

Sonoma Skies



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

January 2004

Volume XXVIII No. 1

Spirit Night at JPL

By Morris Jones

January 3, 2004, 7:30 p.m. — Wouldn't it be fun to be in the media room at JPL on the night of a landing on Mars? I am part of the media this Saturday night, complete with a seat at a table, a net connection for my laptop, and the privilege of asking questions of JPL management at press briefings. My media connection? I'm a reporter for the SJAA Ephemeris, and correspondent to member clubs of the Astronomical Association of Northern California.

[SCAS is a member club of AANC - ed.]

Earlier today I filled out a security form that specified my addresses and employers for the past five years, presented my driver's license and passport, and was rewarded with an official PRESS badge with the label "Restricted, no escort required." (If you're foreign press, you have to be escorted. There's a small army of JPL employee volunteers acting as foreign press escorts over the weekend.)



A full-size model of the Mars Exploration Rover with one petal deployed. *Photos courtesy of Mojo.*

Of course it has been an eventful Saturday evening here at JPL, but I dove right in to my role. At an afternoon press conference, everyone was focused on the potential failure of the landing. I decided to ask a somewhat lighter question to the four program managers.

"What time will it be in Gusev crater when Spirit lands? And what will the days be like for the engineers and scientists during operation of the mission?"

There I was live on NASA-TV sitting next to a reporter from the Associated Press asking my fun little question. I think the managers really enjoyed the question because it took them away from this focus on Mars failures.

They answered that it would be about 2 in the afternoon, Gusev crater time, when Spirit lands. And during the operation there are two shifts of engineers and scientists working the mission — a martian day shift, and a martian night shift. Both teams are tied to the martian sol clock, so their shifts would begin about forty minutes later every day. It's torturous on your body clock, but nobody really minds.

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YA Meetings Open To The Public

Do you know a student who is interested in astronomy? If so, please invite them to join us at our monthly Young Astronomers meetings. Our meetings are open to students throughout Sonoma County. Please join us at Apple Blossom School in Sebastopol, and bring a friend!

YOUNG ASTRONOMERS, the YA newsletter, is now published together with *Sonoma Skies*. Turn this over to find the front page of *Young Astronomers*.

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 \$32.95 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 February 2004 issue is January 30. 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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SCAS Library

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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.

The Semi-Sirius Astronomer

by Herb Larsen



Ed. note- A sample of the SSA's vacation photos appears in the YA newsletter on the back cover

SCAS Egroup URL

<http://groups.yahoo.com/group/scas>

Robert Leyland r.leyland@verizon.net

Any SCAS member is welcome to join. The majority of traffic is about going observing, observing reports and astronomy related news. We get news items from AANC and Sky & Telescope and chat about astronomy. To join either visit <http://groups.yahoo.com/group/scas> and click the Join button or send an e-mail to scas-subscribe@yahoogroups.com,

The New President's Column:

Allow me to introduce myself...

By Keith Payea

I'd like to thank all of you for electing me as your new President. I would also like to thank Len Nelson for convincing me to accept the nomination in the first place. And I would especially like to thank Steve Alvernaz for the fine job he did as president over the last few years.

For those of you I haven't yet met, here's a little background. I am an Engineer, born and raised in New England. My wife and I moved to Santa Rosa five years ago, after living in the Seattle area for about 17 years. Moving to clear skies reawakened an old interest in Astronomy. I'm also what I refer to as a "Science Hobbyist". (My wife would say Mad Scientist...). A few years ago I built a seismometer, and I am currently working on building my own Radio Telescope.

I've been a member of SCAS for about 4 years, and a docent at RFO for two years. I really enjoy doing public astronomy, and I've become one of the regulars at the annual Yosemite star party. It is so much fun showing the wonders of the sky to the international visitors at Glacier Point.

For the coming year I want to continue all of the excellent programs that have been created over the years. In addition, I want to establish a presence on the World Wide Web for the Sonoma County Astronomy Society. Many people who hear about us will naturally turn to the web for more information, and we need to be there. I would also encourage all of you to take advantage of the e-mail discussion group on Yahoo. It's a great way to stay in touch with the other members between meetings.

If any of you would like to make suggestions or ask me any questions, please send me an e-mail at kpayea@bryantlabs.net

SPARKS Reminder:

The first workshop session will be at Cloverdale H.S. on February 7, 2004
Come have fun cutting out the parts for all 10 scopes with good company in a nice shop.
Ask Len Nelson for details and directions.

**Morrison Planetarium
Dean Lecture Series**

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

Tickets are now on sale for the Spring 2004 Series:
"Astrobiology And The Search For Life"

February 9

Astrobiology – A New Way of Looking at the Universe

Dr. David Morrison, Senior Scientist, NASA Astrobiology Institute, CAS Fellow & Science Trustee

Astrobiologists are exploring three broad questions: (1) How does life begin and evolve? (2) Is there life elsewhere in the universe? (3) What is the future of life on Earth and beyond? We cannot answer these questions today, but we are developing the tools that may lead us to fundamental new insights in both astronomy and biology.

See the CAS website for future Dean Lectures.

NEW LECTURE LOCATION: During the reconstruction of the Academy, the Dean Lectures have temporarily moved to the San Francisco Jewish Community Center at 3200 California Street (at Presidio Avenue). Parking is available across the street in the UCSF Laurel Heights campus parking lot for \$1.25 per night. Parking in the JCC garage is \$1.25 per half-hour.

Chabot Space and Science Center

<http://www.chabotspace.org>

(510) 336-7373

Saturday, January 17, 6:30 pm

Lonely Planets: The Natural Philosophy of Alien Life

Dr. David Grinspoon will present his new book of the same title. Come hear about what it takes for a planet to support life in a remarkably hostile Universe. Book signing will follow the lecture.

Saturday, January 31, 6:30 pm

Magnificent Mars

Berkeley astronomer Ken Croswell will speak about "Magnificent Mars." Copies of his new book will also be available that evening for signing.

**Robert H. Ferguson Observatory
Public Observing**

Phone: (707) 833-6979

<http://www.rfo.org>

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

PUBLIC VIEWING

Three scopes are operating: the 14-inch SCT with a CCD camera in the east wing, the 8-inch refractor under the dome, and the 24-inch Dobsonian in the west wing. The next public observing opportunities:

January 24

Solar Viewing 11:00 a.m. - 3:00 pm

Night viewing 7:00 pm - midnight

There is no admission fee for the solar viewing, but donations are appreciated. The Park charges \$4 per vehicle for entry. A \$2 donation is requested for admission to the observatory during the night viewing sessions. SCAS members are welcome to set up telescopes in the observatory parking lot to assist with the public viewing. However, automobile access is closed at dusk, so arrivals after dusk will need to carry their equipment in from the parking area by the horse stables.

DOCENT TRAINING CLASS

A docent training class conducted by the VMOA and the state Park Service is to be announced shortly. We understand it is to begin on February 1, 2004. Check the web site or call George Loyer for details.

**SSU Dept. of Physics & Astronomy
Observatory - Public Viewing**

(707) 664-2267

January 30

7:00 - 9:00p.m.

The Moon, Orion Nebula

The observatory is inside the football field at the SE corner of the campus, East Cotati Avenue and Petaluma Hill Road, 2 miles east of U.S.101 at Cotati.

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.

Black Holes to Galaxies

January 16 - February 22

Astronomers say there are two basic types of black holes, stellar and galactic. In this show we'll discover how black holes form and what characteristics they have. Can you really enter a black hole to travel somewhere else in space or time? We will learn how stellar black holes differ from galactic, and how astronomers now think galaxy formation may be tied to galactic black holes.

Silicon Valley Astronomy Lecture Series

<http://www.foothill.edu/ast/>
(650) 949-7888

February 11 7:00 - 8:30 p.m.

The Search for Planet X: Exploring the Solar System Beyond Neptune

Dr. Eugene Chiang, UC Berkeley, will discuss how new discoveries are revealing an array of interesting new objects—including several mini-planets—at the outskirts of our planetary system.

In the Smithwick Theater at Foothill College in Los Altos Hills. Admission is free. Visitors must purchase a required campus parking permit for \$2 (eight quarters). Foothill College is located on El Monte Road off Interstate 280.

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Spirit Night at JPL



Mojo poses in front of a Mars sandbox with a fully-deployed rover model.

The other interesting fact they pointed out is that Opportunity would land in a spot about 12 hours (martian time) away from Spirit, so the operation teams will be in completely opposite phase.

As I write this, I'm enjoying the NASA-TV theater of "polling" flight controllers prior to EDL—entry, descent, and landing. It seems absurd to me, since there's no way to abort the landing and "go around" if some system isn't normal, but it makes for good drama. After all, they're watching events that took place nine minutes ago, and can't issue a command to the spacecraft that would be received for nine minutes. Eighteen minutes round trip is impossible reaction time when events change so quickly during EDL.

But now it's time to wait for word of the landing.

11:00 p.m. — Perfect landing! It was certainly a thrilling hour, and a treat to get to sit in the briefing room with all those illuminati sharing the celebration.

While there really wasn't much difference between being here and watching NASA-TV from home, being here and reporting first hand was very special. Signing off, live from NASA JPL in Pasadena. Sleep well Spirit.

Spotlight on the Rental Fleet No. 3: Schmitt-Cassegrain

This month we round out the selection of telescope types available for rent from the SCAS. Last year we showed an 80mm equatorially-mounted refractor and an 8-inch Newtonian reflector on a Dobsonian alt-azimuth mount.

The picture to the right shows an 8-inch Celestron SCT. This scope is sophisticated enough for astrophotography. It comes complete with 3 oculars: 7 mm and 24 mm ordinary eyepieces and a 12 mm one with an illuminated reticle. It also comes with a Lumicon off axis guider. Contact Joan Thornton at 707-762-0594 for more information

Public Astronomy

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

Your assistance at star parties is most welcome and appreciated. I am sure that if you have never been to one you will be delighted with the experience!

Elementary School Star Party Dates -

Unless otherwise noted, please let me know if you can attend and I'll send more information.

Jan. 13 (Tues.) Grant, Petaluma [rain date Jan. 15].

Jan. 21 (Wed.) Dunham, Petaluma.

Jan. 26 (Mon.) Austin Creek, Santa Rosa [rain - Jan. 28].

Feb. 18 (Wed.) Strawberry, Santa Rosa [rain - Feb. 20].
Loren Cooper will coordinate this star party.

Feb. 26 (Thurs.) Windsor Creek, Windsor.
Loren Cooper will coordinate this star party.

March 8 (Mon.) Meadows, Petaluma [rain - Mar. 9].

March 11 (Thurs.) Miwok, Petaluma [rain - Mar. 12].

March 19 (Fri.) Evergreen, Rhonert Park

March 26 (Fri.) Hidden Valley, Santa Rosa



photo courtesy Len Nelson

SCAS Membership

by Harry Linder, Membership Director
(707) 542-9167 harry@sonic.net

The SCAS is pleased to welcome the following new members:

Steven Owen
Anne Grauzlis
John Watrous
Aaron and John Carpenter

We now have 163 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 me know when you change email or snail mail addresses. Thanks.

The Young Astronomers STILL Want YOU !

Do you have a specific area of astronomy that is your specialty or passion? If so, the Young Astronomers would love to have you share your interest with us at a future meeting! We are still looking for SCAS members who would be willing to give a presentation. Some topics already requested by YA members include:

- . Comets
- . Asteroids
- . Nebulae
- . Black Holes.

If you have an interest in any of these topics, or any other topic that you feel might be of interest to YA members, please contact Gary Jordan at: sieramolly@aol.com. Thanks for your help!

Curious About Astronomy? The Top Ten Questions.

Have you ever wondered what the most frequently asked question about space and astronomy are? Cornell University astronomers go online as "The Curious Team" to answer questions submitted from all over the world. Here is their Top Ten list. You can see the questions AND the answers by going to:

<http://curious.astro.cornell.edu/topten.php>

1. How do you measure the distance between Earth and the Sun?
2. What is the life cycle of a star?
3. Will the sun go supernova in six years and destroy Earth (as seen on Yahoo)?
4. How do I build a model rocket?
5. How critical is the Earth-Sun distance in maintaining our average temperatures on Earth?
6. What is a white hole?
7. Did astronauts really go to the Moon, or is it a hoax?
8. What are the names of the earth, moon, sun, and solar system?
9. What color is Venus?
10. Is the Moon moving away from the Earth? When was this discovered?

Young Astronomers Calendar

January 16: YA officers meet at 6:45p.m.

General meeting:

Constructing and Using a Planisphere

Presenters, Len Nelson and Gary Jordan

February 13: **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.

YA December Meeting

At our December 12th meeting, Merlin Combs and Len Nelson gave us an awesome presentation about Auroras. The presentation opened with great hands-on opportunities for the attendees. Len began with a demonstration of the size and relationship of the Sun to the Earth. Merlin then provided examples of the behavior of magnetic fields, using magnets and iron filings.

Our presenters continued with in-depth information and visually explaining the Sun's magnetic field and its relationship to sunspots, prominences, solar flares, the solar wind, and solar storms. With this information as a solid foundation, they proceeded to explain the Earth's magnetic field and how and why the Earth's auroras occur. The evening culminated with incredible images and quotations by observers of auroras from around the globe (some even from our own Sonoma County!) Thank you, Merlin and Len, for such a fascinating and detailed presentation!

-Gary Jordan

Young Astronomers Officers

President: Melissa Downey 632-5661

Vice-President/Program Director: Open

Recorder: Darren Davis 575-8369

Newsletter Editor: Mark Bellinger 763-7554

Librarian: Clayton Alderson 833-6423

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Young Astronomers



Newsletter of the Young Astronomers of the
Sonoma County Astronomical Society

January 2004

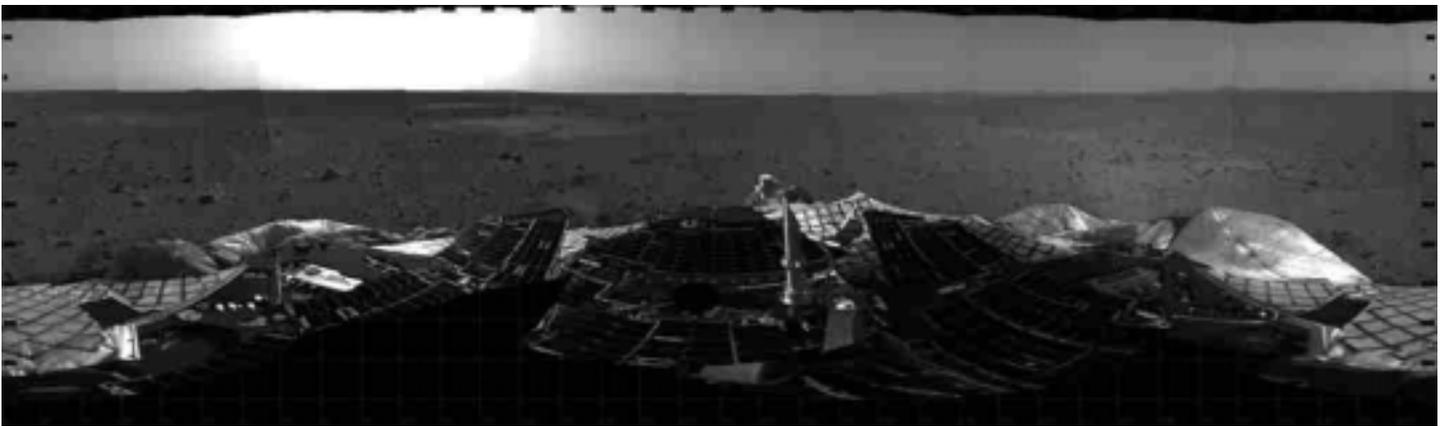
Volume XII No. 1

Inverting Images: Looking at SPIRIT's Initial Photographs

By Mark Bellinger, YA Editor

Recently, NASA has been releasing multiple images from its robotic explorer SPIRIT, on Mars. SPIRIT made touchdown on Mars' surface on January 3rd. The pictures

are high-resolution, black-and-white photographs made with the cameras located on the probe. Gusev Crater, the landing site for the SPIRIT rover, is easily visible in the 360° camera shot from the rover shown below. The landing gear of the rover can also be seen. This picture is located online at http://marsrovers.jpl.nasa.gov/gallery/press/spirit/20040104a/PIA04980_br.jpg, or it can be found by following the "Multimedia" link from <http://marsrovers.jpl.nasa.gov>.



If the picture appears too dark, or if details are hard to make out, you can invert the colors of the picture by using Microsoft Paint in Windows.

To do so, open up Microsoft Paint (it is in the Accessories folder in the Start Menu). Copy the picture from your Internet browser, and paste it into Paint. Then, go to

"Image" in the top toolbar, and click "Invert Colors". This flips the colors of the image, turning black into white and vice versa, as shown in the picture below. This should help you see the individual rocks on Mars' surface, in Gusev Crater.

Usually, it is easier to see darker objects on a lighter surface than lighter objects on a darker surface.

