night sky through Mike's telescope, all you need to do is stop by the Fak.



Mike Usher, 20" Newtonian f/5.

## Fak Photos



M45 Pleiades by Chuck Pavlick, October 2013. 24 @ 300 seconds, Canon Rebel xt.



NGC 253 by Chuck Pavlick 11/4/13 - Fakahatchee Strand. William Optics FLT 110 f/7 w/field flattener, AP Mach1, SBIG 8300c, 10 @ 600 sec.

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## NASA PRESS RELEASE

Nov. 7, 2013

J.D. Harrington

Headquarters, Washington

202-358-5241

[j.d.harrington@nasa.gov](mailto:j.d.harrington@nasa.gov)

Donna Weaver/Ray Villard

Space Telescope Science Institute, Baltimore, Md.

410-338-4493 / 410-338-4514

[dweaver@stsci.edu](mailto:dweaver@stsci.edu) / [villard@stsci.edu](mailto:villard@stsci.edu)

**RELEASE 13-321**

## NASA's Hubble Sees Asteroid Spouting Six Comet-Like Tails



This NASA Hubble Space Telescope set of images from Sept. 10, 2013 reveals a never-before-seen set of six comet-like tails radiating from a body in the asteroid belt designated P/2013 P5. Image Credit: NASA, ESA, D.Jewitt/UCLA [Larger image and full caption.](#)

Astronomers viewing our solar system's asteroid belt with NASA's Hubble Space Telescope have seen for the first time an asteroid with six comet-like tails of dust radiating from it like spokes on a wheel.

Unlike all other known asteroids, which appear simply as tiny points of light, this asteroid, designated P/2013 P5, resembles a rotating lawn sprinkler. Astronomers are puzzled over the asteroid's unusual appearance.

"We were literally dumbfounded when we saw it," said lead investigator David Jewitt of the University of California at Los Angeles. "Even more amazing, its tail structures change dramatically in just 13 days as it belches out dust. That also caught us by surprise. It's hard to believe we're looking at an asteroid."

Jewitt leads a team whose research paper appears online in the Nov. 7 issue of the *Astrophysical Journal Letters*.

P/2013 P5 has been ejecting dust periodically for at least five months. Astronomers believe it is possible the asteroid's rotation rate increased to the point where its surface started flying apart. They do not believe the tails are the result of an impact with another asteroid because they have not seen a large quantity of dust blasted into space all at once.

Scientists using the Pan-STARRS survey telescope in Hawaii announced their discovery of the asteroid Aug. 27. P/2013 P5 appeared as an unusually fuzzy-looking object. The multiple tails were discovered when Hubble was used to take a more detailed image Sept. 10.

When Hubble looked at the asteroid again Sept. 23, its appearance had totally changed. It looked as if the entire structure had swung around.

"We were completely knocked out," Jewitt said.

Careful modeling by team member Jessica Agarwal of the Max Planck Institute for Solar System Research in Lindau, Germany, showed that the tails could have been formed by a series of impulsive dust-ejection events. She calculated that dust-ejection events occurred April 15, July 18, July 24, Aug. 8, Aug. 26 and Sept. 4. Radiation pressure from the sun stretched the dust into streamers.

Radiation pressure could have spun P/2013 P5 up. Jewitt said the spin rate could have increased enough that the asteroid's weak gravity no longer could hold it together. If that happened, dust could slide toward the asteroid's equator, shatter and fall off, and drift into space to make a tail. So far, only about 100 to 1,000 tons of dust, a small fraction of the P/2013 P5's main mass, has been lost. The asteroid's nucleus, which measures 1,400 feet wide, is thousands of times more massive than the observed amount of ejected dust.

Astronomers will continue observing P/2013 P5 to see whether the dust leaves the asteroid in the equatorial plane. If it does, this would be strong evidence for a rotational breakup. Astronomers will also try to measure the asteroid's true spin rate.

Jewitt's interpretation implies that rotational breakup must be a common phenomenon in the asteroid belt; it may even be the main way small asteroids die.

"In astronomy, where you find one, you eventually find a whole bunch more," Jewitt said. "This is just an amazing object to us, and almost certainly the first of many more to come."

Jewitt said it appears P/2013 P5 is a fragment of a larger asteroid that broke apart in a collision roughly 200 million years ago. There are many collision fragments in orbits similar to P/2013 P5's. Meteorites from these bodies show evidence of having been heated to as much as 1,500 degrees Fahrenheit. This means the asteroid likely is composed of metamorphic rocks and does not hold any ice as a comet does.

For images and more information about P/2013 P5, visit:  
<http://hubblesite.org/news/2013/52>

For more information about NASA's Hubble Space Telescope, visit:  
<http://www.nasa.gov/hubble>

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**Items For Sale or Trade or Wanted:**

[http://www.naples.net/clubs/eas/equipment\\_sales.html](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:

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Address:

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Email:

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