

# Southwest Florida Astronomical Society

## SWFAS



## The Eyepiece June 2011

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### A MESSAGE FROM THE PRESIDENT

I hope everyone had a good Memorial Day weekend. We are coming into our summer months where there is not a lot of activity due to the late sunset time, weather and bugs!

We do have another star party at CRP set for the 4th. Our meeting on June 2nd is a simple affair. I will be presenting what equipment the club actually has that can be checked out or used for presentations. I will also be doing a training session on the CPC-800 computerized Celestron 8 so that those who are interested in working with this scope should attend. It is not hard to work with this scope (other than weight to put it on the mount) and it performs wonderfully. We now have solar filters available for this telescope. If there is anyone you know that is interested in astronomy and would be interested in borrowing a telescope, the Loan-A-Scope telescopes are available for you to take and let them use for a month. Carole will also show us the latest Shuttle presentation in the theatre.

At our July 7th meeting at 7:30 pm at the Planetarium the author of ***String Theory for Dummies***, Andrew Zimmerman Jones, will present ***String Theory for Everyone***. From the book's website: "Andrew Zimmerman Jones received his physics degree and graduated with honors from Wabash College, where he earned the Harold Q. Fuller Prize in Physics. He is the Physics Guide for the New York Times' About.com Web site." Please make sure you can attend this meeting.

There are several summer camp programs that are interested in having presentations and I am planning on doing a simple presentation at Chick-Fil-A in North Fort Myers/Cape Coral on July 5th. If you are interested in helping with any of these requests, please let me know.

We are pruning the mailing lists, so if you have not renewed, this will be your last newsletter. Dues are \$20 for the year, and can be paid at our monthly meetings, or mailed to our post office box i.e. Southwest Florida Astronomical Society, Inc., PO Box 100127, Cape Coral, Florida 33910. Your continued support is greatly appreciated. If you have a question as to whether you have paid your 2011 dues already as some members have, please contact me or our Treasurer Stewart Rorer.

## **President's Message Continues...**

If anyone wants a SWFAS shirt/hat, they can be ordered at any time. The cost for the shirt is \$24 and the hat is \$6. Payment should be made by check payable to SWFAS and given to our Treasurer, Stewart Rorer.

The sky this month:

Saturn is high in the south at sunset and sets well after midnight. It is well placed for observation.

The full moon is on the 15th and there is a Lunar Eclipse that we won't be able to see.

## **June Meeting**

Our monthly meeting is on June 2<sup>nd</sup> at 7:30pm at the Calusa Nature Center Planetarium. Brian Risley will be showing us the equipment available to members and will train members on the use of club telescopes. Those not interested in training can watch the new planetarium show "The Space Shuttle: On the Wings of a Dream" instead.

## **Comet Elenin: Preview of a Coming Attraction**

You may have heard the news: Comet Elenin is coming to the inner-solar system this fall. Comet Elenin (also known as C/2010 X1), was first detected on Dec. 10, 2010 by Leonid Elenin, an observer in Lyubertsy, Russia, who made the discovery "remotely" using the ISON-NM observatory near Mayhill, New Mexico. At the time of the discovery, the comet was about 401 million miles from Earth. Over the past four-and-a-half months, the comet has – as comets do – closed the distance to Earth's vicinity as it makes its way closer to perihelion (its closest point to the sun). As of May 4, Elenin's distance is about 170 million miles.

"That is what happens with these long-period comets that come in from way outside our planetary system," said Don Yeomans of NASA's Near-Earth Object Program Office. "They make these long, majestic, speedy arcs through our solar system, and sometimes they put on a great show. But not Elenin. Right now that comet looks kind of wimpy."

How does a NASA scientist define cometary wimpiness?

"We're talking about how a comet looks as it safely flies past us," said Yeomans. "Some cometary visitors arriving from beyond the planetary region – like Hale-Bopp in 1997 - have really lit up the night sky where you can see them easily with the naked eye as they safely transit the inner-solar system. But Elenin is trending toward the other end of the spectrum. You'll probably need a good pair of binoculars, clear skies, and a dark, secluded location to see it even on its brightest night."

Comet Elenin should be at its brightest shortly before the time of its closest approach to Earth on Oct. 16 of this year. At its closest point, it will be 22 million miles from us. Can this icy interloper influence us from where it is, or where it will be in the future? What about this celestial object inspiring some shifting of the tides or even tectonic plates here on Earth? There have been some incorrect Internet speculations that external forces could cause comet Elenin to come closer.

"Comet Elenin will not encounter any dark bodies that could perturb its orbit, nor will it influence us in any way here on Earth," said Yeomans. "It will get no closer to Earth than 22 million miles. Comet Elenin will not only be far away, it is also on the small side for comets. And comets are not the most densely-packed objects out there. They usually have the density of something akin to loosely packed icy dirt. It will have an immeasurably miniscule influence on our planet. By comparison, my subcompact automobile exerts a greater influence on the ocean's tides than comet Elenin ever will."

Yeomans did have one final thought on comet Elenin.

"This comet may not put on a great show. Just as certainly, it will not cause any disruptions here on Earth. But there is a cause to marvel," said Yeomans. "This intrepid little traveler will offer astronomers a chance to study a relatively young comet that came here from well beyond our solar system's planetary region. After a short while, it will be headed back out again, and we will not see or hear from Elenin for thousands of years. That's pretty cool."

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

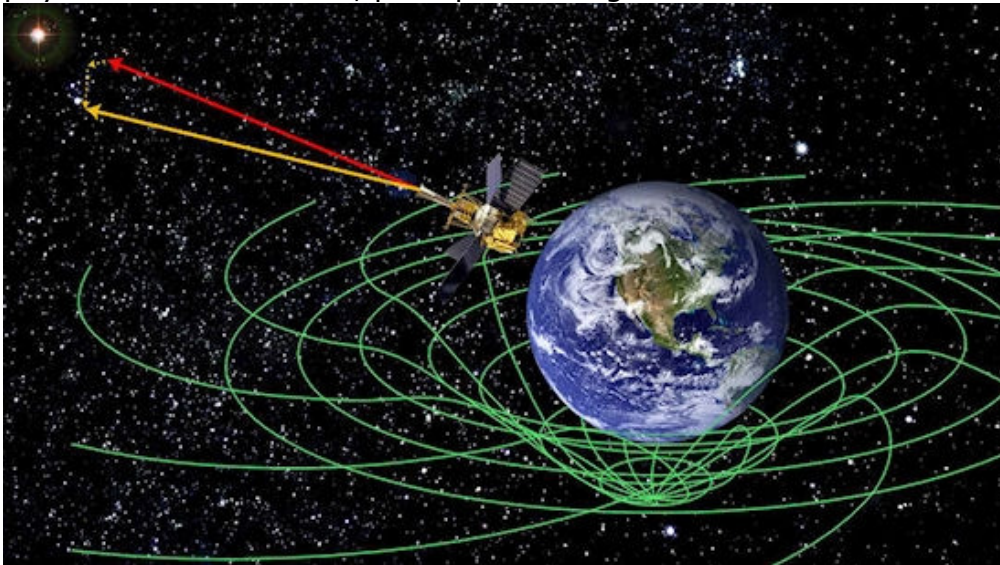
[http://www.jpl.nasa.gov/news/news.cfm?release=2011-135&cid=release\\_2011-135](http://www.jpl.nasa.gov/news/news.cfm?release=2011-135&cid=release_2011-135)

## **NASA Announces Results of Epic Space-Time Experiment**

Einstein was right again. There *is* a space-time vortex around Earth, and its shape precisely matches the predictions of Einstein's theory of gravity.

Researchers confirmed these points when they announced the long-awaited results of Gravity Probe B (GP-B).

"The space-time around Earth appears to be distorted just as general relativity predicts," says physicist Francis Everitt, principal investigator.



**Left:** *An artist's concept of GP-B measuring the curved spacetime around Earth.*

"This is an epic result," adds Clifford Will. An expert in Einstein's theories, Will chairs an independent panel of the National Research Council set up by NASA to monitor and review the results of Gravity Probe B. "One day," he predicts, "this will be written up in textbooks as one of the classic

experiments in the history of physics."

Time and space, according to Einstein's theories of relativity, are woven together, forming a four-dimensional fabric called "space-time." The mass of Earth dimples this fabric, much like a heavy person sitting in the middle of a trampoline. Gravity, says Einstein, is simply the motion of objects following the curvaceous lines of the dimple.

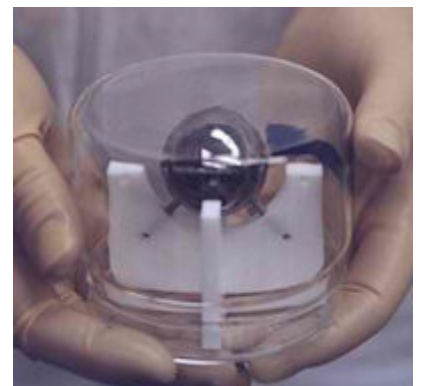
If Earth were stationary, that would be the end of the story. But Earth is not stationary. Our planet spins, and the spin should twist the dimple, slightly, pulling it around into a 4-dimensional swirl. This is what GP-B went to space in 2004 to check.

The idea behind the experiment is simple:

Put a spinning gyroscope into orbit around the Earth, with the spin axis pointed toward some distant star as a fixed reference point. Free from external forces, the gyroscope's axis should continue pointing at the star--forever. But if space is twisted, the direction of the gyroscope's axis should drift over time. By noting this change in direction relative to the star, the twists of space-time could be measured.

In practice, the experiment is tremendously difficult.

**Right:** *One of the super-spherical gyroscopes of Gravity Probe B.*



The four gyroscopes in GP-B are the most perfect spheres ever made by humans. These ping pong-sized balls of fused quartz and silicon are 1.5 inches across and never vary from a perfect sphere by more than 40 atomic layers. If the gyroscopes weren't so spherical, their spin axes would wobble even without the effects of relativity.

According to calculations, the twisted space-time around Earth should cause the axes of the gyros to drift merely 0.041 arcseconds over a year. An arcsecond is 1/3600th of a degree. To measure this angle reasonably well, GP-B needed a fantastic precision of 0.0005 arcseconds. It's like measuring the thickness of a sheet of paper held edge-on 100 miles away.

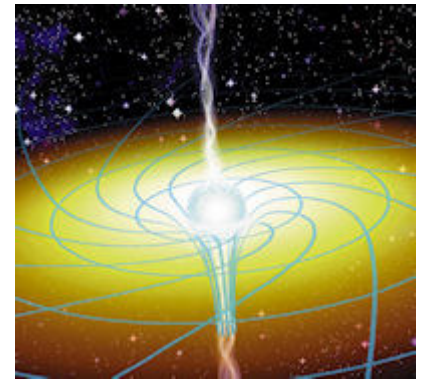
"GP-B researchers had to invent whole new technologies to make this possible," notes Will. They developed a "drag free" satellite that could brush against the outer layers of Earth's atmosphere without disturbing the gyros. They figured out how to keep Earth's magnetic field from penetrating the spacecraft. And they created a device to measure the spin of a gyro-*without touching the gyro*.

Pulling off the experiment was an exceptional challenge. But after a year of data-taking and nearly five years of analysis, the GP-B scientists appear to have done it.

"We measured a geodetic precession of  $6.600 \pm 0.017$  arcseconds and a frame dragging effect of  $0.039 \pm 0.007$  arcseconds," says Everitt.

For readers who are not experts in relativity: *Geodetic precession* is the amount of wobble caused by the static mass of the Earth (the dimple in spacetime) and the *frame dragging effect* is the amount of wobble caused by the spin of the Earth (the twist in spacetime). Both values are in precise accord with Einstein's predictions.

**Caption:** An artist's concept of twisted spacetime around a black hole.



The results of Gravity Probe B give physicists renewed confidence that the strange predictions of Einstein's theory are indeed correct, and that these predictions may be applied elsewhere. The type of spacetime vortex that exists around Earth is duplicated and magnified elsewhere in the cosmos--around massive neutron stars, black holes, and active galactic nuclei.

"If you tried to spin a gyroscope in the severely twisted space-time around a black hole," says Will, "it wouldn't just gently precess by a fraction of a degree. It would wobble crazily and possibly even flip over."

In binary black hole systems--that is, where one black hole orbits another black hole--the black holes themselves are spinning and thus behave like gyroscopes. Imagine a system of orbiting, spinning, wobbling, flipping black holes! That's the sort of thing general relativity predicts and which GP-B tells us can really be true.

What's next?

Everitt recalls some advice given to him by his thesis advisor and Nobel Laureate Patrick M.S. Blackett: "If you can't think of what physics to do next, invent some new technology, and it will lead to new physics."

"Well," says Everitt, "we invented 13 new technologies for Gravity Probe B. Who knows where they will take us?"

This epic might just be getting started, after all....

- Author: Dr. Tony Phillips | Credit: Science@NASA

[http://science.nasa.gov/science-news/science-at-nasa/2011/04may\\_epic/](http://science.nasa.gov/science-news/science-at-nasa/2011/04may_epic/)

## NASA Selects Investigations for Future Key Missions

NASA has selected three science investigations from which it will pick one potential 2016 mission: to look at Mars' interior for the first time, study an extraterrestrial sea on one of Saturn's moons, or study in unprecedented detail the surface of a comet's nucleus.

Each investigation team will receive \$3 million to conduct its mission's concept phase or preliminary design studies and analyses. After another detailed review of the concept studies, NASA will select one to continue development efforts leading up to launch. The selected mission will be cost-capped at \$425 million, not including launch vehicle funding.

The planetary missions selected to pursue preliminary design studies are:

- Geophysical Monitoring Station (GEMS) would study the structure and composition of the interior of Mars and advance understanding of the formation and evolution of terrestrial planets. The proposed Mars lander would carry three experiments. A seismometer for measuring Mars quakes would yield knowledge about interior materials from the crust to the core. A thermal probe beneath the surface would monitor heat flow from the planet's interior. Radio capability for Doppler tracking of tiny variations in the planet's wobble would provide information about the size and nature of the core. Understanding more about the deep interior of another planet would enable important new comparisons with what is known about Earth's interior.
- Titan Mare Explorer (TiME) would provide the first direct exploration of an ocean environment beyond Earth by landing in and floating on a large methane-ethane sea on Saturn's moon Titan.
- Comet Hopper would study cometary evolution by landing on a comet multiple times and observing its changes as it interacts with the sun.

Three technology developments for possible future planetary missions also were selected. The three will expand the ability to catalog near-Earth objects, or NEOs; enhance the capability to determine the composition of comet ices; and validate a new method to reveal the population of objects in the poorly understood, far-distant part of our solar system. During the next several years, selected teams will receive funding that is determined through contract negotiations to bring their respective technologies to a higher level of readiness. To be considered for flight, teams must demonstrate progress in a future mission proposal competition.

The proposals selected for technology development are:

- NEOCam would develop a telescope to study the origin and evolution of near-Earth Objects and study the present risk of Earth-impact. It would generate a catalog of objects and accurate infrared measurements to provide a better understanding of small bodies that cross our planet's orbit. A space-based telescope, NEOCam would be positioned in a location about four times the distance between Earth and the moon. From this lofty perch, NEOCam could observe the comings and goings of NEOs every day without the impediments to efficient observing like cloud cover and even daylight. The location in space NEOCam would inhabit is also important, because it allows the monitoring of areas of the sky generally inaccessible to ground-based surveys.
- Primitive Material Explorer (PriME) would develop a mass spectrometer that would provide highly precise measurements of the chemical composition of a comet and explore the objects' role in delivering volatiles to Earth.
- Whipple: Reaching into the Outer Solar System would develop and validate a technique called blind occultation that could lead to the discovery of various celestial objects in the outer solar system and revolutionize our understanding of the area's structure.

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

[http://www.jpl.nasa.gov/news/news.cfm?release=2011-136&cid=release\\_2011-136](http://www.jpl.nasa.gov/news/news.cfm?release=2011-136&cid=release_2011-136)

## Celebrate with a Vesta Fiesta

After close to four years cruising at stunning speeds, NASA's Dawn spacecraft is catching up to the object of its first destination in the main asteroid belt: Vesta. The Dawn mission invites you to celebrate with a Vesta Fiesta! Dawn is expected to achieve orbit around Vesta on July 16, when the asteroid is about 117 million miles from Earth. The mission is celebrating the start of year of Vesta observations with a Vesta Fiesta August 5-7. You can find more info about Vesta Fiesta at [http://dawn.jpl.nasa.gov/news/vesta\\_fiesta.asp](http://dawn.jpl.nasa.gov/news/vesta_fiesta.asp)

## Free-Floating Planets May Be More Common Than Stars

Astronomers have discovered a new class of Jupiter-sized planets floating alone in the dark of space, away from the light of a star. The team believes these lone worlds are probably outcasts from developing planetary systems and, moreover, they could be twice as numerous as the stars themselves.

The discovery is based on a joint Japan-New Zealand survey that scanned the center of the Milky Way galaxy during 2006 and 2007, revealing evidence for up to 10 free-floating planets roughly the mass of Jupiter. The isolated orbs, also known as orphan planets, are difficult to spot, and had gone undetected until now. The planets are located at an average approximate distance of 10,000 to 20,000 light years from Earth.



**Left:** This artist's concept illustrates a Jupiter-like planet alone in the dark of space, floating freely without a parent star.

planets in our Milky Way galaxy alone.

This could be just the tip of the iceberg. The team estimates there are about twice as many free-floating Jupiter-mass planets as stars. In addition, these worlds are thought to be at least as common as planets that orbit stars. This adds up to hundreds of billions of lone

The study, led by Takahiro Sumi appears in the journal **Nature**. The survey is not sensitive to planets smaller than Jupiter and Saturn, but theories suggest lower-mass planets like Earth should be ejected from their stars more often. As a result, they are thought to be more common than free-floating Jupiters.

Previous observations spotted a handful of free-floating planet-like objects within star-forming clusters, with masses three times that of Jupiter. But scientists suspect the gaseous bodies form more like stars than planets. These small, dim orbs, called brown dwarfs, grow from collapsing balls of gas and dust, but lack the mass to ignite their nuclear fuel and shine with starlight. It is thought the smallest brown dwarfs are approximately the size of large planets.

On the other hand, it is likely that some planets are ejected from their early, turbulent solar systems, due to close gravitational encounters with other planets or stars. Without a star to circle, these planets would move through the galaxy as our sun and others stars do, in stable

orbits around the galaxy's center. The discovery of 10 free-floating Jupiters supports the ejection scenario, though it's possible both mechanisms are at play.

The observations cannot rule out the possibility that some of these planets may be in orbit around distant stars, but other research indicates Jupiter-mass planets in such distant orbits are rare.

The survey, the Microlensing Observations in Astrophysics (MOA), is named in part after a giant wingless, extinct bird family from New Zealand called the moa. A 5.9-foot telescope at Mount John University Observatory in New Zealand is used to regularly scan the copious stars at the center of our galaxy for gravitational microlensing events. These occur when something, such as a star or planet, passes in front of another more distant star. The passing body's gravity warps the light of the background star, causing it to magnify and brighten. Heftier passing bodies, like massive stars, will warp the light of the background star to a greater extent, resulting in brightening events that can last weeks. Small planet-size bodies will cause less of a distortion, and brighten a star for only a few days or less.

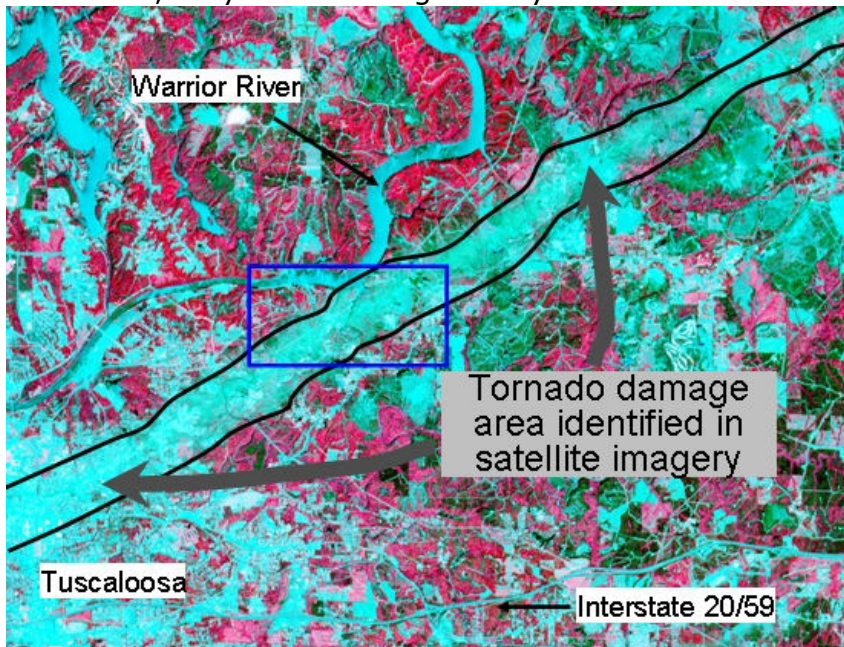
A second microlensing survey group, the Optical Gravitational Lensing Experiment (OGLE), contributed to this discovery using a 4.2-foot telescope in Chile. The OGLE group also observed many of the same events, and their observations independently confirmed the analysis of the MOA group.

- Credit: Science@NASA

## Unique Space Image of Alabama Tornado Tracks

NASA has released a unique satellite image tracing the damage of a monster EF-4 tornado that tore through Tuscaloosa, Alabama, on April 27th. It combines visible and infrared data to reveal damage unseen in conventional photographs.

"This is the first time we've used the ASTER instrument to track the wake of a super-outbreak of tornadoes," says meteorologist Gary Jedlovec of the Marshall Space Flight Center.



**Left:** An ASTER visible-IR image of tornado damage near Tuscaloosa, AL.

In the picture, captured just days after the storm, pink represents vegetation and aqua is the absence of vegetation. The tornado ripped up everything in its path, scouring the Earth's surface with its terrible force. The "tearing up" of vegetation makes the tornado's track stand out as a wide swath of aqua.

ASTER, short for Advanced Spaceborne Thermal Emission and Reflection Radiometer, orbits Earth onboard NASA's Terra spacecraft. Its data products include digital elevation maps from stereo images; surface

temperatures; vegetation maps; cloud and sea ice data; and more. Last spring the instrument helped track the movement of the oil spill in the Gulf of Mexico.

To detect the scars left by the twisters, ASTER senses the visible and infrared energy reflected from the planet's surface. Destruction like crushed houses, torn and snapped trees, and uprooted crops are evident in the multi-wavelength images.

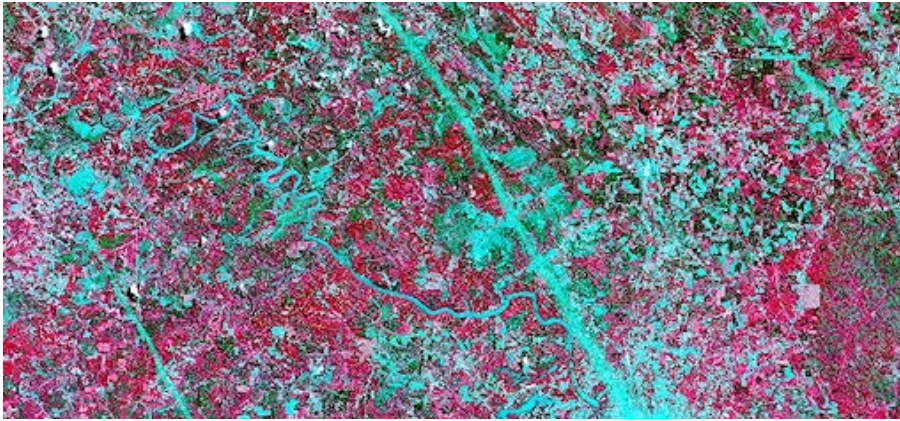
"A demolished house, debris and soil scattered on vegetated surfaces, and damaged trees and crops all change the pattern of reflected radiation measured by the satellite," explains Jedlovec. "We can analyze these patterns to help storm survey teams evaluate the damage."

Ground teams conducting field surveys of tornado damage must try to pinpoint where the twisters touched down, how long they stayed on the ground, and the force of their winds. But doing this from ground level can be tricky. Some places are nearly impossible to reach by foot or car. Also, in remote areas, damage often goes unreported, so survey teams don't know to look there.

This is where satellites can help.

"To get an accurate picture survey teams need to look everywhere that sustained damage – even unreported areas. Satellite sensors detect damage in rural areas, wilderness areas, and other unpopulated areas. Only with that knowledge can surveyors determine the true track of a tornado."

Otherwise, says Jedlovec, a twister could have flattened a single dwelling in a remote location, killing everyone inside, and no one would know.



**Left:** Another sample of ASTER tornado data showing three nearly-parallel tracks of destruction.

Less critical but still important are home owners' insurance issues. To evaluate claims submitted by storm victims, insurance companies rely on National Weather Service storm reports

based on the field surveys.

"Let's say you live in a remote area," says Jedlovec. "If there's no record of a storm passing over your area, you could be out of luck."

Jedlovec and colleagues are working now to produce satellite images of other areas ravaged by the historic outbreak of tornadoes.

"We want to help the storm victims any way we can."

- FULL STORY at

[http://science.nasa.gov/science-news/science-at-nasa/2011/16may\\_groundtracks/](http://science.nasa.gov/science-news/science-at-nasa/2011/16may_groundtracks/)



## Milky Way Safari

by Dauna Coulter and Dr. Tony Phillips

Safari, anyone? Citizen scientists are invited to join a hunt through the galaxy. As a volunteer for Zooniverse's Milky Way Project, you'll track down exotic creatures like mysterious gas bubbles, twisted green knots of dust and gas, and the notorious "red fuzzies."

"The project began about four months ago," says astrophysicist Robert Simpson of Oxford University. "Already, more than 18,000 people are scouting the Milky Way for these quarry."

The volunteers have been scrutinizing infrared images of the Milky Way's inner regions gathered by NASA's Spitzer Space Telescope. Spitzer's high resolution in infrared helps it pierce the cloaking haze of interstellar gas and dust, revealing strange and beautiful structures invisible to conventional telescopes. The Milky Way Project is helping astronomers catalogue these intriguing features, map our galaxy, and plan future research.

"Participants use drawing tools to flag the objects," explains Simpson. "So far they've made over a million drawings and classified over 300,000 images."

Scientists are especially interested in bubble-like objects believed to represent areas of active star formation. "Every bubble signifies hundreds to thousands of young, hot stars. Our volunteers have circled almost 300,000 bubble candidates, and counting," he says.

Humans are better at this than computers. Computer searches turn up only the objects precisely defined in a program, missing the ones that don't fit a specified mold. A computer would, for example, overlook partial bubbles and those that are skewed into unusual shapes.

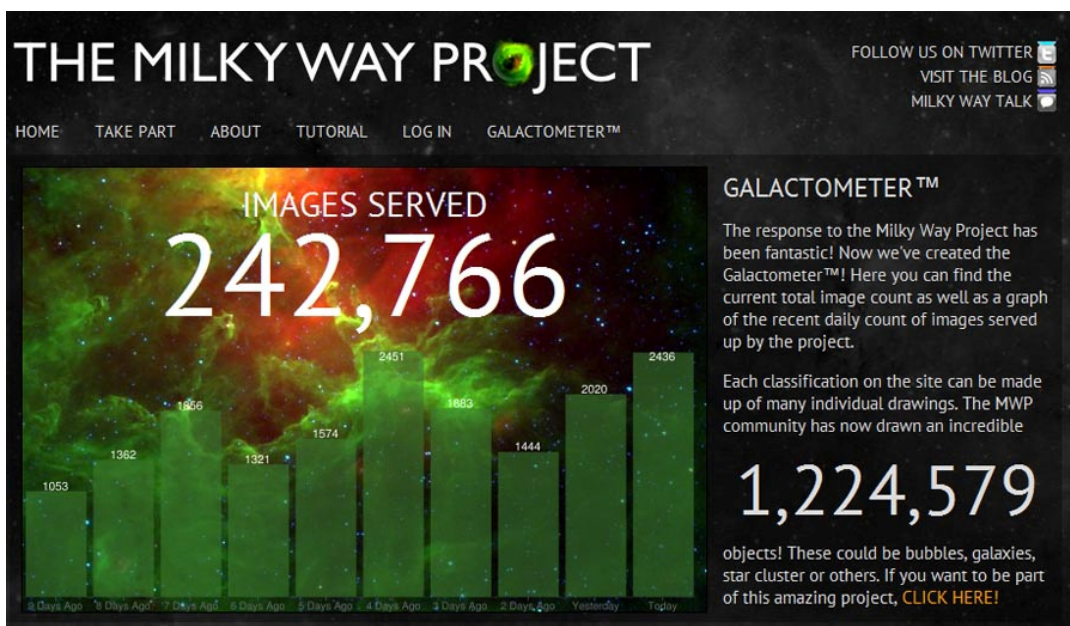
"People are more flexible. They tend to pick out patterns computers don't pick up and find things that just look interesting. They're less precise, but very complementary to computer searches, making it less likely we'll miss structures that deserve a closer look. And just the sheer numbers of eyes on the prize mean more comprehensive coverage."

Along the way the project scientists distill the volunteers' data to eliminate repetitive finds (such as different people spotting the same bubbles) and other distortions.

The project's main site (<http://www.milkywayproject.org>) includes links to a blog and a site called Milky Way Talk. Here "hunters" can post comments, chat about images they've found, tag the ones they consider especially intriguing, vote for their favorite images (see the winners at <http://talk.milkywayproject.org/collections/CMWS00002u>), and more.

Zooniverse invites public participation in science missions both to garner interest in science and to help scientists achieve their goals. More than 400,000 volunteers are involved in their projects at the moment. If you want to help with the Milky Way Project, visit the site, take the tutorial, and ... happy hunting!

You can get a preview some of the bubbles at Spitzer's own web site, <http://www.spitzer.caltech.edu/>. Kids will enjoy looking for bubbles in space pictures while playing the Spitzer concentration game at <http://spaceplace.nasa.gov/spitzer-concentration/>.



**Left:** Volunteers study infrared images of our galaxy from the Spitzer Space Telescope, identifying interesting features using the special tools of the Milky Way Project, part of the Citizen Science Alliance Zooniverse web site.

- This article was provided by the Jet Propulsion Laboratory, California Institute of

Technology, under a contract with the National Aeronautics and Space Administration.

# Night Sky Network

Astronomy Clubs bringing the wonders of the universe to the public



## **New Clubs Join Night Sky Network**

The Night Sky Network's membership keeps growing! Please give a hearty welcome to these 27 new clubs: Alachua Astronomy Club, AquaSoft Astronomy Club, Astronomers of Verde Valley, Astronomical Association of Northern California, Astronomy Club of Asheville, Atlanta Astronomy Club, Boeing Employees' Astronomical Society, Brunswick Astronomy Club, Carolina Skygazers, Denver Astronomical Society, Dinosaur National Monument Night Sky Team, East Central Minnesota Astronomy Club, Florida Keys Astronomy Club, GSNEO Astronomy Club, Gloucester Area Astronomy Club, Hercules Stargazers, Kiski Astronomers, Local Group Astronomy Club of Santa Clarita Valley, Mid-Hudson Astronomical Association, Midlands Astronomy Club, NWA Star Gazers, New Horizons West, Oil Capital / Star Corral of Broken Arrow, Rappahannock Astronomy Club, SierraStargazers, Treasure Coast Astronomical Society, and the Wabash Valley Astronomical Society.

## **AL Award**

Now that Astronomy Day is over, consider entering the Astronomy Day Award. New categories have been added so even smaller groups have an equal chance of winning. If you hosted an event for the either Fall Astronomy Day 2010 or the Spring Astronomy Day 2011, you are eligible to enter. Deadline is June 13, 2011. For more information see:

<http://www.astroleague.org/files/astroday/AwardEntryForms2010.pdf>

The award is sponsored by Sky & Telescope, the American Astronomical Society and the Astronomical League.

## **Get Go StarGaze on iTunes:**

<http://itunes.apple.com/us/app/go-stargaze/id380833895?mt=8>

Join us on Facebook: <http://www.facebook.com/nightskynetwork>

## **How are you using the videos: Growing Your Astronomy Club?**

We'd love to hear how you are using the tips in the latest videos:

<http://www.astrosociety.org/SharingTheUniverse/index.html>

The more specific you are, the better. We're using your stories to write up summaries about how these Night Sky Network videos support clubs. What tips from the videos is your club using to change the way meetings or other events are run? Do tell!

## **ISAN5**

International Sidewalk Astronomy Night is in its 5th year. Millions of eyes are waiting!

<http://www.sidewalkastronomers.us/>

## **FETTSS Image Collection Available Now**

Celebrating NASA's Year of the Solar System, From the Earth to the Solar System (FETTSS) is a collection of high resolution images that showcase the excitement of planetary exploration and our search for life elsewhere. Including contributions from backyard astronomers as well as large telescopes in space the collection represents the current state of exploration as seen through the eyes of the scientific community. Download the images here: <http://fettss.arc.nasa.gov>

## **The Universe at Your Fingertips 2.0 just released!**

The nonprofit Astronomical Society of the Pacific announces the publication of a DVD-ROM with 133 field-tested activities for teaching astronomy. This gives you even more ideas for engaging star party audiences and classroom students. A special introductory offer takes \$3 off the price of the disk if you order before the end of May. See the full table of contents and find out more:

<http://astrosociety.org/uayf/>

- Marni Berendsen, Kenneth Frank and Jessica Santascoy, Night Sky Network

## **SWFAS Minutes**

Minutes of Southwest Florida Astronomical Society, Inc  
Meeting Date: May 5, 2011

**CALL TO ORDER:** The monthly meeting of the Southwest Florida Astronomical Society was held at the Calusa Nature Center and Planetarium, Ft Myers, Florida, on Thursday, May 5, 2011. The meeting convened at 7:30pm, President Brian Risley presiding.

**MEMBERS IN ATTENDANCE:** There were approximately 27 members and visitors in attendance.

### **OPENING REMARKS:**

President Brian Risley announced that the Bowditch Beach star party was "clouded out."

Plans for the May 7th Astronomy Day star party at the Calusa Nature Center/ Planetarium were discussed. Members were advised to arrive early so that telescopes and displays can be set up in daylight.

Brian and Bruce Dissette presented a proposal for a club picnic at Norm's house this summer because he has such excellent viewing conditions with minimal light pollution. Bob Francis suggested waiting until after September.

Brian showed some of the eyepieces he has acquired for the telescope loan program. See his equipment coordinator's report for more information.

**VICE PRESIDENT'S REPORT:** Bruce Dissette, Vice president, presented club members with a written list of the Messier Catalogue with accompanying pictures of each object and an abbreviated star chart showing the locations of all 110 objects. Also, Bruce has the club's 8" optical craftsman telescope operational and will have it at the Astronomy day Star Party.

**NEWSLETTER EDITOR'S REPORT:** Carol Holmberg, Newsletter Editor, as noted in the "Eyepiece."

**SECRETARY'S REPORT:** Secretary, Kathleen Hendrix, not present so minutes were read briefly by Brian and accepted by acclamation by club members.

**TREASURER'S REPORT:** Treasurer, Stewart Rorer, was not present due to poor health. His on-line report was read by Brian and accepted by acclamation. Also, Brian announced that our Dark Sky network dues are due.

**VIEWING COORDINATORS' REPORT:** Viewing Coordinators, Chuck Pavlick, and Tony Heiner. Breathtaking pictures of M-3 taken by Jon Martin are now on-line for review.

**LIBRARIAN'S REPORT:** Librarian Maria Berni, no report

**CLUB HISTORIAN:** Club Historian Danny Secary, no report.

**EQUIPMENT COORDINATOR:** Equipment Coordinator Brian Risley reported that he will have the 8" "go-to" on display for astronomy day, as well as several telescopes available for check out. He restated his success in obtaining eyepieces for the club.

**WEBSITE COORDINATOR:** Website Coordinator, Dan Fitzgerald, announced that work is completed on the club's new web site.

PROGRAM COORDINATOR: Program Coordinator Ron Myrick, announced that we have lectures scheduled throughout the summer.

EVENING PROGRAM; Carol Holmberg presented a short but striking program on planetary nebula.

Dennis Albright from the Naples Club presented three lectures on the four outer planets as well as why Pluto is no longer considered a planet. He also discussed "minor planets," asteroids, comets, and meteors.

CLOSING REMARKS, ANNOUNCEMENTS: Brian reminded members that dues are \$20 for the year and need to be brought up to date as the Astronomical League dues are due in June and the SWFAS pays your membership to it through your annual dues. Those who have not paid will be dropped from the roster and will not get **The Reflector** any more.

ADJOURNMENT: Thursday June 2nd was set as the next regular meeting.  
The May 5th meeting was adjourned at 9:30 pm.

Bruce Dissette standing in for Kathleen Hendrix, Secretary

## Future Events

CALOOSAHATCHEE REGIONAL PARK	5-28-11	DUSK	STAR PARTY
CALUSA NATURE CENTER PLNTRM	6-2-11	7:30 PM	MONTHLY MEETING
CALOOSAHATCHEE REGIONAL PARK	6-4-11	DUSK	STAR PARTY
CALUSA NATURE CENTER PLNTRM	7-7-11	7:30 PM	MONTHLY MEETING
SANIBEL DING DARLING PARK FAMILY	10-17-11	11:00 AM	SOLAR OBSERVING

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