



Monthly Notices of the Everglades Astronomical Society



Naples, FL
June 2013

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President's Message

It would appear that we will be remaining in the Norris Center next season after all; however, we will be losing our storage. At least the Norris Center is giving us a rent break for that! If you have any spare storage space at home please let Charlie know.

We also have a club program which will lend an 8 inch reflector to a member for a limited time; please ask about it next time you attend a meeting.

The rather unfriendly Tropical Storm that passed us by was unkind enough to rob us of two Saturdays at the Fak. The next available day is the last Saturday in June.

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
June 29	12:29 a.m.	1:03 p.m.
July 6	5:19 a.m.	7:07 p.m.

Sky Events

- June 8 - New moon
- June 11 - Gamma Delphinid meteor shower (4:30 a.m.)
- June 16 - First quarter
- June 23 - Full moon
- June 29 - Last quarter

Next Meeting

June 11, 2013
Time 7:00 – 9:00 pm
At the Norris Center, Cambier Park

Circumpolar Stars

By Jackie Richards

A circumpolar star is a star that never disappears from the horizon due to its proximity to one of the celestial poles. For us it is the North Pole. As the Earth spins every day on its axis, the stars appear to rotate in circular paths around the north celestial pole. In looking at the below photo taken by Jason Brod, an astrophotographer who frequents the Fak, you can see the circular paths of the stars around the North Pole. The star closest to the North Pole, which is near the center of the below photo, is Polaris (the North Star) and is circumpolar. The photo provides us with a beneficial effect of how the paths of the stars forming the inner circles remain above the horizon at all times, making them circumpolar. The paths of the stars that form the outer circles will move below the horizon so those stars are not circumpolar.



Photo by Jason Brod taken at the Fakahatchee Strand on 3/8/13. Modified Canon 1000 D, Pixinsight, 30x120 seconds, ISO 200.

Constellations also move in circular paths around the northern celestial pole. That is why the constellations face one direction at one time during the night and then appear to be upside down. It's the same effect as when we see the constellations move from the eastern horizon to the western horizon, but the circumpolar constellations are visible at all times during the night. Some circumpolar constellations are Ursa Major (The Big Dipper) and Ursa Minor (The Little Dipper) of which Polaris is a part. We watch the movements of these circumpolar stars and constellations when we are at the Fak. Hope you will join us.



Triple Treat

By Dr. Ethan Siegel

The solar system is a busy place, with five wandering planets visible to the naked eye alone. When any two pass close by each other from our point of view, we see an astronomical *conjunction*, but on very rare occasions, three planets will find themselves grouped together: a *triple conjunction*. Towards the end of May, Mercury, Venus and Jupiter will treat us to the best triple conjunction in years.

On May 25th, Mercury will pass within 1.4° of Venus, then two days later Mercury comes within 2.4° of Jupiter, and finally on the 28th, Jupiter and Venus approach within 1° of one another. If it weren't for the slight orbital tilt of our solar system's planetary orbits, these conjunctions would all be *occultations* instead. During the nights of May 26th-27th, all three planets are visible immediately after sunset within the same 3° field of view, with the triple conjunction peaking in a triangular shape on the 26th. (For scale, the full Moon subtends about 1/2°.) The three planets appear close together for a few days more, making a line in the sky on the 30th/31st.

How does this happen? Mercury and Venus race around the Sun far faster than Earth, with Mercury completing more than four revolutions around the Sun for each one that Earth makes. At the same time, Jupiter is far slower, taking 12 years to orbit just once around the Sun. Jupiter's been high in the sky during the early parts of the night, but steadily lowers throughout May as Earth continues to move away from it, approaching its maximum distance from Earth. Mercury and Venus, meanwhile, begin to move out from behind the Sun during May: Venus at the beginning of the month and Mercury in the middle.

Thus, during this triple conjunction, *all three* planets will be on the far side of the Sun, something that happens just 25% of the time in triple conjunctions involving Mercury and Venus! If you telescopically resolve these planets into disks, you'll see our inner worlds in a nearly-full gibbous phase. Jupiter

will appear largest in terms of angular diameter, followed by Venus and lastly by Mercury. Just a year ago, during its now-famous transit, Venus took up more than a full arc-minute in the sky; during this conjunction, it will just *one-sixth* that angular size and less than a third the apparent diameter of Jupiter. Nevertheless, Venus will still be more than **six times** as bright as Jupiter during this time, outshining all night-sky objects other than the Moon. Closer conjunctions of two naked-eye planets are frequent, but getting three or more like this happens just once or twice per decade, so don't miss your chance to see it.

And speaking of occultations, The Space Place has a great kid-friendly explanation of the Venus transit and solar eclipses of 2012 at spaceplace.nasa.gov/venus-transit.

Dr. Ethan Siegel, a theoretical astrophysicist, is a professor at the University of Portland (OR) and Lewis & Clark College.



Caption:

The image shows the configuration of Mercury, Venus, and Jupiter in the western sky just after sunset on May 26, 2013. Insets show the relative size appearance of the planets on that date.

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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:

Phone:

Email:
