



# Monthly Notices of the Everglades Astronomical Society



Naples, FL  
February 2009

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## Presidents Message

As discussed last month, this months meeting was moved up to February 19th, the third Thursday of the month, because many of our members and most of our officers will be attending the Winter Star Party held the week of our regular meeting. Our March meeting will return to the fourth Thursday of the month.

Thursday February 19th 7:00pm at the Norris Center our speaker, Jack Berninger will present a program on Astrobiology. Thanks Jack, I'm looking forward to this.

I would also like to thank those of you who have helped with our events. Since our last months meeting, we have presented programs for Corkscrew Swamp Sanctuary, Island Walk, Super Science Saturday at Rookery Bay, and Lovers Key. On Saturday, the 14th, we will once again be at Art In The Park and on Tuesday February 17th 6-8pm the Veterans Memorial Elementary School Star Party. The day after our meeting we have another program at Corkscrew Swamp Sanctuary. We continue to reach out to those with an interest and are unaware that we exist. We have discussed setting up solar scopes at Corkscrew Swamp Sanctuary to show our closest star, to visitors of the swamp. Attendance there has been around 500-600 people per day. All we need is volunteers and to set a date – or two.

Venus is setting in the west earlier every night and shows as a beautiful crescent at modest powers. Saturn is high enough by midnight for clear viewing. The rings are flattening out, and will appear edge on this summer. Enjoy!

I hope to see you at the Norris Center on the corner of 8th & 8th at 7:00pm.

Good skies – clean glass.

Co-President

Rick Piper

## 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
Feb 14	11:36 PM	
Feb 21		3:30 PM

## Next Meeting –Special Date

**February 19, 2008**

Time 7:00 – 9 pm

At the Norris Center

## Sky Events

Feb 13 – Mercury at greatest western elongation

Feb 16 – 3<sup>rd</sup> Quarter Moon

Feb 25 – New Moon

Mar 4 – 1<sup>st</sup> Quarter Moon

Mar 8 – Saturn at opposition

Mar 11 – Full Moon

Mar 18 – 3<sup>rd</sup> Quarter Moon

Mar 20 – Vernal equinox

## February’s Meeting Changed

This month our meeting date will be changed to February 19<sup>th</sup>. We are sorry for any inconvenience but all of our officers (and some other members) will be attending the Winter Star Party in the Keys on the normal meeting date. Also please use extra caution in going out to the Fack on the 21<sup>st</sup> as few or none of the regular attendees will be there.

## Astronomical Trivia Question of the Month

What planet has the fastest winds ever measured in the Solar System?

- Earth
- Jupiter
- Saturn
- Neptune

Answer on next page.

## Severe Space Weather

by Dr. Tony Phillips

Did you know a solar flare can make your toilet stop working?

That's the surprising conclusion of a NASA-funded study by the National Academy of Sciences entitled *Severe Space Weather Events—Understanding Societal and Economic Impacts*. In the 132-page report, experts detailed what might happen to our modern, high-tech society in the event of a “super solar flare” followed by an extreme geomagnetic storm. They found that almost nothing is immune from space weather—not even the water in your bathroom.

The problem begins with the electric power grid. Ground currents induced during an extreme geomagnetic storm can melt the copper windings of huge, multi-ton transformers at the heart of power distribution systems. Because modern power grids are interconnected, a cascade of failures could sweep across the country, rapidly cutting power to tens or even hundreds of millions of people. According to the report, this loss of electricity would have a ripple effect with “water distribution affected within several hours; perishable foods and medications lost in 12-24 hours; loss of heating/air conditioning, sewage disposal, phone service, fuel re-supply and so on.”

“The concept of interdependency,” the report notes, “is evident in the unavailability of water due to long-term outage of electric power—and the inability to restart an electric generator without water on site.”

It takes a very strong geomagnetic storm to cause problems on this scale—the type of storm that comes along only every century or so. A point of reference is the “Carrington Event” of August-September 1859, named after British amateur astronomer Richard Carrington who witnessed the instigating solar flare with his unaided eye while he was projecting an image of the Sun on a white screen. Geomagnetic storms triggered by the flare electrified telegraph lines, shocking technicians and setting their telegraph papers on fire; Northern Lights spread as far south as Cuba and Hawaii; auroras over the Rocky Mountains were so bright, the glow woke campers who began preparing breakfast because they thought it was morning!

“A contemporary repetition of the Carrington Event would cause ... extensive social and economic disruptions,” the report warns. Widespread failures could include telecommunications, GPS navigation, banking and finance, and transportation. The total economic impact in the first year alone could reach \$2 trillion (some 20 times greater than the costs of Hurricane Katrina).

The report concluded with a call for infrastructure designed to better withstand geomagnetic disturbances and improvements in space weather forecasting. Indeed, no one knows when the

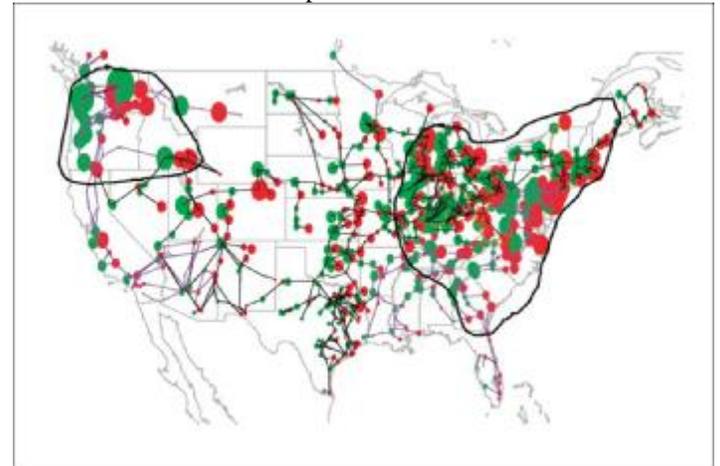
next super solar storm will erupt. It could be 100 years away or just 100 days. It’s something to think about ... the next time you flush.

One of the jobs of the Geostationary Operational Environmental Satellites (GOES) and the Polar-orbiting Operational Environmental Satellites (POES) operated by NOAA is to keep an eye on space weather and provide early warning of solar events that could cause trouble for Earth.

You can keep an eye on space weather yourself at the National Weather Service's Space Weather Prediction Center, [www.swpc.noaa.gov](http://www.swpc.noaa.gov). And for young people, space weather is explained and illustrated simply and clearly at the SciJinks Weather Laboratory,

<http://www.scijinks.gov/weather/howwhy/spaceweather>.

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



*On this power-grid map of the United States, the black-circled areas are regions especially vulnerable to collapse during an extreme geomagnetic storm. Inside those boundaries are more than 130 million people. Credit: National Academy of Sciences report on severe space weather.*

### Answer to Trivia Question

The answer is d. Neptune. During a *Voyager 2* flyby in 1989 winds around The Great Dark Spot were measured blowing as fast as 1,500 mph. The spot was thought to be a hole in Neptune’s cloud deck and apparently had vanished by 1994 when the Hubble Space Telescope tried to locate it.

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