

# Southwest Florida Astronomical Society

## SWFAS



## The Eyepiece

### November 2013

### A MESSAGE FROM THE PRESIDENT

For those who have not seen the e-mail, this is Carole's last newsletter! She is leaving us at the end of October moving to South Carolina near Charlotte, NC.

Carole, you will be missed and we greatly appreciate all you have done over the years!

With that, we are in need of a newsletter editor. If interested, please contact me!

The November meeting is our annual Telescope Renaissance night (with observing) starting at 7pm on the 7th at the CNCP. There will be no formal meeting that night.

December 5th meeting program is by Scott Flaig, SWFAS member and author of **Cosmology: Faith and Science Reveal *Universal Truth***.

December is also our election of officers. We still also need a program coordinator.

I am waiting to hear from Manny Mon about having the January 2nd meeting at FGCU. Dr. Fauerbach's mother is having her 75th birthday then and Angela Meyer is expecting her second child earlier in December, so they will be otherwise pre-occupied!

#### Upcoming Events for November:

Fri Nov 1st	Astronomy for amateurs	Hickey's Creek	Dusk	Kelly Flaherty
Sat Nov 2nd	Star Party	CRP	Dusk	Bruce Dissette
Sat Nov 2nd	Public Star Party	Jaycee Park, Cape Coral	Dusk	Katie Locklin CCPR (Brian Risley)
Sun Nov 3rd	Partial Solar Eclipse	Jaycee Park, Cape Coral	Dawn	Brian Risley
Fri/Sat Nov 15th-17th	IDASF Event	Fisheating Creek, Palmdale	All Weekend	Diana Umpierre tierracielo@rocketmail.com
Fri/Sat Nov 16th/17th	North Port Cub Scouts	Myakkahatchee Creek Park, North Port	Evening	One of these nights. Tony Heiner
Sat Nov 30th	Star Party (Public Night)	CRP	Dusk	Bruce Dissette

Edison Festival Day of Discovery/Science Fair is back at Harborside downtown on Jan 25th 2014.

Moon: Nov New 3rd, 1st Quarter 9th, Full 17th, Last Quarter 25th  
Dec New 2nd, 1st Quarter 9th, Full 17th, Last Quarter 25th

The planets: Venus is dominating the evening sky after sunset. Mercury will be in the low eastern sky before sunrise, possibly appearing nicely with Comet ISON. Mars is in the morning sky (key to finding ISON) and Jupiter rises a few hours after sunset. Saturn is lost in the sun until late in the year. The 17th is the Leonids (full moon) and Comet ISON and Encke are visible in the morning sky (brightness is the big question).

Date	Event	Location	Time	Obs Info/Contact
Fri Dec 6th	Astronomy for	Hickey's Creek	Dusk	Kelly Flaherty

	amateurs			
Sat Dec 14th	Cub Scouts	Planetarium	Day and evening	Carol Stewart (Not Confirmed)
Sat Dec 28th	Star Party	CRP	Dusk	Bruce Dissette
Sat Jan 4th	Star Party	CRP	Dusk	Bruce Dissette
Sat Jan 25th	Science Fair and Day of Discovery	Harborside/ Centennial Park	Daytime on Saturday	Brian Risley
Fri Jan 31st	Astronomy for amateurs	Hickey's Creek	Dusk	Kelly Flaherty
Sat Feb 1st	Star Party	CRP	Dusk	Bruce Dissette
Sat Feb 1st	Public Star Party	Jaycee Park Cape Coral	Dusk	Katie Locklin CCPR
Sat Feb 7/10?	Star Party	Oasis Middle School Aero Club	7:30-9:00 pm	Carol Stewart
Sat Feb 15th	Public Event	Shell Point Village Star Party	Dusk	Doug Heatherly
Fri Feb 21st	Astronomy for amateurs	Hickey's Creek	Dusk	Kelly Flaherty
Sat Feb 22nd	Burrowing Owl Festival	Rotary Park	Daytime	Brian Risley
Fri Feb 28th	Public Star Party	Rotary Park Cape Coral	Dusk	Katie Locklin CCPR (Brian Risley)
Sat Mar 1st	Star Party	CRP	Dusk	Bruce Dissette
Fri Mar 28	Astronomy for amateurs	Hickey's Creek	Dusk	Kelly Flaherty
Sat Mar 29th	Star Party	CRP	Dusk	Bruce Dissette

## Club Positions

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**Vacant**

## November Meeting

Our next meeting is on Thursday November 7th at 7:00 PM at the Calusa Nature Center Planetarium. Please note the different time – 7 and not 7:30. This night will be our annual Telescope Renaissance Night. There will not be a business meeting. Instead, the public is

invited to bring telescopes that need cleaning or minor repair, or that they are having difficulty using. As a SWFAS member, if you are having trouble with your telescope or feel it needs minor repairs or cleaning, by all means, bring it! If you are comfortable talking to others about their telescopes, we need you too! Some problems that the public have are pretty simple. You could also hand out flyers about the club and astronomy, or bring a telescope to set up outside the planetarium to show people what they can expect to see or that all telescopes aren't refractors.

## **December Meeting**

Our December meeting will be held at the Calusa Nature Center Planetarium on December 5th at 7:30 pm. Our meeting program is by Scott Flaig, SWFAS member and author of **Cosmology: Faith and Science Reveal Universal Truth**. December is also our election of officers.

## **CRP Star Party Schedule**

The remaining Star Parties for 2013 will be November 2, November 30, and December 28. The 2014 CRP Star parties are: Jan 4, Feb 1, Mar 1, Mar 29, May 3, May 31, June 28, July 26, Aug 23, Sept 27, Oct 25, Nov 22, and Dec 20.

## **A Message from the Newsletter Editor**

This will be my last newsletter. I am leaving Southwest Florida to take a new job. Starting November 4, I will be the Planetarium Director at the Museum of York County in Rock Hill, SC. Rock Hill is in the Charlotte, NC area. If you are passing through, be sure to visit!

- Carole Holmberg

## **November 3: Annular/Total Solar Eclipse**

Syzygially speaking, the year's big event comes on November 3rd — and it's a rare "hybrid" solar eclipse. When the Moon goes directly across the Sun's face, our satellite is typically either close enough to us to cover the solar disk completely (yielding a total eclipse) or too far away to cover it all (resulting in an annular eclipse). But on November 3rd both conditions are met. The eclipse begins as annular in the western Atlantic, about 600 miles east of Jacksonville, Florida, where the track first touches Earth's surface at sunrise. But as the shadow moves southeastward, it's also moving closer to the Moon due to Earth's curvature. Soon annularity gives way to a total eclipse, and greatest eclipse occurs about 12:46 UT at a point about 200 miles southwest of Liberia. Some cruise ships intend to be positioned near that spot, which offers 99½ seconds of totality.

The Moon's umbral shadow finally makes landfall in Gabon (68 seconds of totality) before moving east-northeastward through Congo (51 seconds), Democratic Republic of the Congo (37 seconds), Uganda (24 seconds), northern Kenya (16 seconds), southern Ethiopia, and western Somalia, where a lucky few might see 1 second of totality at sunset. During the previous hybrid solar eclipse, in 2005, a stretch of totality was sandwiched between annular views at the beginning and end. This year's edition is especially rare because it will begin with annularity and end with totality.

A wide swath of locations in the easternmost United States, northeastern South America, the Mediterranean, and virtually all of Africa can enjoy a partial solar eclipse — weather permitting, of course. In Southwest Florida, for example, the partial eclipse has already reached its maximum (with 36% of the Sun's area covered) by sunrise and ends 24 minutes later at 7:02 AM. Here are meteorologist Jay Anderson's weather prospects along the path (<http://home.cc.umanitoba.ca/~jander/tot2013/tse13intro.htm>), and here is a table of partial-eclipse circumstances in various cities (<http://eclipse.gsfc.nasa.gov/OH/OHtables/OH2013-Tab04.pdf>) (note: times are UT, so adjust for your time zone).

- <http://www.skyandtelescope.com/observing/highlights/Eclipses-in-2013-191945241.html>

## **Observe the November 3 Partial Eclipse with SWFAS**

Something that totally slipped on my radar! At Dawn on Nov 3rd, we will have a partially eclipsed sun rise! As the campout will be going on at Jaycee Park, I will plan to go out

there to observe it. With the view across the river, we should be able to setup under the trees near the river and have a good view!

Miami is supposed to have about 36%, so we will probably be about 30-33%.

<http://www.skyandtelescope.com/community/skyblog/observingblog/November-3rds-Rare-Solar-Eclipse-227679011.html>

Sun Rise is at 6:39, from what I can pick up, the eclipse in Miami ends at 7:02 am, so we are probably in the same ballpark so we will have it for only 20-30 minutes at most.

- Brian Risley

## **iBooks about Hubble and JWST on the Web**

You can download for free two iBooks about Hubble and the JWST, which have a few interactives embedded at <http://hubblesite.org/ibooks/>

"Soar through the universe with the Hubble Space Telescope, exploring some of its most significant discoveries - from dark energy to colliding galaxies. Descend to Earth, where Hubble's successor, the James Webb Space Telescope, readies for the future of astronomy. Image galleries, video, and interactives bring home the telescopes' science and engineering in this pair of free books available through the iBooks app on the iPad."

## **Neil deGrasse Tyson: Famed Astrophysicist, Total Gravity Buzzkill**

Neil went to Twitter to "fact-check" the movie Gravity. Here is a good list of tweets for those who haven't seen: <http://kotaku.com/neil-degrasse-tyson-famed-astrophysicist-total-gravit-1442224673>

If you haven't yet seen the movie, be warned that there might be some spoilers.

## **Updated Comet ISON Information – Still in One Piece**



*Left: In this beautiful up-close view of Comet C/2012 S1 (ISON), courtesy of the Hubble Space Telescope, we can see that Comet ISON is still very active and very much in one piece! (Image credit: NASA, ESA, and STScI/AURA)*

For a few months now there has been ongoing speculation that comet ISON's demise is imminent. The Comet ISON Observing Campaign (CIOC) has always been clear that the fate of this comet is very much in the balance - though we do lean towards thinking it will survive perihelion - and certainly there always remains the possibility that those who are repeatedly making these claims may eventually be correct. But as of right now, comet ISON continues to perform well and remains in one piece - and that's not just speculation!

On October 9, 2013, the Hubble Space Telescope again pointed itself in the direction of comet ISON and took some spectacular images! We last saw images of comet ISON from Hubble in April of this year (with the returned images stirring a little controversy) while the comet was still over 4 AU (~370-million miles) from Earth. When these latest images were recorded, the comet had more than halved that distance, affording us a much closer view. The picture we show here is a combination of images taken in red and blue filters over a 29-minute period.

Certainly we can see that the comet is in one piece - or was on that day - and remains so from what we see in the most recent images taken by amateur and professional astronomers. The Hubble cameras don't allow us to be able to resolve the nucleus of the comet itself because the nucleus is only maybe 0.6 - 1.2 miles in diameter, and is shrouded in a rather dense and sunlit cloud of dust and ice particles that are being released from the comet. However, there's no

indication in this image that there is any more than one single component at the center of ISON's diffuse coma.

It's worth noting that Hubble is not the only spacecraft that has been observing comet ISON lately. According to our CIOC Observing Calendar ([www.isoncampaign.org/observation-plans](http://www.isoncampaign.org/observation-plans)), the NASA SWIFT spacecraft has been making more observations lately, and the SOHO and STEREO-A satellites are monitoring ISON continuously at this point. In addition, the Chandra x-ray telescope is lined up for observing ISON in the coming weeks (beginning November 3, 2013), and the STEREO-B spacecraft is scheduled to begin a series of daily 180° rolls in order to observe the comet. We anticipate at least a handful of other spacecraft joining in the observing fun as comet ISON makes its way towards perihelion on November 28, 2013! Lots of eyes in the sky, plus lots of eyes on the ground, equals lots of great science to be learned! Stay tuned to this website, as things should get pretty exciting over the next 6 - 8 weeks...

- <http://www.isoncampaign.org/potw-oct21>

## Managing the Deluge of 'Big Data' From Space



**Left:** The center of the Milky Way galaxy imaged by the Spitzer Space Telescope. Image Credit: NASA/Ames/JPL-Caltech

For NASA and its dozens of missions, data pour in every day like rushing rivers. Spacecraft monitor everything from our home planet to faraway galaxies, beaming back images and information to Earth. All those digital records need to be stored, indexed and processed so that spacecraft engineers, scientists and people across the globe can use the data to understand Earth and the universe beyond.

At NASA's Jet Propulsion Laboratory, mission planners and software engineers are coming up with new strategies for managing the ever-increasing flow of such large and complex data streams, referred to in the information technology community as "big data."

How big is big data? For NASA missions, hundreds of terabytes are gathered every hour. Just one terabyte is equivalent to the information printed on 50,000 trees worth of paper.

"Scientists use big data for everything from predicting weather on Earth to monitoring ice caps on Mars to searching for distant galaxies," said Eric De Jong of JPL, principal investigator for NASA's Solar System Visualization project, which converts NASA mission science into visualization products that researchers can use. "We are the keepers of the data, and the users are the astronomers and scientists who need images, mosaics, maps and movies to find patterns and verify theories."

### Building Castles of Data

De Jong explains that there are three aspects to wrangling data from space missions: storage, processing and access. The first task, to store or archive the data, is naturally more challenging for larger volumes of data. The Square Kilometer Array (SKA), a planned array of thousands of telescopes in South Africa and Australia, illustrates this problem. Led by the SKA Organization based in England and scheduled to begin construction in 2016, the array will scan the skies for radio waves coming from the earliest galaxies known.

JPL is involved with archiving the array's torrents of images: 700 terabytes of data are expected to rush in every day. That's equivalent to all the data flowing on the Internet every two days. Rather than build more hardware, engineers are busy developing creative software tools to better store the information, such as "cloud computing" techniques and automated programs for

extracting data.

"We don't need to reinvent the wheel," said Chris Mattmann, a principal investigator for JPL's big-data initiative. "We can modify open-source computer codes to create faster, cheaper solutions." Software that is shared and free for all to build upon is called open source or open code. JPL has been increasingly bringing open-source software into its fold, creating improved data processing tools for space missions. The JPL tools then go back out into the world for others to use for different applications.

### **In Living Color**

Archiving isn't the only challenge in working with big data. De Jong and his team develop new ways to visualize the information. Each image from one of the cameras on NASA's Mars Reconnaissance Orbiter, for example, contains 120 megapixels. His team creates movies from data sets like these, in addition to computer graphics and animations that enable scientists and the public to get up close with the Red Planet.

"Data are not just getting bigger but more complex," said De Jong. "We are constantly working on ways to automate the process of creating visualization products, so that scientists and engineers can easily use the data."

### **Data Served Up to Go**

Another big job in the field of big data is making it easy for users to grab what they need from the data archives.

"If you have a giant bookcase of books, you still have to know how to find the book you're looking for," said Steve Groom, manager of NASA's Infrared Processing and Analysis Center. The center archives data for public use from a number of NASA astronomy missions, including the Spitzer Space Telescope, the Wide-field Infrared Survey Explorer (WISE) and the U.S. portion of the European Space Agency's Planck mission.

Sometimes users want to access all the data at once to look for global patterns, a benefit of big data archives. "Astronomers can also browse all the 'books' in our library simultaneously, something that can't be done on their own computers," said Groom.

"No human can sort through that much data," said Andrea Donnellan of JPL, who is charged with a similarly mountainous task for the NASA-funded QuakeSim project, which brings together massive data sets -- space- and Earth-based -- to study earthquake processes.

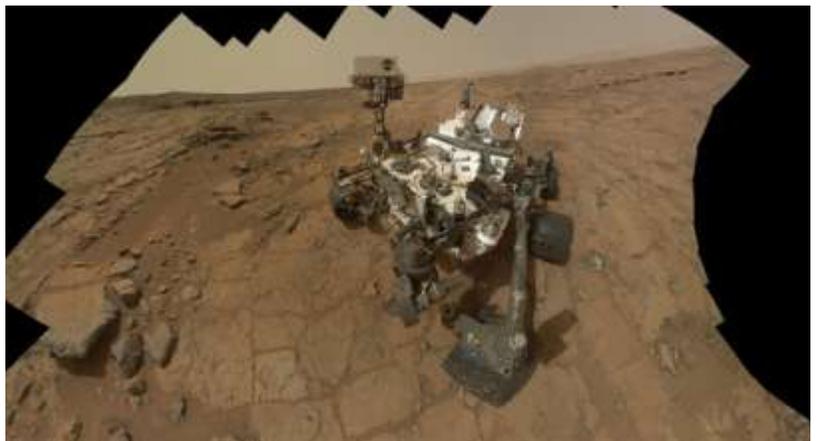
QuakeSim's images and plots allow researchers to understand how earthquakes occur and develop long-term preventative strategies. The data sets include GPS data for hundreds of locations in California, where thousands of measurements are taken, resulting in millions of data points. Donnellan and her team develop software tools to help users sift through the flood of data.

Ultimately, the tide of big data will continue to swell, and NASA will develop new strategies to manage the flow.

- *The full version of this story with accompanying images is at [www.jpl.nasa.gov/news/news.php?release=2013-299&cid=release\\_2013-299](http://www.jpl.nasa.gov/news/news.php?release=2013-299&cid=release_2013-299)*

## **NASA Rover Confirms Mars Origin of Some Meteorites**

*Caption: This self-portrait of NASA's Mars rover Curiosity combines 66 exposures taken by the rover's Mars Hand Lens Imager (MAHLI) during the 177th Martian day, or sol, of Curiosity's work on*



*Mars (Feb. 3, 2013). Image credit: NASA/JPL-Caltech/MSSS*

Examination of the Martian atmosphere by NASA's Curiosity Mars rover confirms that some meteorites that have dropped to Earth really are from the Red Planet.

A key new measurement of the inert gas argon in Mars' atmosphere by Curiosity's laboratory provides the most definitive evidence yet of the origin of Mars meteorites while at the same time providing a way to rule out Martian origin of other meteorites.

The new measurement is a high-precision count of two forms of argon - argon-36 and argon-38 - accomplished by the Sample Analysis at Mars (SAM) instrument inside the rover. These lighter and heavier forms, or isotopes, of argon exist naturally throughout the solar system. On Mars the ratio of light to heavy argon is skewed because much of that planet's original atmosphere was lost to space. The lighter form of argon was taken away more readily because it rises to the top of the atmosphere more easily and requires less energy to escape. That left the Martian atmosphere relatively enriched in the heavier isotope, argon-38.

Years of past analyses by Earth-bound scientists of gas bubbles trapped inside Martian meteorites had already narrowed the Martian argon ratio to between 3.6 and 4.5 (that is 3.6 to 4.5 atoms of argon-36 to every one of argon-38). The new SAM direct measurement on Mars now pins down the correct argon ratio at 4.2.

"We really nailed it," said Sushil Atreya of the University of Michigan. "This direct reading from Mars settles the case with all Martian meteorites."

One reason scientists have been so interested in the argon ratio in Martian meteorites is that it was, before Curiosity, the best measure of how much atmosphere Mars has lost since the planet's wetter, warmer days billions of years ago. Figuring out the planet's atmospheric loss would enable scientists to better understand how Mars transformed from a once water-rich planet, more like our own, into today's drier, colder and less-hospitable world.

Had Mars held onto all of its atmosphere and its original argon, its ratio of the gas would be the same as that of the sun and Jupiter. Those bodies have so much gravity that isotopes can't preferentially escape, so their argon ratio, which is 5.5, represents that of the primordial solar system.

While argon makes up only a tiny fraction of the gas lost to space from Mars, it is special because it's a noble gas. That means the gas is inert, not reacting with other elements or compounds, and therefore a more straightforward tracer of the history of the Martian atmosphere.

"Other isotopes measured by SAM on Curiosity also support the loss of atmosphere, but none so directly as argon," said Atreya. "Argon is the clearest signature of atmospheric loss because it's chemically inert and does not interact or exchange with the Martian surface or the interior. This was a key measurement that we wanted to carry out on SAM."

- *The full version of this story with accompanying images is at:*

*[http://www.jpl.nasa.gov/news/news.php?release=2013-298&cid=release\\_2013-298](http://www.jpl.nasa.gov/news/news.php?release=2013-298&cid=release_2013-298)*

## **Rings, Dark Side of Saturn Glow in New Cassini Image**



The gauzy rings of Saturn and the dark side of the planet glow in newly released infrared images obtained by NASA's Cassini spacecraft.

- The Cassini spacecraft scanned across Saturn and its rings when the sun was behind the planet and faint rings were easier to detect.

- This latest infrared image shows a strip about 340,000 miles across that includes the planet and its rings out to Saturn's second most distant ring.

"Looking at the Saturn system when it is backlit by the sun gives scientists a kind of inside-out view of Saturn that we don't normally see," said Matt Hedman, a scientist at the University of Idaho. "The parts of Saturn's rings that are bright when you look at them from backyard telescopes on Earth are dark, and other parts that are typically dark glow brightly in this view."

It can be difficult for scientists to get a good look at the faint outer F, E and G rings, or the tenuous inner ring known as the D ring when light is shining directly on them. That's because they are almost transparent and composed of small particles that do not reflect light well. What's different about this viewing geometry?

- When these small particles are lit from behind, they show up like fog in the headlights of an oncoming vehicle.
- The C ring also appears relatively bright here; not because it is made of dust, but because the material in it, mostly dirty water ice, is translucent. In fact, in the 18th and 19th centuries, it was known as the "crepe ring" because of its supposed similarity to crepe paper.
- The wide, middle ring known as the B ring, one of the easiest to see from Earth through telescopes because it is densely packed with chunks of bright water ice, looks dark in these images because it is so thick that it blocks almost all of the sunlight shining behind it.

Infrared images also show thermal, or heat, radiation. While a visible-light image from this vantage point would simply show the face of the planet as dimly lit by sunlight reflected off the rings, Saturn glows brightly in this view because of heat from Saturn's interior.

- Structures in the wispy E ring -- made from the icy breath of the moon Enceladus -- reveal themselves in this exaggerated view.

"We're busy working on analyzing the infrared data from this special view of the Saturn system," said Phil Nicholson, a visual and infrared mapping spectrometer team member. "The infrared data should tell us more about the sizes of the particles which make up the D, E, F and G rings, and how these sizes vary with location in the rings, as well as providing clues as to their chemical composition."

Launched in 1997, Cassini has been exploring the Saturn system for more than nine years with a suite of instruments that also includes visible-light cameras, ultraviolet and infrared spectrometers, as well as magnetic field and charged particle sensors. Scientists working with the visible light cameras are still busy putting together and analyzing their mosaic of the Saturn system.

"Cassini's long-term residency at the ringed planet means we've been able to observe change over nearly half a Saturn-year (one Saturn-year is equal to almost 30 Earth-years) with a host of different tools," said Linda Spilker, Cassini project scientist. "Earth looks different from season to season and Saturn does too. We can't wait to see how those seasonal changes affect the dance of icy particles as we continue to observe Saturn's rings with Cassini."

- *The full version of this story with accompanying images is at:*

[www.jpl.nasa.gov/news/news.php?release=2013-297&cid=release\\_2013-297](http://www.jpl.nasa.gov/news/news.php?release=2013-297&cid=release_2013-297)

## Spooky Halloween Observing, 2013 edition



**Left:** *The ghoul on the moon*

It's time to get out the Milky Way and Mars candy bars, the Moon Pies and the Starburst chews. It's Halloween! The moon — almost new — will hide during the trick or treat hours this year. It's a challenging object to see, rising before dawn, and setting before most young ghosts and goblins are out and about after sunset. Try to spot it in the afternoon when younger trick or treaters are out!

The very slender crescent moon sets in the west two hours before sunset. Better yet, invite your neighbors over during the next two weekends to see spooky and historic features on the moon after sunset. Your astronomy club will likely have a moon viewing event the week after Halloween. I know mine does, on every first quarter moon Saturday night. Venus will be the best object to show (from the city) after sunset this year. You don't even need a telescope to show the bright planet.

Next year Halloween falls on Friday night – a first quarter moon night!

Here are my favorite spooky named objects. Some are tricks and all are treats! The galaxies and nebulae will require a dark sky, but the lunar features and double stars are city observing targets. Have fun observing and let me know your favorites and I'll add them to the list next year!

**Mirach's Ghost** NGC 404 in Andromeda, magnitude 11, size 4.3' x 3.9' This galaxy is hard to see. Move Mirach (Beta Andromedae) out of the way for a ghostly view.

**The Phantom Streak** NGC 6741 in Aquila, magnitude 10.8, size 6". A fast evolving planetary nebula.



**The Ghost of the Moon Nebula** NGC 6781 in Aquila, magnitude 11.8, size 1.8'. A nice round ghostly planetary nebula.

**The Spider Galaxy** NGC 5829 (Arp 42) in Bootes, magnitude 13.8, 1.7' x 1.5'. Pretty face-on spiral galaxy in BOOTES. Scary!

**The Skull Nebula** NGC 246 in Cetus, magnitude 8, size 3.8'. William Herschel discovered this large planetary nebula. It's easy to find, and a real treat! (*pictured left*)

**The Witch Head Nebula** IC 2118 in Eridanis, magnitude 13, size 160' by 80'.

(About the same size as the Andromeda Galaxy which is 189' by 61'). This very large and very faint reflection nebula is associated with the star Rigel but is almost 3 degrees west of the star. The blue color of the nebula is caused not only by blue color of Rigel, but also because the dust grains reflect blue light more efficiently than red. Earth's daytime sky appears blue for the same reason. (*pictured right*)



**The Ghost Ring Nebula** IC 5148 in Grus, magnitude 13, size 2'. A pretty little planetary nebula in the neck of Grus the crane. If you can see Fomalhaut in Piscis Austrinus, look a little more south to find Grus.

**The Little Ghost Nebula** NGC 6369 in Ophiuchus, magnitude 12.9, size 30". A pretty planetary nebula, also discovered by William Herschel. Look for the mag 15.9 central star in this planetary nebula.

**The Red Spider Nebula** NGC 6537 in Sagittarius, magnitude 12.5, size 9". A bipolar planetary nebula with a hot white dwarf star.

**Phobos and Deimos** (Fear and Terror) – the moons of Mars. It's possible to see these small moons, but easier to see when Mars is closer than it is now. Try closer to opposition. There's nothing to fear!

**Hell**, Rukl's Atlas of the Moon, chart 64. 33 km crater near Deslandres, which is an amazing and very large and complex crater. The small crater Hell (named for 18th century Hungarian astronomer Maximilian Hell, who observed the 1769 Transit of Venus) is also near (north of) Tycho, one of the most prominent craters on the moon. Its bright rays will be easily visible 12 days after Halloween 2013 near the full moon phase. You'll need a telescope to see Hell.

Any lunar map will help you find your way to all of these lunar features, and they are all visible this year on Halloween. Here is my favorite lunar website ([www.shallowsky.com/moon/hitchhiker.html](http://www.shallowsky.com/moon/hitchhiker.html)). You can get the general location of each Rukl lunar chart listed below, and then use your favorite moon map to find these spooky treats and scary sights.

**Lacus Doloris** (Lake of Suffering), Rukl chart 23, 110 km mare. This Mare is just over the Montes Haemus from Mare Serinitatis. If you've spotted the bright white (tiny) crater Linne, you're close to the Lake of Suffering. This small lake is visible South of bright Linne ten days after Halloween 2013.

**Lacus Mortis** (Lake of Death), Rukl chart 14, 150 km diameter flooded crater. You'll find it North of the great crater Posidonius, and north of easy-to-spot mare Crisium (which is not visible on Halloween 2012). Through your telescope, find some great rilles (long, narrow depressions in the lunar surface that resemble channels) on the western side of Lacus Mortis (which is visible the week after Halloween 2013).

**Lacus Timoris** (Lake of Fear) and Palus Epidemiarum (Marsh of Epidemics), Rukl chart 63. In the southwestern section of the moon. This section of the moon deserves a careful look through the telescopes. You'll also find lunar domes and rilles in this region of the moon. Rima Hesiodus bisects the Eastern part of the Marsh of Epidemics. Lacus Timoris is an elongated region surrounded by mountains. Best seen near full moon, 14 days after Halloween 2013.

**Palus Putrendis** (Marsh of Rot), Rukl chart 22, 180 km small plain on the prime meridian, near Hadley Rille and the Apollo 15 site. How can you not like the name Palus Putrendis? It's easy to find between the crater Archimedes and Montes Appeninus. This is Hadley Rille/Apollo 15 landing site territory. Well worth a look! Look after first quarter moon 8 days after Halloween 2013.

**Boo Epsilon** (36) (Bootes), double star, mag 2.5 and 4.9, yellow/orange and blue/green double

**Boo Mu** (51) Bootes, triple star, mag 4.3 and 7 and 7.6 triple, yellow primary, yellow/orange pair

**Boo Xi** (37) Bootes, quadruple star, mag 4.7 and 7.0, with a 9.6 and 12.6 companion, yellow and reddish/orange

Happy Halloween from PK 164+31.1 (Jones 1)

by Janet Houston Jones, <http://jane.whiteoaks.com/2009/10/30/spooky-halloween-observing/>

## **Invitation to FTA & IDASF Stargazing Event/ Light Pollution talk at Fisheating Creek - Nov 15 to 17**

Hello. My name is Diana Umpierre and I am contacting on behalf of International Dark-Sky Association South Florida (IDASF), where I serve as an officer.

During November 15 to 17, the Florida Trail Association (FTA) will be holding their annual southern conference at the campgrounds at Fisheating Creek Wildlife Management Area/ Outpost. As part of that event, FTA has added a two-night stargazing component to their program (Fri & Sat nights). In addition, IDASF will be doing an educational talk about light pollution and dark-sky preservation in South Florida to help spread awareness & motivate advocacy on these important environmental issues.

We would like to extend a warm invitation to your astronomy club members and hopefully also get your support during this event. We realize that weekend the Full Moon will bring some natural light to nighttime environment. Despite that, FTA members are looking forward to gazing at the moon via telescopes, as well as any other starry wonders that may be visible. It will also be a great opportunity to introduce FTA members to the joys of amateur astronomy and perhaps even motivate some of them to join local amateur astronomy clubs like yours. We also look at this as a great opportunity for the local amateur astronomy community to learn (and get involved) with what IDA South FL is doing.

Below are quick details about this event. If you are able to attend, let me know. I can be reached at (954) 829-7632, or via email [TierraCielo@rocketmail.com](mailto:TierraCielo@rocketmail.com). We look forward to meeting you during the Beaver Moon weekend. ;)

- When: Event will start late pm/ early eve of Fri, Nov 15 and end by noon on Sun, Nov 17  
- Location: Fisheating Creek Wildlife Management Area (Outpost campgrounds) in Glades, County (by Palmdale, FL)

- What: The event will include a series of outdoor/ environmental-type activities such as hiking, storytelling, canoeing/ kayaking, music, talks and in the evening an opportunity to star (moon) gaze.

- Aside from FTA led activities, Fisheating Creek offers great opportunities for bird watching, nature photography, fishing/ hunting, etc.

- The astronomy component is will be mainly at night, any time after sunset and till whatever hour seems reasonable. The campground quiet time begins at 11 pm, but it is ok to keep telescopes further into the night as long as noise is kept low. Astronomers are also welcomed to setup telescopes during the day for solar viewing. An area near Deer Clan group campsite is being set aside for telescope setup. If preferred, astronomers can also setup by their campsite. We will be handing out thick red cellophane to all attendees to encourage campers to cover their bright LED flashlights.

- Registration & Info on Where to Stay/ Eat:

> Registration for FTA event \$10/ person (children under 12 are free)

> Catered breakfast (\$8) & dinner (\$14) – catered meals must be ordered by Oct 25

> For lunch, there will be a grill selling hot dogs, etc.. (plus there is a camp store)

> FTA group (tent) camping by Deer Clan group site: \$8/ tent/ night

- Other overnight camping choices:

- Individual RV/ tent camping – call Outpost staff to reserve

<http://www.fisheatingcreekoutpost.com/showpage.asp?page=campground>

<http://www.fisheatingcreekoutpost.com/showpage.asp?page=rates>

- If not camping overnight, the Output charges a small day use fee (~ \$2/person), with parking of regular vehicles included.

- Diana Umpierre, IDA South Florida, (954) 829-7632 – cell,

[www.facebook.com/IDASouthFlorida](http://www.facebook.com/IDASouthFlorida), [www.idasouthflorida.org](http://www.idasouthflorida.org), [www.darksky.org](http://www.darksky.org)



The poster for the Fisheating Creek Outpost event features a blue background. At the top left is a photograph of a river flowing through a wooded area. To the right of the photo, the text reads "Fisheating Creek Outpost" in white. Below the photo, the event dates "NOV 15 – 17" are displayed in large blue letters, followed by "BACK TO THE CREEK 2.0" in smaller blue letters. Underneath, it says "FTA South Regional Conference" in white. A red diamond-shaped icon with a white question mark is centered below the text. At the bottom of the poster, contact information is provided: "7555 N. US Hwy 27, Palmdale, FL" and "www.fisheatingcreekoutpost.com 863-675-5999". On the right side of the poster, a list of activities is shown in white text: "Hiking, Canoeing, Fishing, Birding", "Activity Leader Training", "Explore Fort Center", and "Wildlife Talks, Storytelling, Stargazing".



Due to the recent government shutdown, there is no Space Place article this month. The NASA Space Place team apologizes for the inconvenience.

# Night Sky Network

Astronomy Clubs bringing the wonders of the universe to the public



**Amateur Astronomers:** *We're glad to be back online. Thanks for your patience during the shut-down. You are the reason the Night Sky Network is so well respected. Thank you for all of your efforts to educate and amaze the public and yourselves with the wonders of the night sky. Keep up your wonderful work!*

## **Have you opened your updated ToolKit?**

ToolKit updates for PlanetQuest and Shadows and Silhouettes have shipped and should have arrived. In it, you'll find new Observing Cards, updated handouts, starmaps, and so much more. You can read all about the updates and get master copies here:  
[https://nightsky.jpl.nasa.gov/news-display.cfm?News\\_ID=600](https://nightsky.jpl.nasa.gov/news-display.cfm?News_ID=600)

## **Transcript Available: Telecon with the PANOPTES team**

The **PANOPTES** team joined Night Sky Network members on September 24th, 2013 for a fascinating talk with Dr. Olivier Guyon, head of the Panoptic Astronomical Networked Optical observatory for Transiting Exoplanets Survey), along with his two colleagues Josh Walawender and Mike Butterfield.

The team members outlined their project from its inception to its current status, and how they hope for PANOPTES to evolve. Eventually they wish to produce an affordable robotic observatory that can be used to make measurements sensitive enough to detect exoplanets! By doing so they hope to bring the search for exoplanets to both amateurs as well as professional astronomers.

Suffice it to say our member clubs were very excited to hear about this opportunity! To assist the PANOPTES team, go to <http://projectpanoptes.org> or write them at [info@projectpanoptes.org](mailto:info@projectpanoptes.org).

Check out our dedicated PANOPTES telecon page for the slides, transcript, and audio of the presentation: [https://nightsky.jpl.nasa.gov/download-view.cfm?Doc\\_ID=528](https://nightsky.jpl.nasa.gov/download-view.cfm?Doc_ID=528)

## **Astronomical Society of the Pacific's 125th Anniversary Calendar now available**

This limited edition commemorative wall calendar is being published in honor of the ASP's 125th anniversary in 2014. The calendar features stunning astrophotography submitted by Night Sky Network community members and other sources. In addition to "what to look up for" each month, the calendar will also include key dates, milestones, and "firsts" from the ASP's extensive and diverse history. This calendar is being sold to help raise funds for ASP programs and services, and will make a perfect holiday or year-end thank you gift for friends, family members, colleagues and clients! See the ASP's website for pricing and ordering information.

## **The Astronomical Society of the Pacific Invites Nominations for their 2014 Awards**

The Astronomical Society of the Pacific is accepting nominations for the organization's national annual awards which recognize special achievements in astronomy research, technology, education, and public outreach. Nominations are welcome in seven categories, online or in writing until January 1, 2014. Honorees receive a cash award and engraved plaque, as well as travel and lodging to accept the award at a banquet which takes place as part of the ASP's Annual Meeting next summer. Go to the official awards page to view the categories and more information on how to nominate deserving folks!

## **Save the Date: LADEE Telecon with Brian Day on November 12**

Night Sky Network members are invited to join us for a telecon with Brian Day from NASA's LADEE mission to the Moon this November 12 at 9:00 PM ET. Brian will give members an overview of the LADEE mission, what the team hopes to discover, and the latest results from its mission to study the Moon's wispy atmosphere. Slides and call-in information will be available to members shortly before the telecon; you check the telecon resource page for more updates. You

can also participate in the LADEE mission while you wait.

### **Featured Activity:**

Kepler Mission: The Search for Earth-Sized Planets (<http://nightsky.jpl.nasa.gov/sampler.cfm>)  
This PowerPoint presentation helps to explain the techniques used to find extrasolar planets and why we are looking for Earth-sized planets. It comes with a suggested script in .PDF format for use in presentations at your club or classroom.

### **Spooky Sidewalk Astronomy**

Halloween is coming, and with it hordes of little ghosts and goblins shouting, "Trick or Treat!" Usually people will hand out candy as a treat, but what if you were to hand out a beautiful image of the Moon or stars in your eyepiece instead? (*Of course, you can also hand out candy in addition to free viewings if you want to become the favorite house on the block.*)

Sidewalk astronomy is one of the more random and most rewarding types of outreach an observational astronomer can do. Even in the bright lights of the city the Moon and major visible planets are always visible and are a perfect treat to hand out to visitors of all ages. Plus, you get to dress up as well; what a perfect excuse to hang out with the trick or treaters as an adult!

So, what to do? It's easy! Set up your usual observing equipment outside your own house if you like; dress in clothes (or better yet, costumes!) that are warm and comfortable. Have a couple of Jack O'Lanterns and other spooky decorations to announce that you are welcoming trick-or-treaters of all ages. The Moon will not be visible for most of the prime trick or treating hours, sadly, but other sights such as Venus, the Summer Triangle, the clusters of the Milky Way, and sturdy favorite globular cluster M13 will be in a good position to view (But watch out, Venus will set quickly after twilight!).

Remember: Stay safe, stay warm, don't eat too much candy, and most important-have a happy Halloween!

### **Night Sky Network Members:**



*You are the backbone of eyes-to-the-skies astronomy outreach. NASA, ASP, and our partners are proud to support your amazing outreach events with a variety of free materials: Quarterly prizes for logging your events, outreach ToolKits, handouts from NASA partners, and publicity for events you post on the Night Sky Network Calendar.*

You can reach both of us any time at [nightskyinfo@astrosociety.org](mailto:nightskyinfo@astrosociety.org)

Wishing you clear skies!

Vivian White and David Prosper, Night Sky Network Team

[nightskyinfo@astrosociety.org](mailto:nightskyinfo@astrosociety.org)

*The NASA Night Sky Network is a nationwide coalition of over 425 amateur astronomy clubs. The NASA Night Sky Network is managed by The Astronomical Society of the Pacific.*

### **SWFAS Minutes**

Minutes of the Southwest Florida Astronomical Society – October 3, 2013

The regular monthly meeting of the Southwest Florida Astronomical Society was called to order at 7:35pm by President Brian Risley in the Calusa Nature Center Planetarium.

Several visitors and new members were introduced.

Upcoming events listed on the printed agenda were discussed. Due to recent heavy rains the viewing site at Caloosahatchee Regional Park is closed so the Oct 5 star party may be held at Riverside Retreat farther along State Road 78 in Hendry County.

Dan Fitzgerald is not going to be able to continue as webmaster. Bill Francis and Gary McFall volunteered to take over the position.

Carol Stewart announced she will have samples of 2014 calendars available at the November meeting for those who may wish to order some. She is mentoring a Mariner High School student.

The Coconut Point Hyatt Regency would like to set up an observing event for guests. Contact Brian Risley if interested in helping with this.

Newsletter editor Carole Holmberg reported that most members have e-mail, so only a few newsletters have to be sent by US Mail.

Printed minutes of the September 5 meeting were made available. Stephen Berni moved to accept them, seconded by Gary McFall. The motion passed on a voice vote.

Treasurer Tony Heiner reported a balance of \$2429.90. The annual insurance premium will be paid during October. Brian Shultis moved to accept the report, seconded by Lee Kraemer. The motion passed on a voice vote.

Viewing coordinator Russ Weiland reported that the Fakahatchee Strand event for the weekend of Oct 5 is unlikely due to expected weather but better weather is likely later in the fall.

Librarian Maria Berni reported she is working on organizing the books.

Brian Risley reported purchasing a 2 inch diagonal and a solar filter that can be used with the CPC or the Celestar.

A program coordinator is needed. Brian is working on having our January meeting at FGCU. November 7th meeting will be Telescope Renaissance Night at 7pm, with no formal meeting. The business meeting was adjourned.

Scott Flaig, formerly a seasonal member but now here full time, gave a general overview of how he wrote his book "Cosmology – Faith and Science Reveal Universal Truth." The December program will be a full presentation about the book.

Tony Heiner presented a program of astrophotographs and videos he has produced.

On display in the lobby was a Coulter Odyssey 13 inch Dobsonian reflector on a rolling platform with a Telrad finder. Plans are for it to go to a new astronomy club starting at Ave Maria University.

- submitted by Don Palmer, secretary

Southwest Florida Astronomical Society, Inc.

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[www.theeyepiece.org](http://www.theeyepiece.org)