Monthly Notices of the Everglades Astronomical Society

Naples, FL
September 2013

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President's Message

A new season is almost upon us! The next meeting will be held at our old standby, the Norris Center. Just to show you how old I am, I remember the original building on the site and played in it many times when I was a kid - it was a recreational center back then. I lived only two blocks away in a house that no longer exists; there is a hotel there now.

Be sure to send in your registration for the Winter Star Party as soon as possible, see the info below. If you haven't heard about it before, you will hear a great deal about it in the next few months.

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
September 28	12:34 a.m.	2:07 p.m.
October 5	6:53 a.m.	6:37 p.m.

Sky Events

Sept. 5 - New moon
Sept. 12 - First quarter
Sept. 19 - Full moon
Sept. 26 - Last quarter

Next Meeting

September 10, 2013
Time 7:00 – 9:00 pm
At the Norris Center, Cambier Park

More Fak Fun
By Jackie Richards

What would we do without the Fak? The Fak is one of the darkest spots easily accessible to us in our area and so many of our astronomy needs can be fulfilled there. When the weather cooperates with us, there are so many great sky objects to view from there with our telescopes and it is the perfect place for photographing the night sky.

Several photos of the Andromeda galaxy were taken by club member, Rick Piper, and me, and then stacked by club member, Todd Strackbein, using Deep Sky Tracker and the final product can be seen below. Deep Sky Tracker is a free

Photo by Rick Piper and Jackie Richards taken at the Fakahatchee Strand. Andromeda Galaxy and M110. Canon XSi, ISO 1600, 10 frames captured at between one- and two-minute exposures. Stacked by Todd Strackbein with Deep Sky Stacker program.

program and can be downloaded at the website http://deepskystacker.free.fr/english/download.htm. While this is a recommended free program for photographing deep sky objects, another recommended free program for photographing the sun, moon and planets in our solar system is Registax which can be downloaded by going to this site: http://www.astronomie.be/registax/html/download_v4.html.

The summer heat has not stopped club members from roughing it out at the Fak, but we are all happy that cooler weather is right around the corner. The summer heat does, however, provide us with an opportunity to get cool lightning shots like the one below which was taken during a lightning storm over Miami and easily photographed from the Fak.

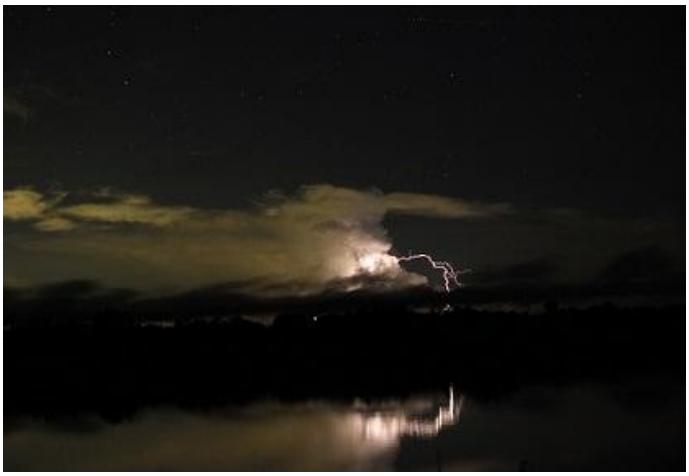

Photo by Jackie Richards. Lightning over Miami taken at the Fakahatchee Strand, Canon Rebel T2i, ISO 1600, 15 seconds.

Winter Star Party 2014

Anyone who attended the Winter Star Party (WSP) last year should have received a postcard in the mail last week and an email which stated that the registration website (http://www.scas.org /wsp.html) was not quite ready but should be within the next few days. As of this weekend, the site was still not available for registration but should be soon. Anyone with questions about registration can send an email to registrars@scas.org.

If you have never attended the WSP, I highly recommend going as last year was my first, and I enjoyed it so much that I plan to go every year. And if camping is not for you, especially the ladies, please think again. As a former New York City girl, I never thought I would spend one night in a tent anywhere, but I have to say that it really was a lot of fun. And the ladies will be happy to know that there is NEVER a line at the showers/bathrooms. This is only a problem for the men at the WSP. That was a first.

NASA Space Place

Size Does Matter, But So Does Dark Energy

By Dr. Ethan Siegel

Here in our own galactic backyard, the Milky Way contains some 200-400 billion stars, and that's not even the biggest galaxy in our own local group. Andromeda (M31) is even bigger and more massive than we are, made up of around a *trillion* stars! When you throw in the Triangulum Galaxy (M33), the Large and Small Magellanic Clouds, and the dozens of dwarf galaxies and hundreds of globular clusters gravitationally bound to us and our nearest neighbors, our local group sure does seem impressive.

Yet that's just chicken feed compared to the largest structures in the universe. Giant clusters and superclusters of galaxies, containing thousands of times the mass of our entire local group, can be found omnidirectionally with telescope surveys. Perhaps the two most famous examples are the nearby Virgo Cluster and the somewhat more distant Coma Supercluster, the latter containing more than 3,000 galaxies. There are millions of giant clusters like this in our observable universe, and the gravitational forces at play are absolutely tremendous: there are literally *quadrillions* of times the mass of our Sun in these systems.

The largest superclusters line up along filaments, forming a great cosmic web of structure with huge intergalactic voids in between the galaxy-rich regions. These galaxy filaments span anywhere from hundreds of millions of light-years all the way up to more than a *billion* light years in length. The CfA2 Great Wall, the Sloan Great Wall, and most recently, the Huge-LQG (Large Quasar Group) are the largest known ones, with the Huge-LQG -- a group of at least 73 quasars –apparently stretching nearly 4 billion light years in its longest direction: more than 5% of the observable universe! With more mass than a million Milky Way galaxies in there, this structure is a puzzle for cosmology.

You see, with the normal matter, dark matter, and dark energy in our universe, there's an upper limit to the size of gravitationally bound filaments that should form. The Huge-LQG, if real, is more than *double* the size of that largest predicted structure, and this could cast doubts on the core principle of cosmology: that on the largest scales, the universe is roughly uniform everywhere. But this might not pose a problem at all, thanks to an unlikely culprit: **dark energy**. Just as the local group is part of the Virgo Supercluster but recedes from it, and the Leo Cluster -- a large member of the Coma Supercluster -- is accelerating away from Coma, it's

conceivable that the Huge-LQG isn't a single, bound structure at all, but will eventually be driven apart by dark energy. Either way, we're just a tiny drop in the vast cosmic ocean, on the outskirts of its rich, yet barely fathomable depths.

Digital mosaic of infrared light (courtesy of Spitzer) and visible light (SDSS) of the Coma Cluster, the largest member of the Coma Supercluster. Image credit: NASA / JPL-Caltech / Goddard Space Flight Center / Sloan Digital Sky Survey.

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: _____

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Phone: _____

Email: _____