



Monthly Notices of the Everglades Astronomical Society



Naples, FL
December 2014

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President's Message

Despite the season getting busy, we had a great turnout of members and the weather cooperated for the Lovers Key Great Outdoor Adventure Day. We showed the very active Sun to a good number of people. January will be a busy month for the EAS so keep in touch and check the calendar for volunteer opportunities. Meanwhile, the countdown to the WSP continues.

Mike Usher will be handling the speaker role on Tuesday the 16th. He will be the official MC for his homegrown game show "Star Quest" featuring the talent within our club. This is the second year for this event with "Team Jackie" taking on "Team Denise." Boasting rights are at stake. Please come and cheer on your favorite team if not participating.

I also had a suggestion at the last meeting to incorporate a section of the meeting discussing recent and upcoming events of astronomical significance. We touch on this at the meetings but could use more structure. If anyone has an interest in giving a quick 10 minute or so update at the monthly meetings, let me know. I'll assemble info for this meeting but would like to get others involved. Hope to see you there.

Clear Skies,
President Todd Strackbein

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
December 13	Just after midnight	11:57 a.m.
December 20	5:32 a.m.	4:43 p.m.

Sky Events

December 6 - Full moon
December 13 - Geminids Meteor Shower

December 14 - Last quarter
December 21 - New Moon
December 22 - Ursids Meteor Shower
December 28 - First Quarter

Next Meeting

December 16, 2014: Time 7:00 – 9:00 pm
Norris Center, Cambier Park

GEMINIDS METEOR SHOWER Saturday, December 13th

Saturday, December 13th, is not only a Fak night but is also the peak night of the best meteor shower this year, the Geminids Meteor Shower. This meteor shower is known to produce up to 120 multicolored meteors per hour at its peak. So bring your lounge chairs out to the Fak and enjoy! The last quarter moon rises just after midnight but the experts are saying we should still see many meteors even after the moon rises.

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Fak and Other Photos



Photo by Chuck Pavlick
Camera: DMK 21 AU618
800 fps each image
Scope: Orion 80Ed
Mount: Orion Skyview Pro
11/29/14



Heart Nebula by Chuck Pavlick 11/14/14 @ the Fak; Telescope: Orion Eon 72 w/Televue 0.8 reducer; Mount: AP Mach 1; Camera: SBIG 8300 c; 8 @ 900 secs. (If you rotate the picture counterclockwise, you can see an image of the human heart.)

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Where the Heavenliest of Showers Come From

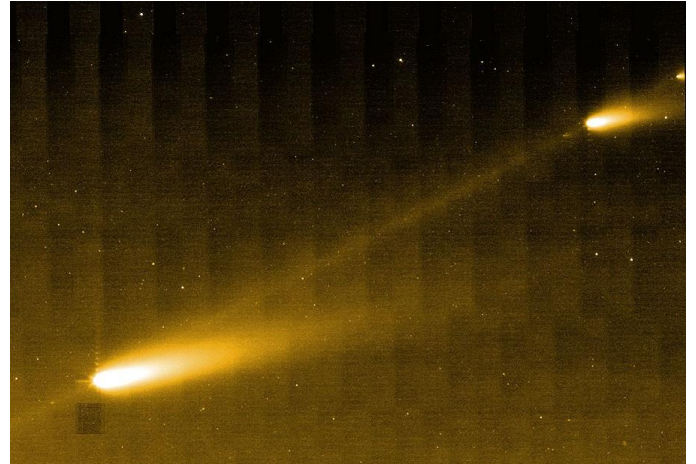
By Dr. Ethan Siegel

You might think that, so long as Earth can successfully dodge the paths of rogue asteroids and comets that hurtle our way, it's going to be smooth, unimpeded sailing in our annual orbit around the sun. But the meteor showers that illuminate the night sky periodically throughout the year not only put on spectacular shows for us, they're direct evidence that interplanetary space isn't so empty after all!

When comets (or even asteroids) enter the inner solar system, they heat up, develop tails, and experience much larger tidal forces than they usually experience. Small pieces of the original object—often multiple kilometers in diameter—break off with each pass near the sun, continuing in an *almost* identical orbit, either slightly ahead-or-behind the object's main nucleus. While both the dust and ion tails are blown well off of the main orbit, the small pieces that break off are stretched, over time, into a diffuse ellipse following the same orbit as the comet or asteroid it arose from. And each time the Earth crosses the path of that orbit, the potential for a meteor shower is there, *even after* the parent comet or asteroid is completely gone!

This relationship was first uncovered by the British astronomer John Couch Adams, who found that the Leonid dust trail must have an orbital period of 33.25 years, and that the contemporaneously discovered comet Tempel-Tuttle shared its orbit. The most famous meteor showers in the night sky all have parent bodies identified with them, including the

Lyrids (comet Thatcher), the Perseids (comet Swift-Tuttle), and what promises to be the best meteor shower of 2014: the Geminids (asteroid 3200 Phaethon). With an orbit of *only* 1.4 years, the Geminids have increased in strength since they first appeared in the mid-1800s, from only 10-to-20 meteors per hour up to *more than 100* per hour at their peak today! Your best bet to catch the most is the night of December 13th, when they ought to be at maximum, before the Moon rises at about midnight.



Comet 73P/Schwassman-Wachmann 3, via NASA's Spitzer Space Telescope, 2006.

The cometary (or asteroidal) dust density is always greatest around the parent body itself, so whenever it enters the inner solar system and the Earth passes near to it, there's a chance for a **meteor storm**, where observers at dark sky sites might see *thousands* of meteors an hour! The Leonids are well known for this, having presented spectacular shows in 1833, 1866, 1966 and a longer-period storm in the years 1998-2002. No meteor storms are anticipated for the immediate future, but the heavenliest of showers will continue to delight skywatchers for all the foreseeable years to come!

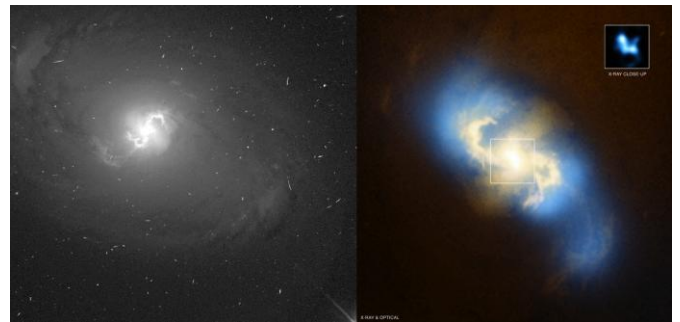


Image credit: NASA / JPL-Caltech / W. Reach (SSC/Caltech), of Comet 73P/Schwassman-Wachmann 3, via NASA's Spitzer Space Telescope, 2006.

What's the best way to see a meteor shower? Check out this article to find out: <http://www.nasa.gov/jpl/asteroids/best-meteor-showers>.

Kids can learn all about meteor showers at NASA's Space Place: <http://spaceplace.nasa.gov/meteor-shower>.

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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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EAS 2015 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:

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