



Monthly Notices of the Everglades Astronomical Society



Naples, FL
September 2014

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President's Message

Welcome back! This Tuesday is our first regular meeting at the Norris Center of the season. I'm sure we are all looking forward to the wonderful observing weather ahead and participating in our many upcoming outreach opportunities. Charlie will be discussing and asking for volunteers for Astronomy Day at the Corkscrew Swamp Sanctuary on Oct. 4th. Please check your calendars. We are also looking for presenters for several meetings this year. Let us know your ideas.

As a follow-up side note, I had been writing in several previous newsletters about a possible YMCA viewing event. Unfortunately, I was unable to coordinate viewings with the YMCA since I ended up working and living out of town all summer. Now that I'm back (hopefully for good), I plan to contact them to see how we can work with them in the future.

This Tuesday's meeting, member Mike Harden will be giving the presentation on the set-up and use of "All Sky" Cameras, the use of time lapse photography, etc. Mike has made great strides in these areas and will be sharing some very interesting image processing techniques. I myself am looking forward to his presentation and seeing everyone back.

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	Moonset
September 20	3:09 a.m.	4:16 p.m.
September 27	9:13 a.m.	8:37 p.m.

Sky Events

September 2 - First quarter
September 8 - Full moon
September 15 - Last quarter
September 23 - New Moon

Next Meeting

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

Fak and Other Photos

This is what you're missing when you're not at the Fak. Better weather is coming our way soon so be sure to get out to the Fak.



Photo by Mike Harden taken at the Fak on 8/23/14. Canon T3i DSLR.

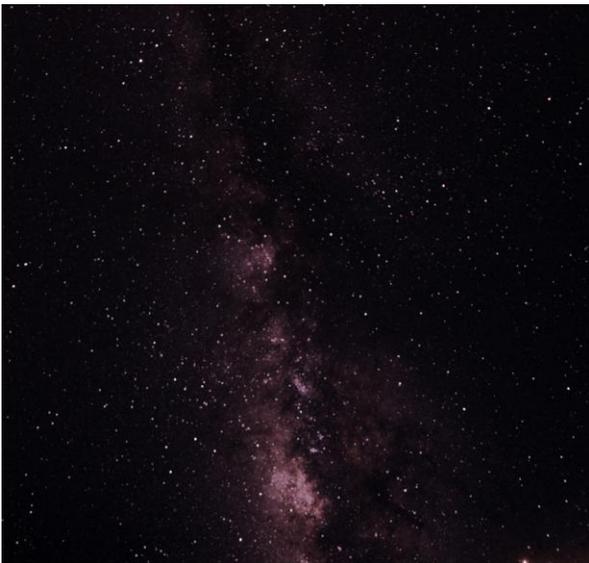


Photo of the Milky Way taken by Mike Harden at the Fak on 8/23/14. Canon T3i DSLR, 14 mm F2.8 Lens, Deep Sky Stacker, Photoshop.



North American and Pelican Nebulas by Chuck Pavlick taken at the Fak on 8/23/14. Orion 72 EON with .8 focal reducer; guided with 50mm guide scope and PHD guiding; AP Mach 1; SBIG 8300c; 11 @ 720 secs.

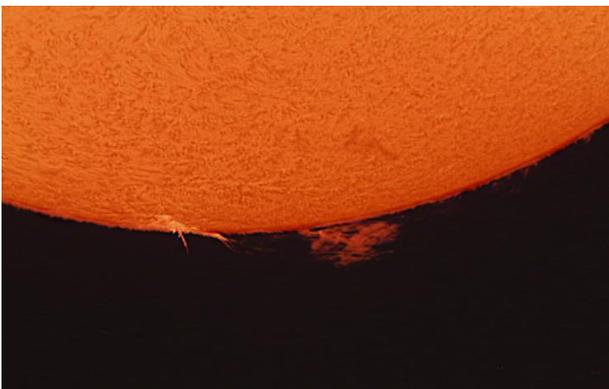


Photo of the sun taken by Chuck Pavlick on 8/21/14. Chuck actually saw the bright area form and erupt.



Lightning Photo by Jackie Richards at the Fak 8/23/14. Canon EOS Rebel T2i

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Droughts, Floods and the Earth's Gravity, by the GRACE of NASA

By Dr. Ethan Siegel

When you think about gravitation here on Earth, you very likely think about how constant it is, at 9.8 m/s^2 (32 ft/s^2). Only, that's not quite right. Depending on how thick the Earth's crust is, whether you're slightly closer to or farther from the Earth's center, or what the density of the material beneath you is, you'll experience slight variations in Earth's gravity as large as 0.2%, something you'd need to account for if you were a pendulum-clock-maker.

But surprisingly, the amount of *water content* stored on land in the Earth actually changes the gravity field of where you are by a significant, measurable amount. Over land, water is stored in lakes, rivers, aquifers, soil moisture, snow and

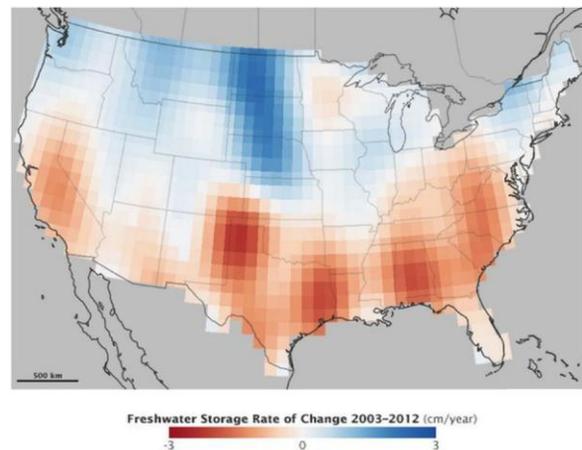


Image credit: NASA Earth Observatory image by Jesse Allen, using GRACE data provide courtesy of Jay Famigleitti, University of California Irvine and Matthew Rodell, NASA Goddard Space Flight Center. Caption by Holli Riebeck.

glaciers. Even a change of just a few centimeters in the water table of an area can be clearly discerned by our best space-borne mission: NASA's twin Gravity Recovery and Climate Experiment (GRACE) satellites.

Since its 2002 launch, GRACE has seen the water-table-equivalent of the United States (and the rest of the world) change significantly over that time. Groundwater supplies are vital for agriculture and provide half of the world's drinking water. Yet GRACE has seen California's central valley and the southern high plains rapidly deplete their groundwater reserves, endangering a significant portion of the nation's food supply. Meanwhile, the upper Missouri River Basin—recently home to severe flooding—continues to see its water table rise.

NASA's GRACE satellites are the only pieces of equipment currently capable of making these global, precision measurements, providing our best knowledge for mitigating these terrestrial changes. Thanks to GRACE, we've been able to quantify the water loss of the Colorado River Basin (65 cubic kilometers), add months to the lead-time water managers have for flood prediction, and better predict the impacts of droughts worldwide. As NASA scientist Matthew Rodell says, "[W]ithout GRACE we would have no routine, global measurements of changes in groundwater availability. Other satellites can't do it, and ground-based monitoring is inadequate." Even though the GRACE satellites are nearing the end of their lives, the GRACE Follow-On satellites will be launched in 2017, providing us with this valuable data far into the future. Although the climate is surely changing, it's water availability, *not* sea level rise, that's the largest near-term danger, and the most important aspect we can work to understand!

Learn more about NASA's GRACE mission here:
http://www.nasa.gov/mission_pages/Grace/

Kids can learn all about launching objects into Earth's orbit by shooting a (digital) cannonball on NASA's Space Place website. Check it out at: <http://spaceplace.nasa.gov/how-orbits-work/>

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Corrections:

Last month's Saturn article should have stated that the program used to stack the pictures was Registax, not Firecapture.

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 2014 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:
