Sonoma Skies

Newsletter of the Sonoma County Astronomical Society

A nonprofit scientific and educational organization

www.sonomaskies.org

January 2008 Volume XXXI No. 1

President's Message

Happy New Year Everyone!

I hope we all had a wonderful Holiday season, keeping warm and dry with friends and family. Did you get that new telescope you wanted Santa to bring? If so, come to the next meeting and let us know all about it!

Speaking of the next meeting, we will be having our customary SCAS year end recap and look ahead to 2008 program. I would like to see you all come and share your own stories, images or what have you to share, but especially hope that you will participate in our program by bringing your ideas for what you would like to see SCAS do and be this year.

Think of this as a particularly participatory meeting, and get involved. It's much more fun that way!

We begin the new year with most of our officers from last year still serving. Bless their hearts for volunteering their time. I thank them all for their helpful attitudes and efforts. The one member we have lost is our faithful secretary, Loren Cooper who finds he can no longer devote the time to this important position.

In his stead, I would like you all to welcome new member Jerry McBride who has stepped in to fill the secretary's shoes. Thank you, Jerry! Jerry has been our website editor for *sonomaskies.org*, and in case you haven't looked lately I encourage to explore the many improvements he has made to our lovely site. He is keeping it updated with a lot of current and changing information relating to our club.

Thank you again to all our returning board members, and for your overwhelming support for yours truly for re-electing me as your President. We simply overwhelmed the competition, didn't we?! Seriously, I am honored to serve such a nice group of folk. Hope to see you next meeting!

Young Astronomers See page 6

SCAS 2007 Wrap-up, 2008 Wish List

SCAS January 9 Meeting, 7:30 PM
at Proctor Terrace School

2007 was a great year, with innovations on our website, two active and fruitful seasons of school star parties, the awarding of Striking Sparks telescopes, great speakers at the meetings, and much more. Len Nelson will take us on a tour of the highlights of last year with a PowerPoint presentation. Your picture might just be included!

Bring your photos and stories to share with fellow members.

John Whitehouse and Lynn Anderson will join Len to discuss what's in the stars for 2008 and lead a discussion on what members would like to do. In the past our club has focused primarily on public outreach and speaker events, but we can add to that.

One new member has been asking for a "beginning astronomy" observing series, and some of us have been itching for a monthly members-only dark sky observing night. The fact that many members are also docents with the Ferguson Observatory has presented a conflict in this area.

The easiest way to work out a schedule for observing (and mentoring new astronomers) is if we are all present at the January meeting.

And that's only one idea—our members have many and varied levels of interest. Please bring your thoughts and suggestions so that we can formulate an enriching plan for all of us for the coming year. Below is some of what we already have planned. Come help us give ourselves the gift of an exciting astronomy club. Hope to see you there!

Coming to SCAS in 2008

Feb. 13: **"Space Junk"** with Linda Williams, Astronomy Dept., SRJC

Mar. 12: **"Adaptive Optics in Astronomy"** with Scott Severson,, Assistant Professor, Sonoma State Physics & Astronomy Dept.

Apr. 9: **"Star Maps: History, Artistry, and Cartography"** with Nick Kanas

Sonoma County Astronomical Society (SCAS)

Membership Information

Meetings: 7:30 PM on the second Wednesday of each month, in the Multipurpose Room of Proctor Terrace Elementary School, 1711 Bryden Lane at Fourth Street, Santa Rosa, unless otherwise announced in this publication. The public is invited.

Dues: $25, renewable June 1 of each year. New members joining between December 1 and May 31 pay partial-year dues of $12.50.

Star Parties: See the Events section for dates and times.

Rental Telescope: Members are eligible to borrow the club's 80mm refractor with tripod. Contact any Board member listed below.

Egroup URL: Connect with other members about going observing, observing reports and chat about astronomy and news items from AANC and *Sky & Telescope.* Hosted by Robert Leyland at *r.leyland@verizon.net*. Any SCAS member is welcome to join. Visit *http://groups.yahoo.com/group/scas* and click the "Join" button, or send an email to *scas-subscribe@yahoogroups.com*

Discount Subscriptions: For ***Sky & Telescope***, new subscribers may send a check for $32.95 payable to "SCAS", with your complete mailing address, directly to: Larry McCune, 544 Thyme Place, San Rafael, CA 94903. Once you have received the discount rate, you may renew your subscription by sending your personal check with the renewal notice directly to Sky Publishing. Discount subscriptions to ***Astronomy*** Magazine occur annually in October. Check *Sonoma Skies* for details.

Library: SCAS Librarian Joan Thornton hosts a library of astronomy books that may be checked out by members at SCAS meetings, to be returned at the next meeting. Videotaped lectures on astronomy may be rented for $3 per month.

Sonoma Skies is the monthly newsletter of the Sonoma County Astronomical Society (SCAS). Subscription is included as part of membership. Articles and member announcements are welcome and are published on a first come, first served basis, space permitting, and may be edited. **The deadline for submissions is 10 days prior to the end of each month.** Mail to: Editor, SCAS, P.O. Box 183, Santa Rosa, CA 95402, or email *publications@sonomaskies.org*

SCAS Elected Board

President: John Whitehouse 539-5549 *jmw@sonic.net*
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SCAS Appointed Positions

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Visit us on the web at:
www.sonomaskies.org

January Observing Notes

1/3 Quadrantids Peak 11 PM. Conditions are very favorable. This should be a good display.

1/5 Crescent Moon very near Antares and near Venus, 6:30AM. 8% crescent moon low in SE in morning twilight.

1/7 Algol Minimum 1 AM

1/8 New Moon 3:30 AM

1/14 Mercury in West, 5:30 PM. Mercury is viewable low in the west after sundown until about 1/24. Begin looking at about 5:45 PM.

1/17 Occultation of 18 Tauri 10:30 PM. Magnitude 5.7 18 Tauri disappears behind the dark limb at about 2233. Moon alt/az = 56/257. At midnight, a magnitude 6.4 star will do the same.

Moon near M45 11 PM

1/19 Moon very near Mars, 4 PM. Daylight conjunction. Mars is slightly south of the moon. Keep watching after dark as the moon remains near Mars.

Occultation of 136 Tau, 9 PM. Magnitude 4.6 136 Tauri disappears behind the dark limb of the Moon at about 2104. Moon alt/az = 73/124. Earlier, a Mag. 5.6 star does the same at about 2009. Later, a Mag. 6.0 star does the same at about 0104.

1/20 Occultation of 39 Gem, 9 PM. Magnitude 6.2 39 Gemini disappears behind the dark limb at about 2110. Moon alt/az = 62/107.

1/21 Mercury at greatest elongation east, 9 PM. A moderately good evening apparition, viewable low in the west from about 1/14 to 1/24.

1/24 Moon very near Regulus & near Saturn, 5 AM. The moon is closest to Regulus at 0700.

Moon near Saturn, 10 PM.

1/30 Mars stationary 1 PM in Taurus. End of retrograde motion.

Possible Asteroid impact on Mars 2:56 AM—see story on back page.

Algol Minimum, 11:30 PM.

—Most of above courtesy of Jack Welch

2008 Calendars and Observer's Handbooks Available

There are still a few copies of these gems available: the 2008 Royal Astronomy Society of Canada (RASC) Astronomy Calendars and Observer's Handbooks, and the 2008 Ottewell Astronomical Calendar. Price is $9.50 for the RASC Calendar, $17.00 for the Observer's Handbook and $20.75 for the Ottewell Calendar.

If you're new to astronomy, at least get the *Observer's Handbook*. There's a great deal of information packed into that little book.

You can pick up your copies at the January meeting from Lynn Anderson and Len Nelson.

Sparks Update

The 2008 Striking Sparks Telescope Program is moving forward. We have purchased the 6-inch Dobsonian telescopes from Orion Telescope in Cupertino and have secured the sponsors. Sam Sweiss of Scope City has contributed planispheres, penlights and lens cleaning kits to get the winners off to a good start. We appreciate the participation of our sponsors, Orion and Scope City that make the 23rd year of the Sparks program possible.

The student essays are due to be submitted by January 19, 2008 and the awards will be made at the February 8, 2008 Young Astronomer meeting at Apple Blossom School in Sebastopol. We also appreciate the tireless efforts of Gary Jordon and Paul Judge, the adult leaders of the Young Astronomers.

—Larry McCune, Striking Sparks Coordinator

For Sale: Criterion 6" reflector

I recall seeing this scope advertised back when I was rather young. Gosh, how I wished I had $200 to buy one of these beauties.

But, I simply could not afford anything like that and decided to build my own instead. I ground my mirror at the Adler Planetarium in Chicago, made my own mount of pipe fittings, and purchased affordable eyepieces, rack and pinion eyepiece holder & spider diagonal. I loved that scope and got a lot of use out of it. I'm sure I learned a lot more by making my own than from buying one ready made but if I'd have had the money I'd surely have bought this baby. The scope I made I sold to a fellow class mate in high school and then we moved and I went to another school district. I learned later that this fellow entered it into a science fair and was pictured in the local newspaper with the caption "And He Made It Himself!"

Now, the Criterion reflector was given to me, as an SCAS representative about 5 years ago. Unfortunately, I lost the info on who the donor was. But the scope was in somewhat sad shape. The mount was rusty, the tube paint nicked and faded, etc. but I decided to take it apart, clean it and make it available for sale by the SCAS. But it took me far longer to do this than I imagined. I made a decision to get it out of my garage this fall and here it is available for sale to the highest bidder at the January 2008 meeting. It comes with 2 Criterion eyepieces. The clock drive works but needs some adjustment. If you have a home for this scope, plan to bring it home with you January 9th.

—Len Nelson

Social Amenities

Many thanks to Keith Payea for providing delicious holiday treats and coffee at the December meeting.

Welcome New Members!

Welcome to new member Jerry McBride of Cloverdale who has been our webmaster for the past two years and is now also the board's new Secretary. Also, welcome back to Alan Loceff.

Interesting Link

The math behind map projections, both terrestrial and celestial:
http://mathworld.wolfram.com/topics/MapProjections.html

Scope City

New Member Bonus!

- Scope City at 350 Bay Street, San Francisco, is offering a **$25 merchandise discount to new members**.
- Manager Sam Sweiss has supported SCAS and Striking Sparks and offers a huge selection of telescopes, accessories and more. Obtain a receipt from Walt Bodley, Membership Director, showing you have paid the $25 SCAS membership dues. To arrange for your merchandise discount, contact Sam at 415/421-8800 or at *sanfrancisco@scopecity.com*

Events

Robert Ferguson Observatory
PUBLIC VIEWING

Saturday, January 12
Solar Viewing: 11:00 AM - 3:00 PM
Night Viewing begins 7:00 PM

The Observatory features three telescopes: A 14-inch SCT with CCD camera in the East wing, an 8-inch refractor under the dome and a 24-inch Dobsonian in the West wing. SCAS members may set up telescopes in the observatory parking lot to assist with public viewing. Auto access closes at dusk; late arrivals must carry equipment from the horse stable parking area.

Fees: No admission fee for the solar viewing, but donations are appreciated. The Park charges $6 per vehicle for entry. A $3 donation is requested from adults 18 and over for admission to the observatory during night viewing sessions.

NIGHT SKY SPRING SERIES

Session #1—Monday, Jan. 28
Session #2—Monday, Feb. 4

Classes held Mondays at 7PM. Each class includes a lecture on the constellations of the season, their history and mythology, and how to find objects within them. **Fees:** $75 for the series of six presentations. (Single session fee is $23). 10% discount for VMOA members. Classes are held at the Observatory.

For information or to register: (707) 833-6979, *http://www.rfo.org* or *nightsky@rfo.org*

OBSERVING LAB

"Star Birth (Winter)"—Sunday, Feb. 3

"Diffuse Nebulae, Star Formation, and Open Clusters" - An intensive telescope observing session after a brief presentation on the night's theme. Handouts/Observing Lists provided. Attendance limited to 6. Fee: $30. [Rain check date: Wed., 2/6] Two sessions per year with different observing lists. Lab begins 6:30 PM. Raincheck date: Feb. 6.

For reservations, email: *nightsky@rfo.org*

RESERVE THE FERGUSON OBSERVATORY!

Groups of up to 50 can be accommodated. Astronomer docents provide sky interpretation and operate telescopes, and you can stay up as late as you want! Make your reservation at least two weeks prior to your event. Best times for optimal sky gazing are any time more than a week away from a Full Moon.

In addition to $111 charged by the RFO for use of the observatory facilities, the State Park System charges $111 for use of the *Group Campground*. Because it is adjacent to the Observatory, the group camp must be reserved for private events. Total Cost: $222. For information on how to reserve, visit *www.rfo.org* or contact George Loyer at *gloyer@rfo.org*.

SRJC Planetarium

"Friendly Moon, Lucky Us"
January 25 to March 2

Other than the Sun, the Moon is the most noticeable object in our sky. Where did it come from? why does it appear as it does? And, what does it mean to us? We answer these questions and more as we learn about our nearest neighbor in space.

Shows are held at Santa Rosa Campus, Lark Hall, Room 2001, on Fridays and Saturdays at 7:00 PM and 8:30 PM, Sundays at 1:30 PM and 3:00 PM during the Fall and Spring semesters. Admission is $5 General; $3 Students and Seniors (60+). Tickets are sold at the door only, beginning 30 minutes before show time. A parking permit is required and is included in the Planetarium admission price. Pick it up at the planetarium when you pay admission. Please arrive early enough to place your permit on your vehicle's dashboard before the show starts.

Info: 527-4372, *http://www.santarosa.edu/planetarium/*

Morrison Planetarium
Dean Lecture Series

Jan. 14, 7:30 PM: "Star Dust: The Cosmic Seeds of Life"—Dr. Sun Kwok, University of Hong Kong (author of the book "Cosmic Butterflies")

For the last fifty years, scientists believed that life on Earth began with simple inorganic molecules that, under proper conditions, gradually evolved into complex organic compounds and eventually life. Recently, through observations with space-based infrared telescopes, astronomers have discovered that old stars can synthesize organic compounds over relatively short time scales. Stellar winds then spread these organic materials throughout the Galaxy, including our primordial solar system.

Location: Kanbar Hall, Jewish Community Center, 3200 California Street (at Presidio). Parking in the UCSF Laurel Heights campus parking lot is $1.25/night. Parking in the JCC garage is $1.25 per half-hour. Tickets $4 at the door or by email. Contact: 415/321-8000.

http://www.calacademy.org/planetarium/dean.php

Events

Upcoming School Star Parties: January-March 2008

As we count up who done what in 2007, we have 2008 to look forward to.

January is a quiet month, with only one potential (but not yet on the schedule) star party at Woodland Star Charter School in Sonoma, most likely during the week of January 7th.

February has four star parties on the calendar. The first is on Friday, February 8th at Monte Rio Elementary. Unfortunately, this is also the date for the awarding of the SPARKS telescopes, so recruiting may pose a problem.

Other February events are the annual Astronomy Night at Windsor Creek Elementary School on Thursday the 21st, Sequoia Elementary in Rincon Valley on Tuesday the 26th and Evergreen Elementary (Rohnert Park) on Friday the 29th.

There is one event scheduled in March on the Friday prior to the "New" start of Daylight Savings Time—March 7th. Until this date, school star parties will be from 7:00 to 9:00. After the beginning of DST we will start at 8:00 and go until 9:30.

If you have time to donate, please contact Lynn Anderson at *astroman@sonic.net*. Remember, you don't need to have a telescope to be of help at a school star party. People who are available to answer questions, give sky tours or help keep the lines organized are always appreciated.

Silicon Valley Astronomy Lecture Series

Jan. 23, 7:00 PM: "The View from the Center of the Universe: Discovering Our Extraordinary Place in the Cosmos"—Astronomer Joel Primack of UC Santa Cruz and Philosopher and Attorney Nancy Abrams

Remarkable discoveries in the last decade are transforming "cosmology," the study of the universe as a whole. Our cosmos appears to be made mostly of dark matter and dark energy, with the stars and galaxies we can see making up only a tiny fraction of it. We are beginning to understand the first few minutes after the Big Bang and the way in which the structure of the universe arose.

The program is both a progress report and philosophical reflection on our modern view of ourselves and our place in the cosmos. Using the latest science, cosmic images and visualizations, plus music, themes from myth, and even cartoons, they will illustrate how the new ideas about the universe have widespread cultural implications.

Of Note: Previous lectures now available in MP3 format at: *http://www.astrosociety.org/education/podcast/index.html*

Location: Foothill College's Smithwick Theater, El Monte Road and Freeway 280, Los Altos Hills. Parking on campus costs $2. Call the series hot-line at 650-949-7888 for more information and driving directions. Free and open to the public.

2007 Community Activities in Review

We hosted 12 astronomy education star parties and gave 13 PowerPoint slide shows during 2007. Schools served include Piner, Meadow School, Willowside, Windsor Creek, Evergreen, Hidden Valley, Fitch Mountain, and Old Adobe elementary schools, as well as Rincon Valley Middle School and Windsor High School. Non school groups include three groups of Cub Scouts, the Common Bond Language Camp in Sonoma, the Children's Village and a private group as part of an auction offering that raised money for the Children's Village.

Nineteen of our members donated time to provide their telescopes and enthusiasm for astronomy at these events. Special thanks go out to the following members, who participated in five or more of these events. Those individuals are Merlin Combs, Len Nelson, Loren Cooper, Lynn Anderson and Frank Siroky. Others who found time to donate at two or more events are Walt Bodley, Dickson Yeager, Dan Gunyan, David Simons, Emilio Ricci, John Whitehouse, Alan Karbousky and Sean Jean. We also want to thank those members who were able to attend one of the star parties—Alan Stern, Tim Slater, Bruce Lotz, John Jaffray, Steve Alvarez and Ben Barker.

For those of you who have thought about getting more involved in club activities, school star parties provide an excellent opportunity. You don't need to have a telescope to participate. We have been encouraging more and more schools to utilize a scavenger hunt list of astronomy target types and some non viewing questions to be answered. We can always use volunteers to be available to sign off these student lists, answer general astronomy questions, give sky tours or just to help organize the lines. All help is appreciated. To get your name on the star party volunteer email list contact Lynn Anderson at astroman@sonic.net.

Exploratorium

Watch online as the Exploratorium Ventures to the Bottom of the World Jan. 4, 11&12, 18 and 25

In celebration of the International Polar Year (2007-2008), the Exploratorium's webcast crew will be talking with scientists at McMurdo Station and the South Pole about the myriad of research being done there. Meet scientists pulling giant cores of ice from miles down, watch as penguins dive under the ice, and see scientists reach for the sky with their weather balloons! Learn about the giant trap under the ice that catches the tiniest particles from outer space, and a new 10-meter telescope at the South Pole.

These programs and webcasts will be shown online at *www.exploratorium.edu/icestories* and at the Exploratorium's Phyllis C. Wattis Webcast Studio in San Francisco. Past webcasts can be found at the above link.

Young Astronomers

Come Over to the Dark Side…of Matter and Energy!

YA Meeting Friday, January 11, 7:30 PM
Apple Blossom School, Sebastopol

If you've read anything about astronomy in recent years, you know much is being written about the mysterious affects of dark energy and dark matter on the structure of the universe. What significant roles do dark matter and dark energy play in the evolution of the universe? If they are "dark", how do we know they even exist? Who predicted their existence? What evidence have we found of their true nature?

Join us on Friday, January 11 at 7:30 PM at Apple Blossom school in Sebastopol, as we explore these and other intriguing questions about the "Dark Side" of astronomy...Dark Matter and Dark Energy! As always, please bring your telescope for viewing after the general meeting, weather permitting. See you in the New Year!

December 14 YA Meeting Report

by Max Eliaser

Sadly, it had to happen eventually. Beginning with the New Year, Melissa Downey is no longer our YA president. She's moving on to complete her college education at U.C. Santa Cruz. As her final gift to YA, Melissa gave an awesome presentation about exoplanets, planets that orbit stars other than our own.

It turns out that exoplanets can be supremely strange, such as a planet ten times the size of Jupiter orbiting its star in just one earth day! In fact, even the largest exoplanets (such as gas giants) were once considered impossible to find, until scientists developed the tools and techniques to find them. After that, rocky planets and multi-planet systems (besides our own) were considered impossible to find. However once again, astronomers developed the tools and techniques to find them. Given this track record of finding the impossible, you never know, we might soon discover little green men living on these exoplanets! But I digress.

Melissa did an excellent job of describing the types of exoplanets discovered so far, and the techniques astronomers have used to discover them. In presenting an overview of the 200-plus confirmed exoplanets, Melissa opened our eyes to this cutting-edge branch of astronomy, the quest to find Earth-like planets capable of supporting life.

To mark the poignant occasion of Melissa's departure, the Sonoma County Astronomical Society presented her with a customized green laser pointer with her name and a special message engraved on it. Several people made speeches thanking Melissa for her outstanding service, and a comet even got bigger than the sun, just to give her a proper send-off. Once again, thank you Melissa!

The Aurora Borealis

by our YA Editor, Max Eliaser

The Aurora Borealis is certainly one of the most stunning phenomena known. Most people think of it as a psychedelic display of light, with rippling curtains and shimmering, glowing, mind-blowing smears of color. This type of Aurora is the most easily observed, and the one we understand best.

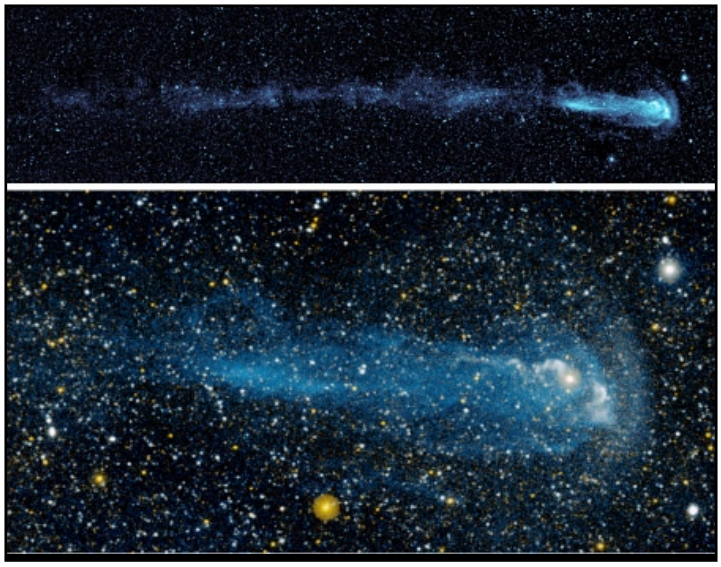
All Auroras begin when the solar wind hits Earth's magnetic field. But where does Earth's magnetic field come from? First, let's consider how humans can generate electricity or magnetic fields mechanically. Dynamos generate electricity by having a magnetic field move rapidly relative to an electrical conductor. The best way to do this is by having a magnet spin inside a coil of copper wire. Conversely, making electricity move rapidly relative to a ferrous metal, like iron, may generate magnetism.

Our planet's core is mostly iron. Iron is both magnetic and conductive. Basically, our Earth is a huge magnetic field and electric field generator. Although spinning a large blob of impure molten iron is one of the least efficient ways of generating electricity, Earth's core is huge, and it's moving thousands of miles per hour. The huge electric current generated by the core then fuels an equally huge magnetic field around Earth.

Remember that magnets can move electrically charged objects just as well as they can move other magnets, and that electric currents can move magnets just as well as they can move other electric currents. Well, the solar wind is electrically charged, so naturally it is affected by the Earth's magnetic field. This is a good thing, as it prevents almost all of these minuscule, but extremely fast subatomic bullets (technically known as "charged particles") from reaching us. If this didn't happen, they would slam into our cells and cause molecular damage, especially to our DNA (always wear sunscreen!).

Most of these charged particles are deflected off to either side of the Earth and continue on a slightly altered course. However, as everyone knows, magnets have north and south poles. A minority of the charged particles from the solar wind are funneled down the magnetic field lines to the north or south magnetic poles of the Earth. When they encounter the upper atmosphere, they collide with atoms and cause them to heat up so much that they glow. (Actually, they cause electrons to jump to higher energy states and then jump back, releasing photons as they go, but it amounts to the same thing.) It's these glowing atoms which we see when we see an Aurora Borealis.

This explains why they are usually only seen at either end of the Earth. This also explains the beautiful patterns: the charged particles are revealing the constant motion of Earth's magnetic field lines, just like iron filings reveal the field lines of a refrigerator magnet.



Astronomers looking at new ultraviolet images from the Galaxy Evolution Explorer spacecraft were surprised to discover a 13-light-year long tail on Mira, a star that has been extensively studied for 400 years.

NASA SpacePlace

Ultraviolet Surprise

by Patrick L. Barry and Tony Phillips

How would you like to visit a universe full of exotic stars and weird galaxies the likes of which astronomers on Earth have never seen before?

Now you can. Just point your web browser to *http://galex.stsci.edu/GR2/* and start exploring.

That's the address of the Galaxy Evolution Explorer image archive, a survey of the whole sky at ultraviolet wavelengths that can't be seen from the ground. Earth's atmosphere blocks far-ultraviolet light, so the only way to see the ultraviolet sky is by using a space telescope such as NASA's Galaxy Evolution Explorer.

About 65% of the images from the all-sky survey haven't been closely examined by astronomers yet, so there are plenty of surprises waiting to be uncovered.

"The Galaxy Evolution Explorer produces so much data that, beyond basic quality control, we just don't have time to look at it all," says Mark Seibert, an astronomy postdoc at the Observatories of the Carnegie Institution of Washington in Pasadena, California.

This fresh view of the sky has already revealed striking and unexpected features of familiar celestial objects. Mira is a good example. Occasionally visible to the naked eye, Mira is a pulsating star monitored carefully by astronomers for more than 400 years. Yet until Galaxy Evolution Explorer recently examined Mira, no one would have guessed its secret: Mira possesses a comet-like tail 13 light-years long.

"Mira shows us that even well-observed stars can surprise us if we look at them in a different way and at different frequencies," Seibert says.

Another example: In April, scientists announced that galaxies such as NGC 1512 have giant ultraviolet spiral arms extending three times farther out into space than the arms that can be seen by visible-light telescopes. It would be like looking at your pet dog through an ultraviolet telescope and discovering his ears are really three times longer than you thought!

The images from the ultraviolet space telescope are ideal for hunting new phenomena. The telescope's small, 20-inch primary mirror (not much bigger than a typical backyard telescope) offers a wide field of view. Each image covers 1.2 degrees of sky—lots of territory for the unexpected.

If someone combing the archives does find something of interest, Seibert advises that she or he should first search astronomy journals to see whether the phenomenon has been observed before. If it hasn't, email a member of the Galaxy Evolution Explorer science team and let them know, Seibert says.

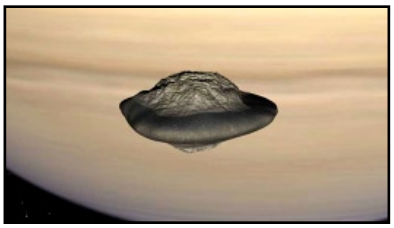
So what are you waiting for? Fire up your web browser and let the discoveries begin!

—Article provided by JPL/NASA

'Flying Saucers' Around Saturn Explained

by Charles Q. Choi for Space.com

The formation of strange flying-saucer-shaped moons embedded in Saturn's rings have baffled scientists. New findings suggest they're born largely from clumps of icy particles in the rings themselves, an insight that could shed light on how Earth and other planets coalesced from the disk of matter that once surrounded our newborn sun.



Saturn's rings orbit the planet in a flat disk that corresponds to the planet's equator. Likewise, Earth and the other planets orbit the sun in a fairly flat plane that relates to the sun's equator. The planets, at least the rocky ones, are thought to have formed when bits of material orbiting the newborn sun stuck together, forming larger and larger objects that collided and coalesced.

Observations by NASA's Cassini spacecraft revealed the Saturnian moons Atlas and Pan, each roughly 12 miles from pole to pole, have massive ridges bulging from their equators

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YA Information

Meetings: 7:30 PM the second Friday of each month of the school year, at Apple Blossom School, 700 Water Trough Road, Sebastopol, in the Multipurpose Hall. Open to all Sonoma County students. Telescope viewing is held in the upper parking lot after the meeting. Directions: From Hwy. 116 in Sebastopol, go west onto Bodega Ave. Continue almost two miles to Water Trough Rd. Turn left and go about 1/3 mile to the school, on your right.

YA ELECTED OFFICERS

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VP/Program Director: Geoffrey Knoll

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Librarian: Open

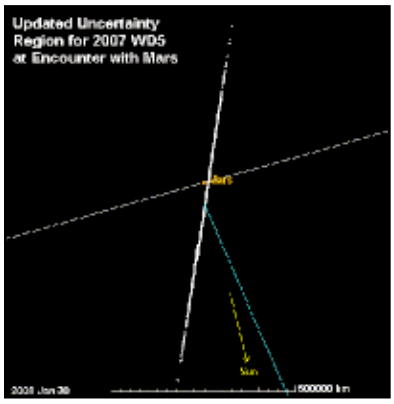
Adult Advisor: Gary Jordan 829-5288, *Sieramolly@comcast.net*

Asteroid aims for Mars Jan. 30

Mars could be in for an asteroid hit. A newly discovered hunk of space rock now has a 1-in-25 chance of slamming into the Red Planet on Jan. 30, scientists said last week.

"These odds are extremely unusual. We frequently work with really long odds when we track...threatening asteroids," said Steve Chesley, an astronomer with the Near Earth Object Program at NASA's JPL.

The asteroid, known as 2007 WD5, was discovered late November, A collision could release about three megatons of energy. Scientists believe an event of comparable magnitude occurred here on Earth in 1908 in Tunguska, Siberia, but no crater was created. The object was disintegrated by Earth's thicker atmosphere before it hit the ground, although the air blast devastated a large area of unpopulated forest.



Uncertainty Region for 2007 WD5 at encounter with Mars, shown as white dots. The thin white line is the orbit of Mars. The blue line traces the motion of the center of the uncertainty region, which is the most likely position of the asteroid. Updated Dec. 28.

Speeding at 8 miles a second, a collision would carve a hole the size of the famed Meteor Crater in Arizona.

In the event of an impact, the time would be January 30 at 10:56 UT (2:56 AM PST) with an uncertainty of a few minutes. For more information, visit: *http://neo.jpl.nasa.gov/*

Saturn's Flying Saucers *(from Page 7)*

their equators some 3.7 to 6.5 miles high, giving them the flying-saucer appearance.

In principle, fast rates of spin might have stretched Atlas and Pan out into such unusual shapes, just as tossing a disk of pizza dough flattens it out. But neither moon whirls very quickly, each taking about 14 hours to complete a rotation. Earth, far bigger, rotates in 24 hours, of course.

Carolyn Porco, a planetary scientist at the Space Science Institute in Boulder, Colo., and her colleagues suspected these peculiar moons could be formed mostly from Saturn's rings, rather than just from fragments produced in collisions of larger moons, as some have suggested. The location of the ridges lined up precisely with the rings of icy particles in which they were embedded.

These findings could shed light on the behavior of "accretion disks"—disks that build up as matter falls toward a gravitational pull. Accretion disks are found everywhere in the universe—around black holes, around stars, around Jupiter. Understanding how the icy particles piled up to make these shapes could shed light on how matter in the protoplanetary disk that accreted around our newborn sun could have clumped together to make planets.

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Sonoma Skies
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JANUARY 9

Len Nelson, Lynn Anderson, John Whitehouse

SCAS 2007 Review, 2008 Wish List