



Monthly Notices of the Everglades Astronomical Society



Naples, FL
August 2010

Co-Presidents: Charlie Paul, Rick Piper; **Vice President:** Michael Usher; **Secretary:** Todd Strackbein;
Treasurer: Bob Gurnitz; **Newsletter Editor:** Frank Ligas (EAS.Naples.NewsLetter@gmail.com);
Fack Coordinator: Charlie Paul -- for information on viewing (cpaul651@earthlink.net , 239-410-8192)
Webmaster: Martin Zombeck (mvz@alum.mit.edu)

Home Page: <http://gator.naples.net/clubs/eas>

President's Message

Hello !! EAS Stargazers

As is the pattern for our summer viewing, we look to East in the afternoon to see if the storms will clear early enough for FAK viewing by 9:30 pm. Most of the time we give up and don't go, but over the summers I have observed at the FAK, wonderful skies occur very quickly. So give the FAK a try on these summer viewing nights you may be totally surprised.

Our next Books A Million meeting is August 10th, come and enjoy the companionship of our club members setting around having coffee, sweets and good discussions about almost everything even including Astronomy.

The Perseid meteor shower is August 12th, we are thinking of going out on Friday the 13th and maybe the 14th. We can finalize this at our Books A Million get together.

Don't forget to visit our Web site, Martin Zombeck has crafted a great site.

(<http://gator.naples.net/clubs/eas/>)

Charlie Paul
EAS Co-President

Dates for the "Fak":

These dates are very dependant on the cloud cover this time of the year.

Date	Sun Set	Moonrise	Moonsset
Aug 7	8:10 pm	4:01 am	6:11 pm
Aug 12	8:06 pm	9:40 am	9:49 pm
Aug 13	8:05 pm	10:45 am	10:29 pm
April 14	8:04 pm	11:50 am	11:10 pm

Sky Events

Aug 3 -- Last Quarter Moon
Aug 9 -- New Moon
Aug 16 -- First Quarter Moon
Aug 24 -- Full Moon

Meteor Showers: Perseid
Radiating from the constellation Perseus (NE)
Morning of maximum: August 13
Hourly rate: 60
Parent body: 109P/Swift-Tuttle

Next Meeting

August 10, 2010
Time 7:30pm
At the Books-A-Million, Naples, FL
(Across from the Coastland Mall)

Astronomical Trivia Question of the Month

When was the worst recorded Solar Super Storm in recorded history?

- Oct 22, 2003.
- Dec 19-22, 2012.
- September 1-2, 1859.
- April 1-15, 357 bc.

**Answer on next page.*



The Sun Can Still Remind Us Who's Boss

by Dr. Tony Phillips

Grab your cell phone and take a good long look. It's indispensable, right? It tells time, surfs the web, keeps track of your appointments and, by the way, also makes phone calls. Modern people can hardly live without one.

One good solar flare could knock it all out.

"In the 21st century, we're increasingly dependent on technology," points out Tom Bogdan, director of NOAA's Space Weather Prediction Center in Boulder, Colorado. "This makes solar activity an important part of our daily lives."

Indeed, bad space weather can knock out power systems, telecommunications, financial and emergency services—basically, anything that needs electronics to work. That's why NOAA is building a new fleet of "space weather stations," the GOES-R satellites.

"GOES-R will bring our existing fleet of weather satellites into the 21st century," says Bogdan. "They're designed to monitor not only Earth weather, but space weather as well."

NOAA's existing fleet of Geostationary Operational Environmental Satellites (GOES) already includes some space weather capabilities: solar ultraviolet and X-ray telescopes, a magnetometer and energetic particle sensors. GOES-R will improve upon these instruments and add important new sensors to the mix.

One of Bogdan's favorites is a particle detector named "MPS-Low," which specializes in sensing low-energy (30 eV – 30 keV) particles from the sun.

Who cares about low-energy particles? It turns out they can be as troublesome as their high-energy counterparts. Protons and other atomic nuclei accelerated to the highest energies by solar flares can penetrate a satellite's exterior surface, causing all kinds of problems when they reach internal electronics. Low-energy particles, particularly electrons, can't penetrate so deeply. Instead, they do their damage on the outside.

As Bogdan explains, "Low-energy particles can build up on the surfaces of spacecraft, creating a mist of charge. As voltages increase, sparks and arcs can zap electronics—or emit radio pulses that can be misinterpreted by onboard computers as a command."

The Galaxy 15 communications satellite stopped working during a solar wind storm in April 2010, and many researchers believe low-energy particles are to blame. GOES-R will be able to monitor this population of

particles and alert operators when it's time to shut down sensitive systems.

"This is something new GOES-R will do for us," says Bogdan.

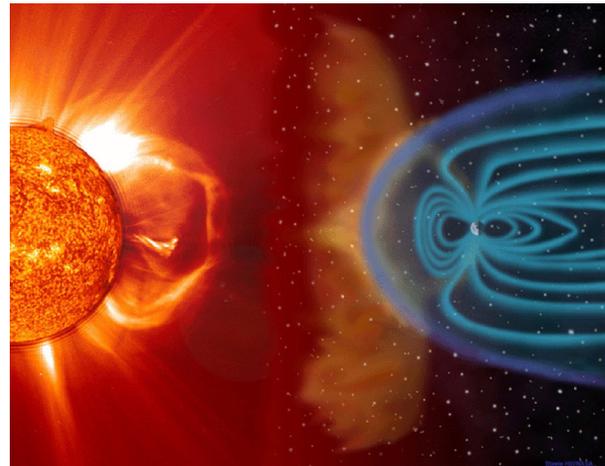
The GOES-R magnetometer is also a step ahead. It will sample our planet's magnetic field four times faster than its predecessors, sensing vibrations that previous GOES satellites might have missed. Among other things, this will help forecasters anticipate the buildup of geomagnetic storms.

And then there are the pictures. GOES-R will beam back striking images of the sun at X-ray and extreme UV wavelengths. These are parts of the electromagnetic spectrum where solar flares and other eruptions make themselves known with bright flashes of high-energy radiation. GOES-R will pinpoint the flashes and identify their sources, allowing forecasters to quickly assess whether or not Earth is in the "line of fire."

They might also be able to answer the question, Is my cell phone about to stop working?

The first GOES-R satellite is scheduled for launch in 2015. Check www.goes-r.gov for updates. Space weather comes down to Earth in the clear and fun explanation for young people on SciJinks, <http://scijinks.gov/space-weather-and-us>.

This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.



Caption: *In spite of Earth's protective magnetosphere, solar storms can wreak havoc with Earth satellites and other expensive electronics on the ground.*

Answer to the trivia question:

C: . September 1-2, 1859

Credit http://science.nasa.gov/science-news/science-at-nasa/2003/23oct_superstorm

2010 Membership Dues:

For the bargain price of only **\$20.⁰⁰ per family**, 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.

Don't miss out! Fill out this form (please print plainly) and send it with your \$20 check, payable to:

Everglades Astronomical Society

P.O. Box 1868

Marco Island, Florida 34146

Name: _____
Address: _____
Phone: _____
Email: _____