



Monthly Notices of the Everglades Astronomical Society



Naples, FL
July 2015

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President's Message

This Tuesday is our first summer casual meeting at Second Cup in the Mercato Shops.

<http://www.mercatoshops.com/store/second-cup/2137049176/2138839717>. We will return to the Norris Center in September. The weather has been rough these past weeks with the tropical patterns fully upon us and again Saturn tracking a bit low in the southern sky this year. It definitely takes a bit more determination but well worth seeing what our summer skies have to offer.

The next opportunity to participate in the "Family Fun Night" at the Naples YMCA is July 24th. The Sun sets and gets dark after 8:30pm. The moon is well positioned and 58% phase. Saturn is somewhat close to the moon but high and well positioned for viewing. We had a great time at the last event as you can tell by Jackie's article.

Watch your emails to see if any events get scheduled in the coming weeks where help is needed. Clear skies and enjoy your summer.

Clear Skies, 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 |
|---------|-----------|-----------|
| July 11 | 1:59 a.m. | 3:27 p.m. |
| July 18 | 8:04 a.m. | 9:05 p.m. |

Sky Events

July 8 - Last quarter
July 14 - New Horizons at Pluto
July 15 - New Moon
July 23 - First Quarter
July 31 - Full moon
Aug. 12-13 - Perseids Meteor Shower (early reminder)

Next Meeting

July 14, 2015: Time 7:00 – 9:00 pm
Second Cup (@ Mercato)
9115 Strada Place
Naples, FL

YMCA Family Night A Success By Jackie Richards

The YMCA held its first family night movie event for its members on its rooftop, and EAS members, Todd Strackbein, Mike Usher, Rick Piper and I, represented the club at this event. It was a fantastic night for all. The kids and parents were amazed at what they could see through our scopes. Highlights of the night were the moon, Jupiter, Venus and Saturn. Lots of great viewing objects for a light-polluted area.



EAS President Todd Strackbein's daughter, Brielle, at the YMCA Family Night Event on 6/26/15.

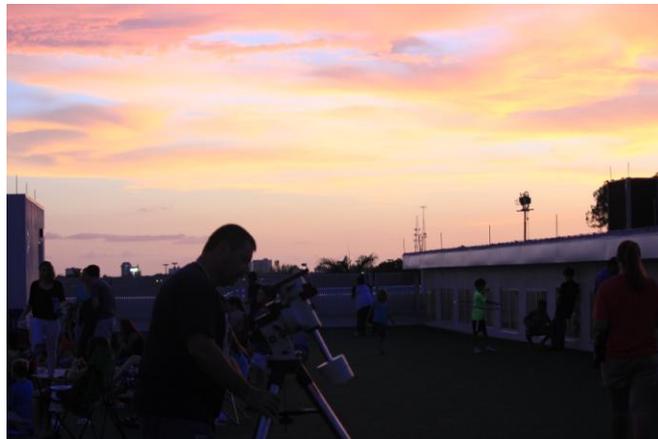
During some down time, Mike Usher tried out a new gadget, an Orion SteadyPix Pro, which includes two attachments for your eyepiece to secure a point-and-shoot camera or a smart phone to a telescope for photographing. This works well for bright objects such as the ones we were showing that night. The below photo was taken by Mike Usher with a typical point-and-shoot camera (Sony Cybershot 12.1 megapixels) with his f/5 ten inch scope with a 13mm Nagler eyepiece yielding 96x magnification. The moon was waxing gibbous at 71% illuminated; south is at the top right. If you are interested in this device, the cost is about \$65. Check out this site:

<http://www.telescope.com/Astrophotography/Camera-Adapters-T-Rings/Orion-SteadyPix-Pro-Universal-CameraSmartphone-Mount-125/pc/-1/c/4/sc/62/p/103503.uts>

Also, check out the link to club member Ted Wolfe's article on the Moon's straight wall below.



Photo of the Moon by Mike Usher.



YMCA rooftop at sunset during its Family Night event on 6/26/15 at which EAS members volunteered. Todd Strackbein at his telescope.

Club members will be volunteering for two more summer family events at the YMCA in July and August.

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Published Articles by EAS Members

Ted Wolfe's article in the Naples News/Collier Citizen on June 23, 2015, Looking up: Lunar Cliffs: Taking a Closer Peek at the Moon's Straight Wall:

http://www.naplesnews.com/community/collier-citizen/looking-up-lunar-cliffs-taking-a-closer-peek-at-the-moons-straight-wall_11308467

Mike Usher's article in the Coastal Breeze News on 6/26/15, Name the Exoplanet:

<http://www.coastalbreezenews.com/2015/06/25/name-the-exoplanet/>

TO VIEW THESE ARTICLES, PRESS "CTRL" AND LEFT CLICK BUTTON.



No Surprise! Earth's Strongest Gravity Lies Atop The Highest Mountains

By Ethan Siegel

Put more mass beneath your feet and feel the downward acceleration due to gravity increase. Newton's law of universal gravitation may have been superseded by Einstein's, but it still describes the gravitational force and acceleration here on Earth to remarkable precision. The acceleration you experience is directly proportional to the amount of mass you "see," but inversely proportional to the distance from you to that mass squared.

The denser the mass beneath your feet, the stronger the gravitational force, and when you are closer to such a mass, the force is even greater. At higher elevations or even higher altitudes, you'd expect your gravitational force to drop as you move farther from Earth's center. You'd probably also expect that downward acceleration to be greater if you stood atop a large mountain than if you flew tens of thousands of feet above a flat ocean, with nothing but ultra-light air and liquid water beneath you for all those miles. In fact this is true, but not just due to the mountain's extra mass!

Earth is built like a layer-cake, with the less dense atmosphere, ocean, and crust floating atop the denser mantle, which in turn floats atop the outer and inner cores of our planet. An iceberg's buoyancy is enough to lift only about one tenth of it above the sea, with the other nine tenths below the surface. Similarly, each and every mountain range has a corresponding

"invisible mountain" that dips deep into the mantle. Beneath the ocean floor, Earth's crust might be only three to six miles thick, but it can exceed 40 miles in thickness around major mountain ranges like the Himalayas and the Andes. It's where one of Earth's tectonic plates subducts beneath another that we see the largest gravitational anomalies: another confirmation of the theory of continental drift.

A combination of instruments aboard NASA's Gravity Recovery and Climate Experiment (GRACE) satellites, including the SuperSTAR accelerometer, the K-band ranging system and the onboard GPS receiver, have enabled the construction of the most accurate map of Earth's gravitational field ever: to accelerations of nanometers per second squared. While the mountaintops may be farther from Earth's center than any other point, the extra mass of the mountains and their roots – minus the mass of the displaced mantle – accounts for the true gravitational accelerations we actually see. It's only by the grace of these satellites that we can measure this to such accuracy and confirm what was first conjectured in the 1800s: that the full layer-cake structure of Earth must be accounted for to explain the gravity we experience on our world!

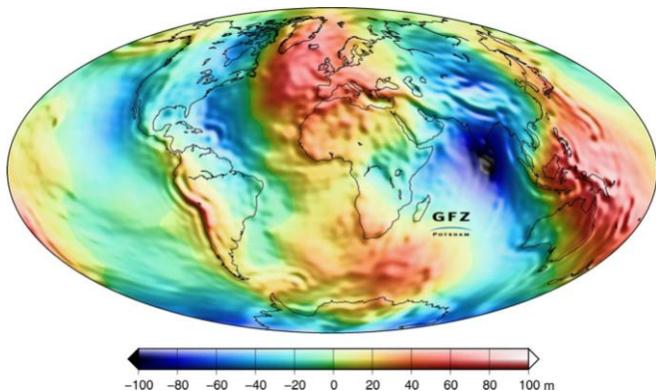


Image credit: NASA / GRACE mission / Christoph Reigber, et al. (2005): An Earth gravity field model complete to degree and order 150 from GRACE: EIGEN-GRACE02S, *Journal of Geodynamics* 39(1),1–10. Reds indicate greater gravitational anomalies; blues are smaller ones.

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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:

Email:
