



Monthly Notices of the Everglades Astronomical Society



Naples, FL
January 2010

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President's Message

Happy New Year !! As we get ready for winter viewing, we didn't really need all this cold weather, but with the lower humidity the skies at the FAK will be stunning. Before our meeting on the 12th, we have our public solar viewing at Cambier Park, on Jan. 9th, from 9AM until 3PM. We always need help with this, so come out and give us a hand for an hour or so.. Telescopes for this event are not the issue, our members provide four of those, we need help meeting the folks that come by our display.

This months program is being provided by Ted Wolfe, he will show us his astro photos. Don't miss this outstanding program. In February our program will be presented by Jack Berninger, and in March John Fishwick will be doing the program. Three months our great presentations.

You may have noticed that you are sending your dues to a post office box on Marco Island, Bob Gurnitz, our treasurer lives there. Your dues support our club's rent, insurance and astronomy league membership. So it's critical that they are paid by February. For this year the dues are still \$20.00 per family. Where else can you get such a deal.

See you at our January 9th Cambier Park solar event and our meeting on the 12th.

Clear Skies

Charlie Paul

Dates for the "Fack"

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 |
|--------|----------|---------|
| Jan 9 | 3:21AM | |
| Jan 16 | | 7:19PM |

Sky Events

Dec 31 – Full Moon (Blue Moon)
Jan 2 – Quadrantid Meteor shower
Jan 7 – 3rd Quarter
Jan 15 – New Moon
Jan 23 – 1st Quarter
Jan 30 – Full Moon

Next Meeting

January 12, 2010
Time 7:00 – 9 pm
At the Norris Center

Astronomical Trivia Question of the Month

The stars AE Aurigae, 52 Arietis, and Mu Columbae although widely separated in the sky seem to share a common origin. Where would that be?

- Large Magellanic Cloud
- Pleiades
- M53 a globular cluster in Coma Berenices
- Orion Nebula

Answer on next page.



Sunglasses for a Solar Observatory

By Patrick Barry

In December 2006, an enormous solar flare erupted on the Sun's surface. The blast hurled a billion-ton cloud of gas (a coronal mass ejection, or CME) toward Earth and sparked days of intense geomagnetic activity with Northern Lights appearing across much of the United States.

While sky watchers enjoyed the show from Earth's surface, something ironic was happening in Earth orbit.

At the onset of the storm, the solar flare unleashed an intense pulse of X-rays. The flash blinded the Solar X-Ray Imager (SXI) on NOAA's GOES-13 satellite, damaging several rows of pixels. SXI was designed to monitor solar flares, but it must also be able to protect itself in extreme cases.

That's why NASA engineers gave the newest Geostationary Operational Environmental Satellite a new set of sophisticated "sunglasses." The new GOES-14 launched June 27 and reached geosynchronous orbit July 8.

Its "sunglasses" are a new flight-software package that will enable the SXI sensor to observe even intense solar flares safely. Radiation from these largest flares can endanger military and civilian communications satellites, threaten astronauts in orbit, and even knock out cities' power grids. SXI serves as an early warning system for these flares and helps scientists better understand what causes them.

"We wanted to protect the sensor from overexposure, but we didn't want to shield it so much that it couldn't gather data when a flare is occurring," says Cynthia Tanner, SXI instrument systems manager for the GOES-NOP series at NASA's Goddard Space Flight Center in Greenbelt, Maryland. (GOES-14 was called GOES-O before achieving orbit).

Shielding the sensor from X-rays also reduces the amount of data it can gather about the flare. It's like stargazing with dark sunglasses on. So NASA engineers must strike a balance between protecting the sensor and gathering useful data.

When a dangerous flare occurs, the new SXI sensor can protect itself with five levels of gradually "darker" sunglasses. Each level is a combination of filters and exposure times carefully calibrated to control the sensor's exposure to harmful high-energy X-rays.

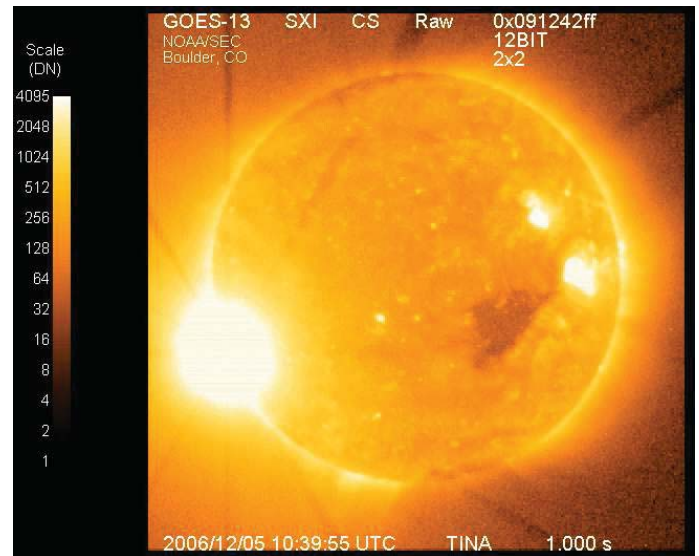
As the blast of X-rays from a major solar flare swells, GOES-14 can step up the protection for SXI through these five levels. The damaged sensor on GOES-13 had only two levels of protection—low and high. Rather than gradually increasing the amount of protection, the older sensor would remain at the low level of protection, switching to the high level only when the X-ray dose was very high.

"You can collect more science while you're going up through the levels of protection," Tanner says. "We've really fine-tuned it."

Forecasters anticipate a new solar maximum in 2012-2013, with plenty of sunspots and even more solar flares. "GOES-14 is ready," says Tanner.

For a great kid-level explanation of solar "indigestion" and space weather, check out <http://www.spaceplace.nasa.gov/en/kids/goes/spaceweather>.

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X-9 class solar flare December 6, 2006, as seen by GOES-13's Solar X-ray Imager. It was one of the strongest flares in the past 30 years.

Answer to Trivia Question

The answer is d the Orion Nebula. About 2 million years ago the supernova event that created Bernard's Loop happened releasing three stars from their gravitational bondage.

2010 DUES

For the bargain price of only \$20.00, all this can be yours for the coming year:

- Meet with your fellow astronomy enthusiasts at least 10 times a year
- Many opportunities to freeze/sweat/get bitten by mosquitoes in the Fakahatchee Strand
- View planets, nebulae and many other celestial objects
- Reduced price for *Sky & Telescope* and *Astronomy* subscriptions

Don't miss out! Fill out this form (please print plainly) and send it with your \$20 check, payable to *Everglades Astronomical Society*, to P.O. Box 1868 Marco Island, Florida 34146

Name: _____.

Address: _____.

Phone: _____ Email: _____.