



# Monthly Notices of the Everglades Astronomical Society



Naples, FL  
May 2010

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## President's Message

Hello EAS Members

Your club has again been active showing the general public what we do. We provided Solar viewing at the Naples Conservancy on April 17<sup>th</sup>. We also provided three telescopes on April 24<sup>th</sup> for a Country club event where 200 people had a chance to see Saturn and the moon. This past 27<sup>th</sup> we participated in a school event for 20 students. As you can see your club continues our outreach and education. See you at the meeting.

Clear Skies  
Charlie Paul

## 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   | Sun Set | Moonrise | Moonset |
|--------|---------|----------|---------|
| May 8  | 8:03pm  | 3:43am   | 3.23pm  |
| May 15 | 8:07pm  | 7:47am   | 10:05pm |

## Sky Events

May 6 -- Last Quarter Moon  
May 13 -- New Moon  
May 20 -- First Quarter Moon  
May 27 -- Full Moon

Meteor Shower: Eta Aquarid  
Radiant and direction: Aquarius (E)  
Morning of maximum: May 6  
Hourly rate: 20-40  
Parent body: 1P/Halley

## Next Meeting

May 11, 2010  
Time 7:00 – 9 pm  
At the Norris Center, 755 8th Avenue South, Naples, FL

## Astronomical Trivia Question of the Month

When was M1 the Crab Nebula created?

- a. 26,047 bc.
- b. October 4<sup>th</sup>, 1492 ad
- c. About 7 million years ago
- d. July 4<sup>th</sup>, 1054 ad

*\*Answer on next page.*



## A Rock Hound is Born

It's tough to be a geologist when you can't tell one rock from another. Is that a meteorite or a chunk of lava? A river rock or an impact fragment? Houston, we have a problem!

It's a problem Spirit and Opportunity have been dealing with for the past six years. The two rovers are on a mission to explore the geology of the Red Planet, yet for the longest time they couldn't recognize interesting rocks without help from humans back on Earth.

Fortunately, it is possible to teach old rovers new tricks. All you have to do is change their programming—and that's just what NASA has done.

“During the winter, we uploaded new software to Opportunity,” says Tara Estlin, a rover driver, senior member of JPL’s Artificial Intelligence Group, and the lead developer of AEGIS, short for Autonomous Exploration for Gathering Increased Science. “AEGIS allows the rover to make some decisions on its own.”

Estlin and her team have been working for several years to develop and upload increasingly sophisticated software to the rovers. As a result, the twins have learned to avoid obstacles, identify dust devils, and calculate the distance to reach their arms to a rock.

With the latest upgrade, a rock hound is born.

Now, Opportunity's computer can examine images that the rover takes using its wide-angle navigation camera (NavCam) and pick out rocks with interesting colors or shapes. It can then center its narrower-angle panoramic camera (PanCam) on targets of interest for close-up shots through various color filters. All this happens without human intervention.

The system was recently put to the test; Opportunity performed splendidly.

At the end of a drive on March 4th, the rover settled in for a bit of rock hunting. Opportunity surveyed the landscape and decided that one particular rock, out of more than 50 in the NavCam photo, best met criteria that researchers had set for a target of interest: large and dark.

“It found exactly the target we would want it to find,” Estlin says. “It appears to be one of the rocks tossed outward onto the surface when an impact dug a nearby crater.”

The new software doesn’t make humans obsolete. On the contrary, humans are very much “in the loop,” setting criteria for what’s interesting and evaluating Opportunity’s discoveries. The main effect of the new software is to strengthen the rover-human partnership and boost their combined exploring prowess.

Mindful that Opportunity was only supposed to last about six months after it landed in 2004, Estlin says “it is amazing to see Opportunity performing a brand new autonomous activity six years later.”

What will the rock hounds of Mars be up to six years from now? Stay tuned for future uploads!

Learn more about how the AEGIS software works at <http://scienceandtechnology.jpl.nasa.gov/newsandevents/newsdetails/?NewsID=677> . If you work with middle- or high-school kids, you’ll find a fun way to explore

another kind of robot software—the kind that enables “fuzzy thinking”—at

[http://spaceplace.nasa.gov/en/educators/teachers\\_page\\_2.shtml#fuzzy](http://spaceplace.nasa.gov/en/educators/teachers_page_2.shtml#fuzzy) .



Caption: *Opportunity spots a rock with its NavCam that its AEGIS software says meets all the criteria for further investigation.*

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### Set For Launch

Date: May 14  
Mission: STS-132  
Launch Vehicle: Space Shuttle Atlantis  
Launch Site: Kennedy Space Center - Launch Pad 39A  
Launch Time: 2:20 p.m. EDT

### Local News

Ted Wolfe was featured in the Naples Daily News April 20<sup>th</sup> Check it out online at the link below.

<http://www.naplesnews.com/news/2010/apr/20/looking-gods-keeping-eye-us/>

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### Answer to the trivia question:

Chinese, Arab, Native American Astronomers recorded the explosion on July 4<sup>th</sup>, 1054 ad. The supernova event could be seen in the daylight for 23 days, and was visible at night for 653 days.

|                       |                   |
|-----------------------|-------------------|
| Supernova type:       | Type II, Nebula   |
| Constellation:        | Taurus            |
| Right ascension:      | 5h 34.5m          |
| Declination:          | +22o 01'          |
| Galactic coordinates: | G.184.6-5.8       |
| Discovery date:       | 1054ad            |
| Peak magnitude:       | (V) -6[1]         |
| Distance:             | 6.5 kly (2.0 kpc) |

Credit: [http://en.wikipedia.org/wiki/SN\\_1054](http://en.wikipedia.org/wiki/SN_1054)

# 2010 Membership Dues:

For the bargain price of only **\$20.<sup>00</sup> 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**

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