

Sonoma Skies



The Newsletter of the Sonoma County Astronomical Society
a non-profit scientific and educational organization

December 2003

Volume XXVII No. 12

Telescope Raffle Drawing

The telescope raffle got off to a great start at our Nov. 12 meeting, with 179 tickets sold. The prize is a Meade 4.5-inch Newtonian on a motorized equatorial mount. It is intended to be especially suitable for beginning astronomers. The telescope will be available for inspection and **the drawing will be held at the end of the Dec. 10 meeting.** Tickets are \$1.00 each or 6 for \$5.00 and can be purchased from Len Nelson. You do not need to be present to win, but of course it will be more fun if you are. The scope comes ready to use, complete with a videotaped users guide and a hand controller. Such a deal!

Dec. 10:

Science, Art and the Hubble Heritage Project

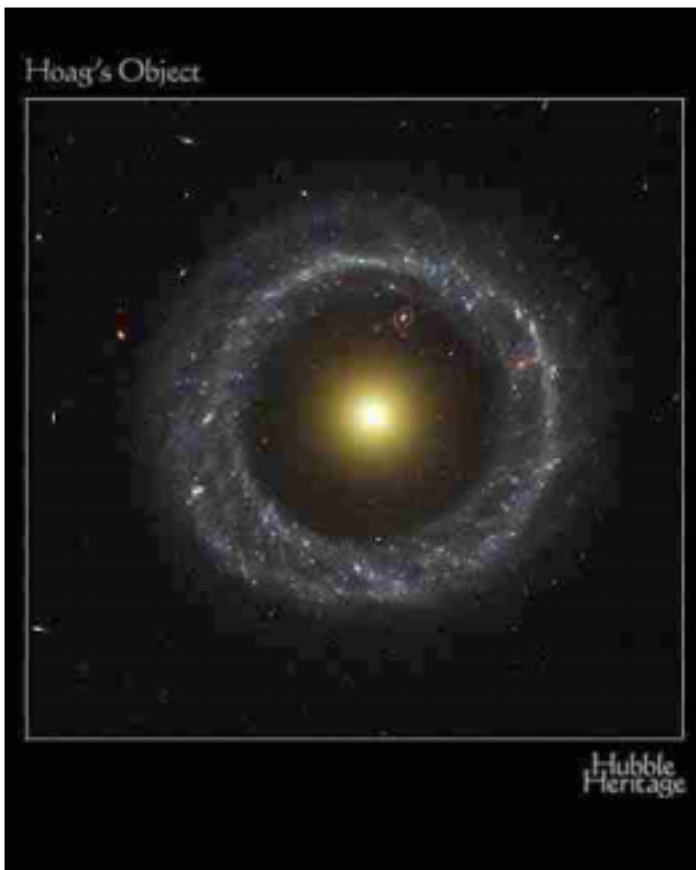
Tiffany Borders, Sonoma State University

The Hubble Heritage Project is responsible for turning Hubble Space Telescope data into works of art - a delicate balance between aesthetics and preserving scientific data. These compelling Hubble images are made available on the web and allow all citizens of the world to appreciate the most perplexing, beautiful, and awe-inspiring glimpses of our universe. Tiffany will discuss how Heritage images are made from HST data.

Tiffany is a senior undergraduate in physics and astronomy at Sonoma State University. During the summer of 2002 she was an intern at the Space Telescope Science Institute in Baltimore, MD. She was in charge of processing images from the Hubble Space Telescope as part of the Hubble Heritage Project team. In the summer of 2003 she worked at the National Radio Astronomy Observatory in Socorro, NM on a research project studying water masers in a high mass star forming region. Tiffany is currently a member of the NASA Education and Public Outreach Team at SSU. After graduating from Sonoma State University, Tiffany will pursue a doctorate in astronomy.

Tiffany was responsible for the September 2002 release of the image of Hoag's Object shown to the left, and described in the story on page 6 of this issue. The Wide Field and Planetary Camera 2 took the image on July 9, 2001. It is posted at <http://heritage.stsci.edu/2002/21/index.html>.

Dec. 10 is SCAS ELECTION DAY. See pg. 7



SCAS Membership, Renewals and Subscription Information

SCAS new membership dues are \$25 from June 1st through November 30th; and \$12.50 from December 1st through May 31st. SCAS annual renewal membership dues are \$25 per year; due and payable on June 1st each year.

SCAS Membership and Meetings

As a benefit of membership, discount subscriptions to *Sky & Telescope* and *Astronomy* magazines are available. Membership meetings take place on the second Wednesday of each month at 7:30 pm in the Multipurpose Room of Proctor Terrace Elementary School on Bryden Lane near Fourth Street in Santa Rosa unless otherwise announced in this publication. Star Parties are meetings held each month at our viewing site on the Saturday evening nearest to the new moon. The Public is invited to both.

New or renewal subscriptions for *Sky & Telescope* through SCAS: send your \$29.95 subscription check (**payable to SCAS**) along with your complete mailing address (for new subscriptions) or the *Sky & Telescope* renewal card and **return envelope** provided by *Sky & Telescope* (for renewals) directly to **Larry McCune, 544 Thyme Place, San Rafael, CA 94903**.

Subscriptions to *Astronomy* through SCAS occur yearly around October. Check *Sonoma Skies* for details.

Rental Telescopes Available

SCAS members are eligible to borrow telescopes for a \$5 per week donation. Four telescopes are available: a Celestron 8" SCT and a 5" Celestron SCT, complete with clock drive and inverter; an 8-inch Newtonian on Dobsonian mount; and a 80 mm refractor on a motorized equatorial mount. Contact Joan Thornton at 707-762-0594.

Access To Palmieri Observing Site

The Palmieri Observing Site is locked to public access. For use during monthly star parties, SCAS members can obtain the combination to the gate lock to the site by contacting any board member listed to the right.

Publication

Sonoma Skies is the newsletter of the **Sonoma County Astronomical Society (SCAS)** and is published each month. Subscriptions to the newsletter are included as part of membership to the Society.

Articles, news items and member announcements for *Sonoma Skies* are welcome. The deadline for articles for the January 2004 issue is January 2. Submissions must be typed or, if on computer media, in a commonly used word processing and/or graphics format, and may have graphics (pictures, drawings, etc.). They are published on a FCFS basis, space permitting, and may be edited.

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Public Star Party Coordinator

Bruce Lotz 576-7833 ablotz@sonic.net

SCAS Library

Joan Thornton 762-0594

phonyjoanie@earthlink.net

SCAS has a library of over 70 books that may be checked out by SCAS members. A book may be checked out until the next meeting or for one month. Requirements to check out a book:

1. Be a SCAS member.
2. Give me (Joan) your name and phone number.

STRIKING SPARKS

by Coordinator Len Nelson

It's that time again! The wheels are in motion to produce ten more 5.75" Newtonian reflectors with Dobsonian mounts. Since the Striking Sparks program was initiated in 1986, the SCAS has constructed and presented 182 Sparks telescopes and with 10 to be presented this year we'll have presented 192.

Now, a correction. After last April's Sparks awards it was thought that we had presented a total of 190 telescopes. However, a thorough review of the program records revealed that this was not quite right. The announced plans for a 200th telescope celebration next May will be deferred one year. SCAS now plans to hold a Striking Sparks Jubilee in the Spring of 2005 to recognize the 200th telescope milestone. The party will be held at the Robert Ferguson Observatory, and all the prior winners of Striking Sparks scopes will be invited to join us.

But, that's next year. Now we have to muster our energies to produce this year's ten scopes. There are many ways to get involved and your participation is welcome and needed. How, you may ask? You can:

Sponsor a Striking Sparks Scope -

Many blessings will be bestowed upon you. Recognition will flow your way. It's all for a good cause and it's tax-deductible too! Sponsorship is \$200 and already four sponsors have come forward.

Figure a Mirror-

Steve Follett has 10 mirrors already roughed out and he may already have them polished on his grinding machines. He will soon arrive at the point where each mirror has to be figured. Ten mirrors is simply too many for him to do alone. Can you help? Are you interested in learning how to figure a mirror? Steve's the man to instruct you in this fine art. His email address is sfollett@sonic.net.

Build the Telescopes-

Larry McCune is busy hand crafting various parts for the scopes. On Saturday, February 7, we will cut and assemble the mounts at Cloverdale High School under Lynn Anderson's able supervision.

The Semi-Sirius Astronomer

by Herb Larsen



"We need to be quiet while Fred is observing. His automatic telescope is searching out interesting celestial objects and digitizing and recording the enhanced images, which he will review on Sunday."

Paint the Scopes - This requires a good level of painting skill and if you have that talent - step forward.

The Striking Sparks Award Event - Many areas require attention at this March 27th event - scope set up, table arrangements, ticketing, photography, coordinating this & that, organizing that & this, food layout, etc, etc. Help at numerous levels is needed.

Call or email me and tell me where you'd like to get involved.

"EVEN THOUGH WE CAN'T HAVE ALL WE WANT, WE OUGHT TO BE THANKFUL WE DON'T GET ALL WE DESERVE"

SCAS "Public" Star Party

Bruce Lotz, Coordinator (707) 576-7833
ablottz@sonic.net

Location: Youth Community Park, located in Santa Rosa on the west side of Fulton Road, between Guerneville Road and Piner Road, just opposite Piner High School. Almanac data for the star party:

Saturday, December 27

Sunset: 4:57 p.m. PST

End Astronomical Twilight: 6:32 p.m. PST

Moonset: 10:02 p.m. PST

SRJC Planetarium

<http://www.santarosa.edu/planetarium/>
(707) 527-4465 or 527-4371

Santa Rosa Campus, Lark Hall, Room 2001

Shows are on Fridays and Saturdays at 7:00 PM and 8:30 PM and Sundays at 1:30 PM and 3:00 PM during the regular Fall and Spring semesters. Admission is \$4 General; \$2 Students and Seniors. Tickets are sold at the door only, beginning 30 minutes before show time. No children under five, please.

A parking permit is now required at SRJC and is included in the Planetarium show admission price. Pick up a parking permit at the planetarium when you pay admission. Please arrive early enough to place your permit on your vehicle's dashboard before the show starts.

Through December 14: Stars Of Christmas

We take an extended look at our winter sky and some of its fascinating stars and deep sky objects. One star not found on any star chart is the Christmas star. We'll look at astronomical events that could have been the Christmas star. We'll also take a traditional look at the only scriptural mention of the star of Bethlehem in the book of Matthew.

Public Astronomy

by Len Nelson
SCAS Community Activities Director
lennelsn@comcast.net (707) 763-8007

School Star Parties - none scheduled until January

SCAS "Geysers" Star Party

Mario Zelaya (707) 539-6423
zelayadesigns@sbcglobal.net

Location: Palmieri Observatory, Mercuryville, CA
(on the slopes of Geysers Peak near The Geysers)

Altitude: ~2700 feet

Longitude: 122deg 49min

Latitude: 38deg 46min

The next scheduled star party night will be December 20, two days before new moon. Dress warmly, and take your Thermos bottles! Please call Mario Zelaya if you plan to attend, especially if you are going for the first time. The almanac data for December 20/21:

Sunset - 4:53 p.m. PST

Moonset - 2:36 p.m. PST

End of twilight - 6:28 p.m. PST

Begin twilight - 5:49 a.m. PST

Chabot Space and Science Center

<http://www.chabotspace.org>
(510) 336-7373

Thursday, December 18, 7:30 pm

Gamma Ray and Neutrino Astronomy:

New Window on the Universe

Astrophysicist Dr. Rick Norman, Lawrence Berkeley NL, will talk on how the birth of our cosmos has recently been revealed in more detail than ever before and how astronomy has changed in the past decade with the new ability of astronomers to view into the "micro" universe presented by gamma rays and neutrinos.

Morrison Planetarium

Dean Lecture Series

<http://www.calacademy.org/planetarium/>
(415) 750-7141

December 16

Dr. Jessica Rosenberg, U. of Colorado, Boulder

"Galaxies and What Lies Between Them"

The universe is filled with tenuous filaments of gas and dark matter with galaxies and galaxy clusters residing at the intersections. Is the gas between the galaxies a reservoir of pristine material still in the process of forming galaxies or is it the refuse of star formation in galaxies? What is the connection between galaxies and these intergalactic filaments?

Spotlight #2 on the Rental Fleet

Once again we show off one of the nice telescopes SCAS has available for rent. This month's scope is an 8-inch Newtonian reflector on a Dobsonian alt-azimuth mount. It uses standard 1.25-inch eyepieces, and comes with two, 12 and 25mm. The scope comes with a Telrad finder, along with the telescopic finder visible in the picture. This looks a lot like a Sparks scope, is equally simple to use and has double the light-gathering capability of the Sparks instruments. Contact Joan Thornton at 707-762-0594 for more information.



Robert H. Ferguson Observatory Public Observing

Phone: (707) 833-6979

<http://www.rfo.org>

The Observatory is closed for the month of December

Upcoming Events

Jan 20th: Night Sky Fall Series #5, 7:00pm

Jan 27th: Night Sky Fall Series #6, 7:00pm

Registration is required for these classes

Stardust

by Patrick L. Barry and Dr. Tony Phillips

Philosophers have long sought to “see a world in a grain of sand,” as William Blake famously put it. Now scientists are attempting to see the solar system in a grain of dust-comet dust, that is.

If successful, NASA's Stardust probe will be the first ever to carry matter from a comet back to Earth for examination by scientists. It would also be the first time that any material has been deliberately returned to Earth from beyond the orbit of the Moon.

And one wouldn't merely wax poetic to say that in those tiny grains of comet dust, one could find clues to the origin of our world and perhaps to the beginning of life itself.

Comets are like frozen time capsules from the time when our solar system formed. Drifting in the cold outer solar system for billions of years, these asteroid-sized “dirty snowballs” have undergone little change relative to the more dynamic planets. Looking at comets is a bit like studying the bowl of leftover batter to understand how a wedding cake came to be.

Indeed, evidence suggests that comets may have played a role in the emergence of life on our planet. The steady bombardment of the young Earth by icy comets over millions of years could have brought the water that made our brown planet blue. And comets contain complex carbon compounds that might be the building blocks for life.

Launched in 1999, Stardust will rendezvous with comet Wild 2 (pronounced “Vilt” after its Swiss discoverer) on January 2, 2004. As it passes through the cloud of gas and dust escaping from the comet, Stardust will use a material called aerogel to capture grains from the comet as they zip by at 13,000 mph. Aerogel is a foam-like solid so tenuous that it's hardly even there: 99 percent of its volume is just air. The ethereal lightness of aerogel minimizes damage to the grains as they're caught.

Wild 2 orbited the sun beyond Jupiter until 1974, when it was nudged by Jupiter's gravity. That nudge put Wild 2 into an orbit approaching the sun and within reach of probes

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HST Heritage: Hoag's Object-Wheel Within a Wheel

A nearly perfect ring of hot, blue stars pinwheels about the yellow nucleus of an unusual galaxy known as Hoag's Object. The image on page 1 of this newsletter from NASA's Hubble Space Telescope captures a face-on view of the galaxy's ring of stars, revealing more detail than any previous photo of this object. The image may help astronomers unravel clues on how such strange objects form.

The galaxy is 600 million light-years away in the constellation Serpens. The entire galaxy is about 120,000 light-years wide, which is slightly larger than our Milky Way Galaxy.

The blue ring, which is dominated by clusters of young, massive stars, contrasts sharply with the yellow nucleus of mostly older stars. What appears to be a "gap" separating the two stellar populations may actually contain some star clusters that are almost too faint to see. Curiously, an object that bears an uncanny resemblance to Hoag's Object can be seen in the gap at the one o'clock position. The object is probably a background ring galaxy.

Ring-shaped galaxies can form in several different ways. One possible scenario is through a collision with another galaxy. Sometimes the second galaxy speeds through the first, leaving a "splash" of star formation. But in Hoag's Object there is no sign of the second galaxy, which leads to the suspicion that the blue ring of stars may be the shredded remains of a galaxy that passed nearby. Some

astronomers estimate that the encounter occurred about 2 to 3 billion years ago.

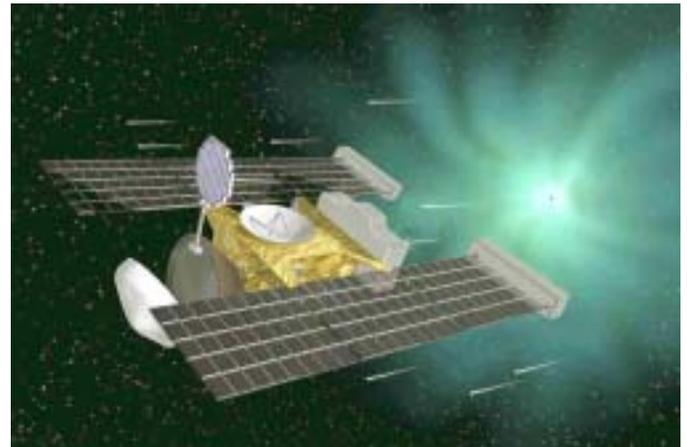
This unusual galaxy was discovered in 1950 by astronomer Art Hoag. Hoag thought the smoke-ring-like object resembled a planetary nebula, the glowing remains of a Sun-like star. But he quickly discounted that possibility, suggesting that the mysterious object was most likely a galaxy. Observations in the 1970s confirmed this prediction, though many of the details of Hoag's galaxy remain a mystery.

Image Credit: NASA and the Hubble Heritage Team (STScI/AURA)

Acknowledgment: R. Lucas (STScI/AURA)

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STARDUST



NASA's Stardust mission will capture dust from comet Wild 2 and bring them back to Earth for study

from Earth. Since then, the comet has passed by the Sun only five times, so its ice and dust ought to be relatively unaltered by solar radiation. Some of this pristine "stuff" will be onboard Stardust when it returns to Earth in 2006, little dusty clues to life's big mysteries.

To learn more about Stardust, see the mission website at stardust.jpl.nasa.gov. Kids can play a fun trivia game about comets at spaceplace.nasa.gov/stardust.

This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.

SCAS Membership

Harry Linder, Membership Director

harry@sonic.net

The SCAS is pleased to welcome the following new members:

Irene Sample and family

Bert Kaplan

We now have 159 regular members, plus the ten 2003 Striking Sparks winners.

Each month a few members don't get their paper or electronic newsletters on time because we didn't learn about their latest address change. Please let Harry know when you change email or snail mail addresses. Thanks.

SCAS Elections Are On Dec. 10

Here are the nominee/volunteers so far:

President: Keith Payea
 Vice President: Cecelia Yarnell
 Treasurer: Larry McCune
 Secretary: Loren Cooper
 Membership Director: Harry Linder
 Publications Director: Open
 Community Activities Director: Len Nelson

Additional nominations may be made from the floor.

Ed. Note: We need a new publications director because I'm relocating, but I'll be around for several issues to help a new person get up and running. Try it- it's interesting and not particularly difficult. You'll enjoy it.

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Journey to Mars at The Exploratorium

Live In-Museum and Online Webcast Schedule

Come to the Exploratorium or go to
<http://www.exploratorium.edu/marsrover>

In conjunction with Journey to Mars, talk with Exploratorium senior scientists about the history of Mars exploration; see images taken by Spirit, which just landed on the Martian surface; learn how Spirit transmits its images from Mars to Earth; discover what humans would actually experience camping on Martian soil; touch Mars snowflakes, and find out why scientists are so eager to learn whether water ever existed on Mars.

Weekend Special Events

January 3, 10 & 11, 17 & 18, 24 & 25

As robotic rovers begin to explore the Martian terrain in January 2004, the Exploratorium offers zany and substantive special weekend events designed to bring the distant red planet and the science and art of Mars exploration to light for everyone here on Earth. Simulate the challenges faced by NASA scientists by designing a contraption to protect an egg when launched from heights of fifteen feet. Meet the author of the definitive book on mapping Mars' fascinating

YA November Meeting

On November 14 we were fortunate to have Jane Houston Jones return for an excellent presentation on the Leonids Meteor Shower. Jane described the origin and history of the Leonids. She also presented some fascinating information and photographs about NASA's use of amateur astronomers to count the number of meteors during the 2002 Leonids' peak.

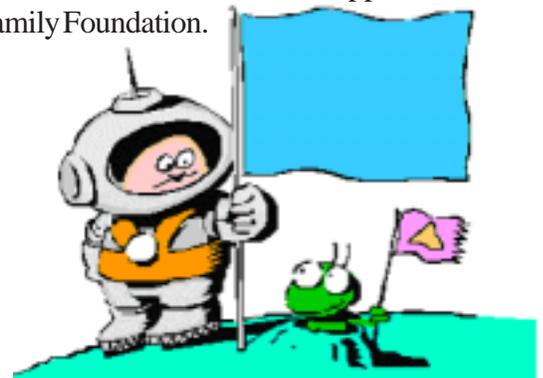
The amateurs were flown in a specially outfitted NASA jetliner, which allowed them to observe the Leonids above much of the significant atmospheric and light interference which adversely affect ground-based observations.

Observations were made through electronic goggles worn by the amateurs. The goggles received their sky-section images from sensitive cameras mounted at special windows along the sides and top of the aircraft fuselage. The observers would click a mouse connected to the main computer whenever they saw a meteor. The specially-designed software tracked the input from all of the observers, and was able to graphically represent the Leonids shower throughout its duration, showing the minor and major peaks of meteor activity.

Many thanks again to Jane for presenting to us at this meeting, as she was in the midst of preparing for her move to her new job at NASA's JPL in Pasadena! There was a brief reception after her talk. Partially-cloudy weather prevented our having a star party at this meeting.

terrain. Watch insect-like robots clamber over obstacles; marvel at a fire that burns without oxygen; cheer on robotic rovers made from LEGOs, as well as their school-aged inventors, and cartoon your own version of Mars.

All events and special weekend programs are free with museum admission. This program is made possible by the National Science Foundation, with support from the McBean Family Foundation.



AURORAS TO APPEAR FOR YA'S IN SEBASTOPOL

Come to Apple Blossom School on Friday, December 12th for a 7:30 PM presentation on "Auroras".

The speakers will be Merlin Combs and Len Nelson, both of whom are very interested in the Sun and solar-related phenomena we experience here on Earth. They have been observing and collecting images of these fascinating apparitions for many years. Their extensive slide show promises to be entertaining and even awe-inspiring.

The presentation will reveal the origin of Auroras, popularly known as the Northern (and Southern) Lights. Len and Merlin will delve into the nature of our nearest star, the Sun. Beginning with its size and relationship to the Earth, they will go on to discuss the meaning of Solar storms, prominences, flares, sun spots and related solar phenomena. They'll show how the Earth's atmosphere and magnetic field protect us from the incoming particles of the solar wind. You'll learn how the solar wind and the Earth's magnetic field combine to produce Auroras.

The Young Astronomers Want YOU !

Attendance has been increasing at our young astronomers meetings. We are beginning an outreach program to the schools in Sonoma County, and expect that attendance and membership will continue to increase accordingly. A recent survey of young astronomers attendees indicated interest in the following topics:

- Black Holes
- Nebulae
- Comets
- Asteroids.

We are looking for SCAS members who have a particular interest in any one of these topics, and who might be willing to make a presentation at a future YA meeting. If you are interested in presenting, please contact Gary Jordan at: sieramolloy@aol.com. Thanks for your help!

Young Astronomers Calendar

Dec. 12 - **Auroras**

Presenters, Merlin Combs and Len Nelson

January: **The Gas Giants**

Presenter, Jane Houston Jones, if available

February: **Constructing and Using a Planisphere**

Presenters, Len Nelson and Gary Jordan

March: **Mars**

Presenter, Gary Jordan

Meetings start at 7:30 p.m. at Apple Blossom School, 700 Water Trough Road, Sebastopol. The multi-purpose hall is the 'large' building on the right side of the school that one sees from the main parking lot.

Mars Rovers Land Soon

If you are interested in finding out more about the Mars landers due to arrive in December and January, the **Planetary Society** web page is a great starting place. It has a wealth of Mars-related information, along with links to NASA and other facilities. The web address is: www.planetary.org. Check it out!

The Exploratorium in San Francisco also has many activities planned:

Spirit, the new, rugged Mars Exploration Rover (MER), lands on Mars, January 4, 2004, to find out what happened to the water once believed to be on Mars and to identify any evidence of life. The entire month of January at the Exploratorium is dedicated to this Mars exploration, from the first Spirit images webcast from the Exploratorium, to visitor-controlled robots that can go on missions in "Mars yards" in the museum, to a full-scale model of MER, as well as almost daily in-museum events/webcasts and special weekend programs and films.

Continues on page 7, column 1

Young Astronomers Officers

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