

Southwest Florida Astronomical Society

SWFAS



The Eyepiece November 2012

A MESSAGE FROM THE PRESIDENT

The cooler weather has finally arrived! YEAH!

This month our meeting will be our Telescope Renaissance night at the Calusa Nature Center Planetarium. (There will be no official meeting.) We will also do observing during the event. If you have questions or need help with your telescope or know someone who does, please bring them with equipment to the event. We will also have the public Loan-A-Scopes available for those interested in trying out a scope.

We have several events this month: On Nov. 3rd, we have the Lee County Schools Super Science Saturday at Oak Hammock Middle off Tice St by 1-75. I plan to do presentations about the Night Sky Network as well as solar observing. I can use some additional help there with observing or showing the NSN toolkits.

On Nov. 10th, we have a Star Party at Caloosahatchee Regional Park. Contact Bruce Dissette for any additional information.

On Nov. 17th, Carol Stewart will be doing a presentation on Jupiter at the Planetarium with observing afterwards. We also have a request from Cub Scout Pack 140 who will be camping at CRP on the 17th and they are interested in doing some observing. If anyone is interested in helping them, please contact me for more information.

This past month we had several good events. Bruce did a Cub Scout group at the star party at CRP on Oct. 13th. The Ding Darling Days on Oct. 14th was clear this year and we were able to show the sun to a large number of people as well as give out handouts and posters. Kelly Flaherty, Tom Woosnan and Carole Holmberg all came out and helped. On Oct. 19th, we went up to Camp Miles for the Cub Scout Extravaganza. There were 1600 scouts/family at the event, we had several hundred for the presentation and Tony Heiner and Lee Kraemer displayed images on the projector. Don Palmer and I setup scopes for direct visual work. We dodged some clouds but it was a great event. CRP Star Party Schedule for 2012: November 10th and December 15th. Please contact Bruce Dissette if you have any questions.

Upcoming Meetings: December 6th – Tom Field – “You Can Almost Touch the Stars!”
Spectroscopy for Amateurs

Moon: Last Quarter 6th, New 13th, 1st Quarter 21st, Full 28th

Planets: Mars is very low in the west at sunset, rapidly approaching Antares. Saturn is now behind the sun and won't be well placed for observation for several months. On the 27th, you can find it 1° from Venus. Jupiter is getting high in Taurus rising around 10:00pm. Venus is still shining bright in the morning sky. By the end of the month, Mercury will reach greatest elongation east of the sun and will be in the western sky after sunset. On the 17th, we have the Leonid meteor shower. Uranus and Neptune are still well placed for observing in the evening sky. There is a penumbral eclipse on the 28th, if anyone notices!

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November Meeting

Our October monthly meeting will be held on Thursday November 1st at 7:30 pm at Calusa Nature Center Planetarium. Instead of our regular program, we will be having our annual Telescope Renaissance Night. Members of the public are invited to bring their telescopes for help in teaching them how to work the scope, explain what all those thingies do, and make minor repairs. There will also be a planetarium show and telescope observing. Club members who have a telescope that needs minor repair or cleaning are welcome to bring their telescopes too. And if there is something about your telescope that you can't understand or get to work, now's the time to ask. No need to be shy. Because of the nature of the evening, there will be no business meeting in November.

Upcoming Meetings

We have a talk on Spectroscopy "You Can Almost Touch the Stars!" by Tom Field covering amateur spectroscopy equipment scheduled for December. The talk will be a remote presentation.

CRP Star Party Schedule

Upcoming star parties are November 10th and December 15th. Please contact Bruce Dissette if you have any questions.

The Sky This Week

Mars is very low in the west at sunset, but still possible to see if you have a clear view of the horizon. The Moon is passing by Jupiter (and the Pleiades and Hyades clusters) midweek, as seen in this chart by Sky & Telescope. Venus is bright in the east before dawn.

Station Astronauts Plan Nov. 1 Spacewalk to Isolate Coolant Leak

NASA engineers are putting the finishing touches on plans for a spacewalk Nov. 1 to isolate a small leak in the ammonia cooling system used to carry away heat generated by the electrical gear that stores and distributes power from one of the International Space Station's eight huge solar panels.

The leak is tiny, the equivalent to a hole about the diameter of a human hair. But if it is not bypassed or repaired, the coolant in the channel 2B solar array will drop below safety margins over the next few months, taking down a critical power channel.

In a bid to locate the leak, Expedition 33 commander Sunita Williams and Japanese astronaut Akihiko Hoshide will suit up and venture outside the station to operate a valve and reconfigure coolant lines, isolating the part of the channel 2B coolant loop that snakes through a large folding radiator.

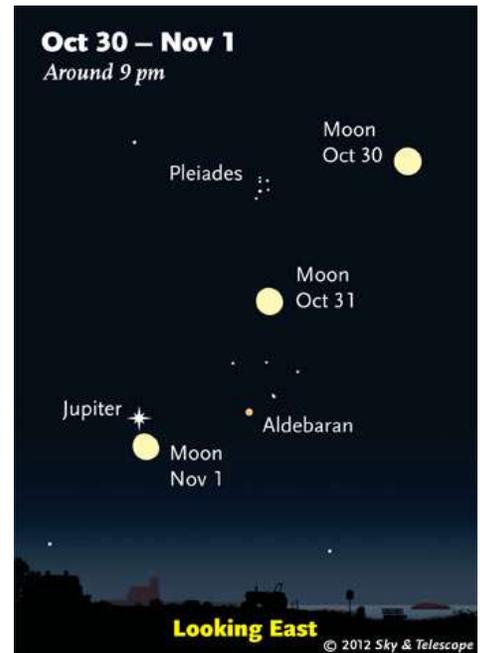
Then they will deploy a spare radiator used during the early stages of space station assembly and route the channel 2B coolant through the older panel. If the leak ultimately goes away - and it likely will take several weeks to find out - engineers will know the problem was in the original radiator, most likely the result of a space debris impact.

In that case, station managers could opt to use the older radiator indefinitely, solving the problem.

If the leak continues, however, they would have to consider replacing a pump module or taking more extensive steps in a future spacewalk. But they will have more time to consider their options. The old radiator has ammonia of its own to contribute and using it will effectively top off the system, keeping the coolant equipment operating for another year or so, assuming no other problems, while engineers consider their options.

The lion's share of the International Space Station's electrical power comes from four sets of dual-panel solar arrays, two on the right side of a 357-foot-long truss and two on the left side. Each set of solar arrays features two 115-foot-long panels that extended in opposite directions. The Russian segment of the station taps into the U.S. power grid to supplement electricity generated by two relatively small solar panels on the Zvezda command module.

The two U.S. arrays at the far left end of the station's integrated power truss - the port 6, or P6 arrays - feed power to electrical channels 2B and 4B. The P6 set of arrays, like its three counterparts, routes power from the solar panels directly into the station's



electrical grid during daylight passes, at the same time charging dual sets of batteries that take over during orbital darkness.

A slight 1.5-pound-per-year leak in the channel 2B cooling system has been present since 2007 and during a shuttle visit last year, two spacewalking astronauts added eight pounds of ammonia to the reservoir to boost it back up to a full 55 pounds. The plan at that time was to top off the system every four years or so to "feed the leak," replacing the lost ammonia as required. But over the past few months, engineers saw the leak rate suddenly quadruple, either because something changed at the original leak site or, more likely, because another leak developed somewhere else in the system.

Whether the leakage was caused by space debris or a component failure of some sort is not yet known. But the result is: If the leak continues at its current rate, the coolant will drop below a 40-pound safety limit and the system will shut down by the end of the year or shortly thereafter, taking power channel 2B down with it.

While the space station can operate without the full complement of power channels, the loss of channel 2B would force flight controllers to power down equipment, eliminating redundancy and reducing the amount of research the crews could carry out.

- *By William Harwood, CBS News*

Fried Planets

An international team of astronomers has caught a star in the act of devouring one of its planets. BD+48 740, a red giant, appears to have the fumes of a scorched planet in its atmosphere. This is consistent with a rocky world, recently destroyed.

Could the same thing happen to Earth?

Yes indeed, says Alex Wolszczan, a member of the research team: "A similar fate may await the inner planets in our solar system when the sun becomes a red giant some five billion years from now."

Researchers who specialize in stellar evolution have long known that the inner planets are in danger. The trouble starts in the distant future when the sun's core runs out of hydrogen fuel for nuclear fusion. To keep the fires burning, the sun will begin to fuse hydrogen outside the core, in a layer closer to the stellar surface. This will turn the sun into a red giant, at least 200 times wider than it is today. Mercury, Venus, Earth and possibly even Mars could be engulfed.

The fate of Earth is not a certainty, however. Some researchers believe that Earth's orbit might spiral outward, keeping the planet at a safe distance from the approaching inferno. This could happen if solar winds carry away a significant fraction of the sun's mass in the years leading up to the red giant phase.

On the other hand, the sun might expand so quickly that our planet has no chance to escape. Earth would get caught in the sun's rapidly advancing atmosphere and spiral inward to oblivion.

Observations of red giant BD+48 740 lend credence to the second possibility.

"Our detailed spectroscopic analysis of BD+48 740 reveals that the red giant contains an abnormally high amount of lithium," says Monika Adamow who led the study.

Caption: A spectroscopic analysis of light from BD+48 740 reveals lithium fumes in the star's atmosphere.

Because lithium is easily destroyed in stars, finding lots of it in an old red giant is unexpected. The most likely source is a planet. Wolszczan explains: "It is probable that the lithium production in BD+48 740 was triggered by a mass the size of a planet that spiraled into the star and heated up while the star was digesting it."

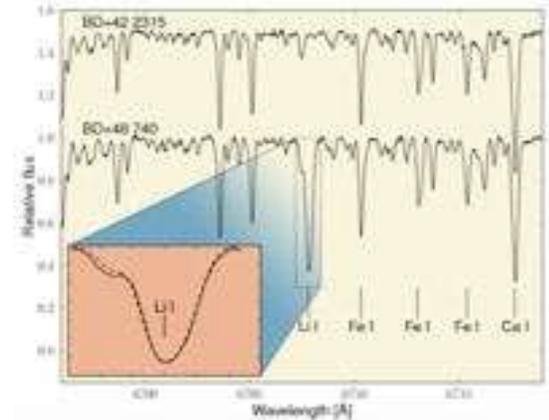
The team found another piece of evidence, too. BD+48 740 has a gas giant planet 1.6 times bigger than Jupiter which has not yet been devoured. The big planet has a highly elliptical orbit. In fact, it is the most elliptical orbit ever found for a planet around an older star. Its orbit, which almost surely started out circular, was probably altered by some catastrophic event--like its star having an inner planet for lunch.

One day, he says, our own solar system may end up the same way. In five billion years, the fried planet could be Earth.

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

- The full version of this story is at

http://science.nasa.gov/science-news/science-at-nasa/2012/25oct_friedplanets/



Cassini Sees Burp at Saturn After Large Storm

NASA's Cassini spacecraft has tracked the aftermath of a rare massive storm on Saturn. Data reveal record-setting disturbances in the planet's upper atmosphere long after the visible signs of the storm abated, in addition to an indication the storm was more forceful than scientists previously thought.

Data from Cassini's composite infrared spectrometer (CIRS) instrument revealed the storm's powerful discharge sent the temperature in Saturn's stratosphere soaring 150° Fahrenheit above normal. At the same time, researchers detected a huge increase in the amount of ethylene gas, the origin of which is a mystery. Ethylene, an odorless, colorless gas, isn't typically observed on Saturn. On Earth, it is created by natural and man-made sources.

"This temperature spike is so extreme it's almost unbelievable, especially in this part of Saturn's atmosphere, which typically is very stable," said Brigette Hesman, the study's lead scientist. "To get a temperature change of the same scale on Earth, you'd be going from the depths of winter in Fairbanks, Alaska, to the height of summer in the Mojave Desert."

First detected by Cassini in Saturn's northern hemisphere on Dec. 5, 2010, the storm grew so large that an equivalent storm on Earth would blanket most of North America from north to south and wrap around our planet many times. This type of giant disturbance on Saturn typically occurs every 30 Earth years, or once every Saturn year.

Not only was this the first storm of its kind to be studied by a spacecraft in orbit around the planet, but it was the first to be observed at thermal infrared wavelengths. Infrared data from CIRS allowed scientists to take the temperature of Saturn's atmosphere and to track phenomena that are invisible to the naked eye.

Temperature measurements by the composite infrared spectrometer revealed two unusual beacons of warmer-than-normal air shining brightly in the stratosphere. These indicated a massive release of energy into the atmosphere. After the visible signs of the storm started to fade, the instrument's data revealed the two beacons had merged. The temperature of this combined air mass shot up to more than -64° Fahrenheit.

According to Hesman, the huge spike of ethylene generated at the same time peaked with 100 times more of the gas than scientists thought possible for Saturn.

The team still is exploring the origin of the ethylene, but has ruled out a large reservoir deep in the atmosphere.

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

http://www.jpl.nasa.gov/news/news.php?release=2012-335&cid=release_2012-335

Ancient Computer (airs November 21 on PBS)

Caption: A Greek shipwreck holds the remains of an intricate bronze machine that turns out to be the world's first computer.

NOVA Program Description

In 1900, a storm blew a boatload of sponge divers off course and forced them to take shelter by the tiny Mediterranean island of Antikythera. Diving the next day, they discovered a 2,000 year-old Greek shipwreck. Among the ship's cargo they hauled up was an unimpressive green lump of corroded bronze. Rusted remnants of gear wheels could be seen on its surface, suggesting some kind of intricate mechanism. The first X-ray studies confirmed that idea, but how it worked and what it was for puzzled scientists for decades. Recently, hi-tech imaging has revealed the extraordinary truth: this unique clockwork machine was the world's first computer. An array of 30 intricate bronze gear wheels, originally housed in a shoebox-size wooden case, was designed to predict the dates of lunar and solar eclipses, track the Moon's subtle motions through the sky, and calculate the dates of significant events such as the Olympic Games. No device of comparable technological sophistication is known from anywhere in the world for at least another 1,000 years. So who was the genius inventor behind it? And what happened to the advanced astronomical and engineering knowledge of its makers? NOVA follows the ingenious sleuthing that finally decoded the truth behind the amazing ancient Greek computer.

- <http://www.pbs.org/wgbh/nova/ancient/ancient-computer.html>



Science Fiction Stories with Good Astronomy & Physics

This is a selective list of some short stories and novels that use more or less accurate science and can be used for teaching or reinforcing astronomy or physics concepts. It

includes both traditional "science-fiction" and (occasionally) more serious fiction that derives meaning or plot from astronomy or physics ideas. The titles of short stories are given in quotation marks; only short stories that have been published in book form or are available free on the Web are included. The author welcomes suggestions for additions to this list, especially if your favorite story with good science is left out:
<http://www.astrosociety.org/edu/resources/scifiprint.html>

- Listing Compiled by Andrew Fraknoi (Foothill College), Version 5.2; January 2012
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Eclipse 2012

On November 14, 2012 the easiest spot to view the total eclipse will be in Cairns, Far North Queensland, Australia.

Eclipse 2012 is attracting world-wide attention from visitors planning holidays around the event which is best viewed from the Cairns region. The total solar eclipse will be seen along a strip of land about 200km wide which crosses the top of eastern Australia and the Coral Sea. Tropical North Queensland Tourism will be bringing the eclipse to everyone through a 2 hour webcast. You can watch the webcast on ustream. The Sun-Earth Day team will have a direct link for easy access at <http://sunearthday.nasa.gov>

Highlights of the webcast:

- * 2 x telescopes from the Astronomical Association of Queensland which will be fitted to 2x panasonic Lumix cameras for the video output.
- * One of the telescopes will be set up at Ellis Beach and the other at Palm Cove
- * Special guests talking about the eclipse, comments to the public etc.
- * Camera on a boat on The Great Barrier Reef with a second host

There will be a link on the official eclipse site www.eclipse2012.org.au pointing to the live stream.

- Elaine Lewis, Sun-Earth Day, elaine.m.lewis@nasa.gov, 301-286-3337

Jupiter: Turmoil from Below, Battering from Above

Jupiter, the mythical god of sky and thunder, would certainly be pleased at all the changes afoot at his namesake planet. As the planet gets peppered continually with small space rocks, wide belts of the atmosphere are changing color, hotspots are vanishing and reappearing, and clouds are gathering over one part of Jupiter, while dissipating over another.

"The changes we're seeing in Jupiter are global in scale," Glenn Orton, a senior research scientist at NASA's Jet Propulsion Laboratory, said. "We've seen some of these before, but never with modern instrumentation to clue us in on what's going on. Other changes haven't been seen in decades, and some regions have never been in the state they're appearing in now. At the same time, we've never seen so many things striking Jupiter. Right now, we're trying to figure out why this is all happening."

Orton and colleagues have been taking images and maps of Jupiter at infrared wavelengths from 2009 to 2012 and comparing them with high-quality visible images from the increasingly active amateur astronomy community. Following the fading and return of a prominent brown-colored belt just south of the equator, called the South Equatorial Belt, from 2009 to 2011, the team studied a similar fading and darkening that

occurred at a band just north of the equator, known as the North Equatorial Belt. This belt grew whiter in 2011 to an extent not seen in more than a century. In March of this year, that northern band started to darken again.

The team obtained new data from NASA's Infrared Telescope Facility and the Subaru Telescope on Mauna Kea that matched up that activity with infrared observations. Those data showed a simultaneous thickening of the deeper cloud decks, but not necessarily the upper cloud deck, unlike the South Equatorial Belt, where both levels of clouds thickened and then cleared up. The infrared data also resolved brown, elongated features in the whitened area called "brown barges" as distinct features and revealed them to be regions clearer of clouds and probably characterized by downwelling, dry air.

The team was also looking out for a series of blue-gray features along the southern edge of the North Equatorial Belt. Those features appear to be the clearest and driest regions on the planet and show up as apparent hotspots in the infrared view, because they reveal the radiation emerging from a very deep layer of Jupiter's atmosphere. Those hotspots disappeared from 2010 to 2011, but had reestablished themselves by June of this year, coincident with the whitening and re-darkening of the North Equatorial Belt.

While Jupiter's own atmosphere has been churning through change, a number of objects have hurtled into Jupiter's atmosphere, creating fireballs visible to amateur Jupiter watchers on Earth. Three of these objects - probably less than 45 feet in diameter - have been observed since 2010. The latest of these hit Jupiter on Sept. 10, 2012, although Orton and colleagues' infrared investigations of these events showed this one did not cause lasting changes in the atmosphere, unlike those in 1994 or 2009.

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

http://www.jpl.nasa.gov/news/news.php?release=2012-328&cid=release_2012-328

Planet Found in Nearest Star System to Earth



Astronomers have discovered a planet with about the mass of the Earth orbiting a star in the Alpha Centauri system — the nearest to Earth. It is also the lightest exoplanet ever discovered around a star like the Sun.

Alpha Centauri is one of the brightest stars in the southern skies and is the nearest stellar system to our Solar System — only 4.3 light-years away. It is actually a triple star — a system consisting of two stars similar to the Sun orbiting close to each other, designated Alpha Centauri A and B, and a more distant and faint red component known

as Proxima Centauri. Since the nineteenth century astronomers have speculated about planets orbiting these bodies, the closest possible abodes for life beyond the Solar System, but searches of increasing precision had revealed nothing. Until now.

"Our observations extended over more than four years using the HARPS instrument and have revealed a tiny, but real, signal from a planet orbiting Alpha Centauri B every 3.2 days," says Xavier Dumusque (Geneva Observatory, Switzerland and Centro de Astrofísica da Universidade do Porto, Portugal). "It's an extraordinary discovery and it has pushed our technique to the limit!"

The team detected the planet by picking up the tiny wobbles in the motion of the star Alpha Centauri B created by the gravitational pull of the orbiting planet. The effect is minute — it causes the star to move back and forth by no more than 51 centimeters per second (1.8 km/hour), about the speed of a baby crawling. This is the highest precision ever achieved using this method.

Alpha Centauri B is very similar to the Sun but slightly smaller and less bright. The newly discovered planet, with a mass of a little more than that of the Earth, is orbiting about six million kilometers away from the star, much closer than Mercury is to the Sun in the Solar System. The orbit of the other bright component of the double star, Alpha Centauri A, keeps it hundreds of times further away, but it would still be a very brilliant object in the planet's skies.

The first exoplanet around a Sun-like star was found by the same team back in 1995 and since then there have been more than 800 confirmed discoveries, but most are much bigger than the Earth, and many are as big as Jupiter. The challenge astronomers now face is to detect and characterize a planet of mass comparable to the Earth that is orbiting in the habitable zone around another star. The first step has now been taken.

"This is the first planet with a mass similar to Earth ever found around a star like the Sun. Its orbit is very close to its star and it must be much too hot for life as we know it," adds Stéphane Udry, a member of the team, "but it may well be just one planet in a system of several. Our other HARPS results, and new findings from Kepler, both show clearly that the majority of low-mass planets are found in such systems."

"This result represents a major step towards the detection of a twin Earth in the immediate vicinity of the Sun. We live in exciting times!" concludes Xavier Dumusque. - <http://www.eso.org/public/news/eso1241/>

How to Hunt a Space Rock

Peter Willis and his team of researchers at NASA's Jet Propulsion Laboratory had a problem. Actually, more like they had a solution that needed a problem. Confused? Let's let Peter give it a shot...

"My team and I came up with a new lab on a chip," said Willis, a scientist at JPL's Microdevices Lab. "It essentially miniaturizes an automated sample processing and analysis instrument that could be put aboard future spacecraft and sent to distant planets, moons and asteroids. One challenge we have is finding new and interesting samples to try our chip on."

The team had already gone into the field in quest of unique samples.

But Willis and crew knew that when testing something destined for another world, it is good to try it on something not of this world. What they needed was a sign from above. On the evening of Aug. 21, 2012, a large fireball that turned night into day was reported over a mountain range halfway between Reno and Salt Lake City. By convention, the meteorite was named after the nearest town or prominent geographic feature.

"We first heard about the Battle Mountain meteorite on the morning of Wednesday, Sept. 5," said Willis. "We were on the road to Nevada the next afternoon." Meteorites are the remnants of asteroids and comets that have fallen to Earth. The challenge with these celestial visitors is that the longer they reside on Earth, the longer they are exposed to the corrosive effects of Earthly elements. JPL's miniature lab on a chip, was tasked with looking for chemical markers and amino acids that originated in space, not manufactured naturally here on Earth. To give their new instrument a true test run, Willis' team needed a factory-fresh piece of the heavens.

After a night at a local motel, Willis packed hiking gear and a whole bunch of water into their SUV, and struck out for Battle Mountain, Nevada. Along for the ride, and acting as the expedition's navigator, was J.P. Kirby.

Kirby, a senior scientist from the Planetary Science Institute in Tucson, Ariz., was navigating because meteor sightings usually occur when the space rock in question is hurtling through the atmosphere tens, if not hundreds of thousands, of feet above the ground. With a long way between hurtling airborne fireball and ground, there is a lot of room for error in plotting potential meteorite impact points.

"The first day, we covered 6 miles of mountainous terrain on foot but didn't find anything but terrestrial rocks and the occasional whiptail lizard," said Willis. "The next day was going to be our last shot, so we planned to drive much deeper into the estimated impact zone. The problem was, the most negotiable route ended up taking us through an active mine claim. We quickly found out that miners are not much interested in rocks from space."

Since Battle Mountain is in gold mine country, and gold is worth its weight in gold these days, unannounced visitors of any ilk are generally discouraged.

"We were fixing a flat when they drove up and told us to turn around," said Willis. "We needed to get the tire repaired anyway, so we headed back to town to regroup and look for a different route which didn't cross mining land."

The new route made full use of their SUV's 4-wheel drive capability. The team negotiated narrow, sloping, unpaved, sand-flooded switchbacks before arriving near the center of their estimated impact zone. By the time they parked, it was already mid-afternoon. For the next three hours, the team fanned out in different directions, but found nothing extraterrestrial in nature. By 4:30 p.m., it was getting to be time to wrap things up. The team did not want to negotiate those unpaved, dangerous switchbacks after dark if they didn't have to.

At 4:30, they had just begun the final leg of his search ... when they saw it. Sitting there on the mountainside, amidst a tangle of sun-bleached dirt, pebbles and scrub was a jet-black rock. Soon everyone gathered, surrounding their 3-inch-wide piece of the sky.

"Initially, everyone was basically freaking out," said Willis. "Then we got down to business and took pictures before collecting the meteorite in a sterile manner."

On the way back to the vehicle, Willis heard more shouting and thought his team had found another meteorite.

"But it was just an irritated rattlesnake," said Willis. "He went back into his hole and we went home, with a fresh chunk of outer space sealed in a sample bag."

A 1.4-pound fragment of the Battle Mountain meteorite is currently undergoing analysis by the team's lab-on-a-chip systems at JPL.

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

http://www.jpl.nasa.gov/news/news.php?release=2012-320&cid=release_2012-320



A Cosmic Tease: Trials of the Herschel Space Telescope Science Teams

By Dr. Marc J. Kuchner

Vast fields of marble-sized chunks of ice and rock spun slowly in the darkness this week, and I sat in the back of a grey conference room with white plastic tables spread with papers and laptops. I was sitting in on a meeting of an international team of astronomers gathered to analyze data from the Herschel Infrared Observatory. This telescope, sometimes just called Herschel, orbits the Sun about a million miles from the Earth.

The meeting began with dinner at Karl's house. Karl charred chorizo on the backyard grill while the airplanes dribbled into Dulles airport. Our colleagues arrived, jetlagged and yawning, from Germany, Sweden, and Spain, and we sat on Karl's couches catching up on the latest gossip. The unemployment level in Spain is about 20%, so research funding there is hard to come by these days. That's not nice to hear. But it cheered us up to be with old friends.

The meeting commenced the next morning, as the vast fields of ice and rock continued to spin—shards glinting in the starlight. Or maybe they didn't. Maybe they didn't exist at all.

You see, this team is looking at a series of images of stars taken by a device called a bolometer that is blind to ordinary starlight. Instead, the bolometer inside Herschel senses infrared light, a kind of light that we would probably refer to as heat if we could feel it. But the idea of pointing the bolometer at the stars was not to collect ordinary starlight. It was to measure heat coming from the vicinity of these stars, like an infrared security camera, in case there was something else to be found lurking nearby. And lo and behold, for a handful of stars, the bolometer measurements were off the charts! Maybe something was orbiting these stars. From the details of the bolometer readings—which channels lit up and so on—you would guess that this stuff took the form of majestic fields or rings of icy and rocky particles. It would be a new kind of disk, a discovery worth writing home to Madrid about.

There are several teams of astronomers analyzing data from the Herschel Space Telescope. They call themselves by oddly inappropriate sounding acronyms: GASPS, DUNES, DEBRIS. For the time being, the scientists on these teams are the only ones

with access to the Herschel data. But in January, all the data these teams are working on will suddenly be released to the public. So they are all under pressure to finish their work by then. The team whose meeting I was sitting in on would like to publish a paper about the new disks by then.

But it's not so simple. The stars that this team had measured were relatively nearby as stars go, less than a few hundred light years. But the universe is big, and full of galaxies of all kinds—a sea of galaxies starting from maybe a hundred thousand light years away, and stretching on and on. Maybe one of those background galaxies was lined up with each of the stars that had lit up the bolometer—fooling us into thinking they were seeing disks around these stars.

The team argued and paced, and then broke for lunch. We marched to the cafeteria through the rain. Meanwhile, vast fields of marble-sized chunks of ice and rock spun slowly in the darkness. Or maybe they didn't.

What else did Herschel recently uncover? Find out at <http://spaceplace.nasa.gov/comet-ocean>.

- *Dr. Marc J. Kuchner is an astrophysicist at the Exoplanets and Stellar Astrophysics Laboratory at NASA's Goddard Space Flight Center. NASA's Astrophysics Division works on big questions about the origin and evolution of the universe, galaxies, and planetary systems. Explore more at <http://www.science.nasa.gov/astrophysics/>.*

Caption: Samuel Pierpoint Langley, who developed the bolometer in 1878. His instrument detects a broad range of infrared wavelengths, sensitive to differences in temperature of one hundred-thousandth of a degree Celsius. In 1961, Frank Low developed the germanium bolometer, which is hundreds of times more sensitive than previous detectors and capable of detecting far-infrared radiation.



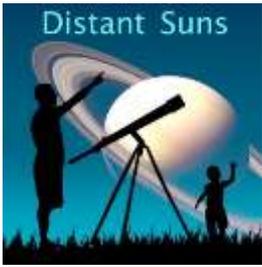
The New Moon may become kids' favorite Moon phase after they have done the new Cookie Moon activity on NASA's Space Place. That's because they get to lick off all the creme filling on an Oreo® cookie. This is a fun way for kids to learn why the Moon has phases and why it looks the way it does throughout the month—not an easy concept for anyone! This activity will be a sweet experience for all! Go to <http://spaceplace.nasa.gov/oreo-moon>.



More free publicity - SkySafari now publicizes your events!

Publicity for your events is becoming easier and easier! SkySafari is the latest mobile astronomy app (it's a planetarium in your pocket!) to include your public events. All you have to do is post your upcoming events on the Night Sky Network public calendar and they automatically appear on all versions of the app. Check the app's Help menu for "Local Astronomy Events." SkySafari is available

for Android and the iPhone, iPad, and iPod Touch.



The **Distant Suns** planetarium app also lists Night Sky Network club events. Tap on "Events" in the navigation bar. Distant Suns is available on iPhone, iPad, Kindle, and NOOK.

Win a chance for a free copy of SkySafari Plus or a Sunspotter just by posting at least five of your club's 2013 public events by the end of November.

Astrobyte

Refer your visitors to the NASA Night Sky Network on Facebook and Twitter so your visitors will keep the excitement of learning about the sky. People usually want to know what's up in the sky, so refer them to NSN especially if your club doesn't have time to dedicate to social media.



"I greatly appreciate your posts. For the first time, I went to the monthly Night Sky at a science center, and she only showed constellations in the IMAX planetarium. She never mentioned which planets would be visible this month and certainly not a meteor shower. Thank you for your ongoing information!"

Facebook fan, Night Sky Network

Nominations Open - ASP's Las Cumbres Outreach Award

Do you know someone in your club who is a rock star at outreach? Nominate an outstanding amateur astronomer for ASP's Las Cumbres Outreach Award by January 1, 2013. The 2012 winner is Chuck McPartlin, outreach coordinator of the Santa Barbara Astronomical Unit. Read more.

Wishing you clear skies and oodles of outreach,

Marni Berendsen, Jessica Santascoy, & Vivian White, The Night Sky Network Team

nightskyinfo@astrosociety.org

The NASA Night Sky Network is a nationwide coalition of nearly 400 amateur astronomy clubs. The NASA Night Sky Network is managed by The Astronomical Society of the Pacific.



SWFAS Minutes

Meeting Date: July 5, 2012

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, July 5, 2012. The meeting convened at 7:30pm, President Brian Risley presiding, and Bruce Dissette filling in for Kathleen Hendrix, secretary.

MEMBERS IN ATTENDANCE: There were approximately 14 members and visitors in attendance.

OPENING REMARKS: Brian Risley, President, welcomed new member Tom Woosham from Estero. Carol Stewart has donated a magnetic sun and solar system to CNCP. Night

Sky Network offers a tool kit for the Mars globe. NSN dues are due July 8. We will be participating in the Cape Coral Parks and Recreation's Park Day July 28th. Remember to celebrate Moon Night September 22, the first day of Autumn.

VICE PRESIDENT'S REPORT: Bruce Dissette, Vice President, reported that there were 12 in attendance at the recent Caloosahatchie Star Party

NEWSLETTER EDITOR'S REPORT: Carol Holmberg, no report

SECRETARY'S REPORT: Secretary, Kathleen Hendrix, not present

TREASURER'S REPORT: Treasurer Tony Heiner reported a balance of \$ 2384.21

VIEWING COORDINATOR'S REPORT: Viewing Coordinators, Chuck Pavlick, and Tony Heiner, no report

LIBRARIAN'S REPORT: Librarian Maria Berni reported a new book on the Creationist View of Hubble.

EQUIPMENT COORDINATOR: Equipment Coordinator Brian Risley mentioned that the 8", 60mm, and 4 1/4" telescopes are on line.

PROGRAM COORDINATOR: The position of Program Coordinator remains open.

EVENING PROGRAM: Elric Richter gave a presentation on "Living Tarantula."
Carole Holmberg spoke on "30 Doradus: Birthplace of giants and dwarfs"

ADJOURNMENT: Thursday, August 2nd was set as the next regular meeting. The meeting was adjourned.

SECRETARY Bruce Dissette filling in for Kathleen Hendrix

Meeting Date: August 2, 2012

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, August 2, 2012. The meeting convened at 7:30pm, President Brian Risley presiding, and Kathleen Hendrix, secretary.

MEMBERS IN ATTENDANCE: There were approximately 17 members and visitors in attendance. New members and visitors were welcomed.

OPENING REMARKS: Brian Risley, President, announced that unfortunately star parties have been canceled due to weather. The next one is August 18. Tony Heiner, Carol Stewart, and Brian Risley attended the Cape Coral event which was well attended until it was rained out. Be sure to look for Perseus showers in the night sky August 12. Also check out the lunar landing on the Science Channel Mon Aug 6th at 10:00pm

VICE PRESIDENT'S REPORT: Bruce Dissette, Vice President, no report.

NEWSLETTER EDITOR'S REPORT: Carol Holmberg, no report

SECRETARY'S REPORT: Secretary, Kathleen Hendrix (submit for approval)

TREASURER'S REPORT: Treasurer Tony Heiner reported a balance of \$1934.21.

EVENING PROGRAM: Carol Stewart gave a presentation on the Lunar Rover, "Curiosity." This project's goal is to further explore the possibility of life on Mars past and future. View images of descent on NASA.gov.

CLOSING REMARKS, ANNOUNCEMENTS: Next month's program is still open.

ADJOURNMENT: Thursday, Sept 6, 2012 was set as the next regular meeting. The meeting was adjourned.

SECRETARY, Kathleen Hendrix

Meeting Date: September 5, 2012

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, September 5, 2012. The meeting convened at 7:30pm, President Brian Risley presiding, and Bruce Dissette filling in for Kathleen Hendrix, secretary. There were 10 members in attendance.

OPENING REMARKS: Brian Risley, President, welcomed new members, Ron Madl, of North Central Kansas, and Mary Rawl, CPC's new executive director. A proposal was made to CNCP for Solar observation and presentation on hot white light. The cost is \$800. Funding will be decided. Coming events include Ding Darling days October 14, Scouting event Oct 19, and a special Planetarium event September 22

VICE PRESIDENT'S REPORT: Bruce Dissette, Vice President reported CRP observations planned for Tuesday October 1, January 22 and 23, 2013, and February 19 and 20, 2013

NEWSLETTER EDITOR'S REPORT: Carol Holmberg, Newsletter Editor

SECRETARY'S REPORT: Bruce Dissette filling in for Kathleen Hendrix

TREASURER'S REPORT: Tony Heiner reported a balance \$1974.22. A detailed report is available on request.

VIEWING COORDINATOR'S REPORT: Viewing Coordinators, Chuck Pavlick, and Tony Heiner report that weekend viewings may be cancelled due to weather.

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

CLUB HISTORIAN: Club Historian Danny Secary, no report.

EQUIPMENT COORDINATOR: Equipment Coordinator Brian Risley, reported that there is a need for a 7-970 IOMN.

WEBSITE COORDINATOR: Website Coordinator Dan Fitzgerald, no report.

PROGRAM COORDINATOR: This position is available.

EVENING PROGRAM: Exotic Planets

ADJOURNMENT: Thursday, October 4, 2012 was set as the next regular meeting. The meeting was adjourned

Future Events

CALUSA NATURE CENTER PLNTRM	11-1-12	7:30 PM	TELESCOPE RENAISSANCE NIGHT
Oak Hammock Middle School	11-3-12		Lee County Schools Super Science Saturday
CALOOSAHATCHEE REGIONAL PARK	11-10-12	DUSK	STAR PARTY
CALUSA NATURE CENTER PLTM	11-17-12		TELESCOPE OBSERVING/Jupiter presentation
CALUSA NATURE CENTER PLTM	12-6-12	7:30 PM	MONTHLY MEETING
CALOOSAHATCHEE REGIONAL PARK	12-15-12	DUSK	STAR PARTY

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