



THE OBSERVER

SAN BERNARDINO VALLEY AMATEUR ASTRONOMERS

Member THE ASTRONOMICAL LEAGUE

"Celebrating Forty-Seven Years of Amateur Astronomy"

VOLUME #47 ISSUE #09

September 2005

Guest speaker: Klaus R. Brasch, Ph. D. "Rediscovering Astrophotography: the Digital Revolution"

Tiger Stripes are Cubs

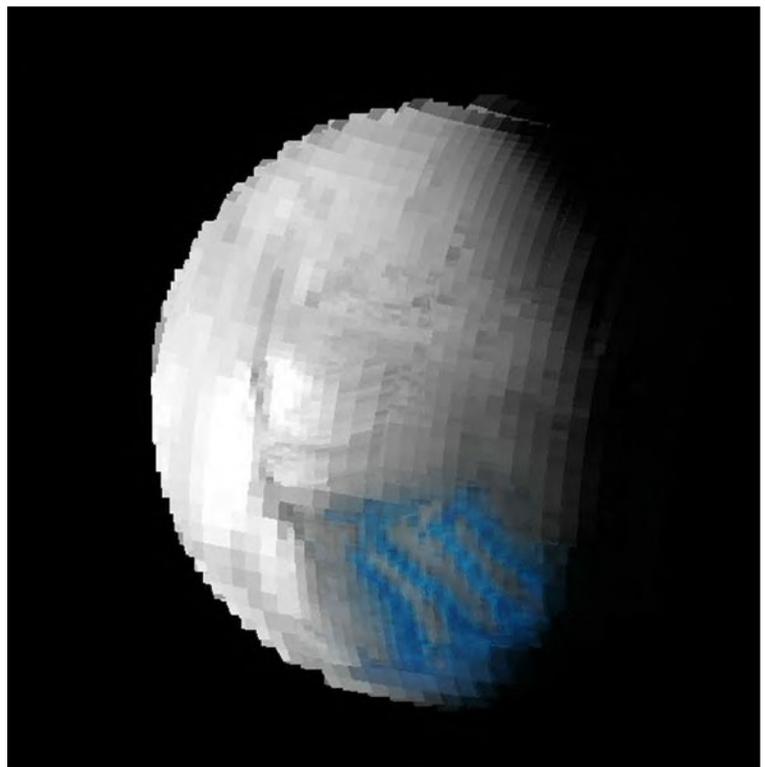
This visual and infrared mapping spectrometer image of Saturn's moon Enceladus (in the 2 micron-wavelength) shows the dark cracks at the south pole dubbed "tiger stripes" for their distinct stripe-like appearance.

Superimposed on top of the map is a "crystallinity" map that shows the freshest, most crystal ice as blue. The crystalline ice is most prominent in the tiger stripes region.

This image was taken during Cassini's close flyby of Enceladus on July 14, 2005.

The Cassini-Huygens mission is a cooperative project of NASA, the European Space Agency and the Italian Space Agency. The Jet Propulsion Laboratory, a division of the California Institute of Technology in Pasadena, manages the mission for NASA's Science Mission Directorate, Washington, D.C. The Cassini orbiter was designed, developed and assembled at JPL. The visual and infrared mapping spectrometer team is based at the University of Arizona.

Credit: NASA/JPL/University of Arizona



MEETING: September 17, 2005--7:00PM

"Bring Scopes for Lunar and Planetary Observing"

SAN BERNARDINO COUNTY MUSEUM

CALIFORNIA STREET EXIT FROM INTERSTATE 10

PRE-MEETING DINNER: 5:00PM HOMETOWN BUFFET, LOMA LINDA

SBVAA OFFICERS

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SBVAA WEBSITE:
www.sbvaa.org

SBVAA

CALENDER OF EVENTS 2005

Meetings held at the
 San Bernardino County Museum
 For information, call Chris Clarke at (909)
 888-6511, ex.1458

September 17.....Meeting (3rd Saturday)
 October 1.....Star Party (Grandview---2
 days before new moon)
 October 15.....Meeting (3rd Saturday)
 November 5.....Star Party (3 day old
 moon)
 November 12.....Meeting (2nd Saturday)
 December 3.....Star Party (2 day old
 moon)

Astronomy Books Are In!

The books we ordered are now available! By ordering over 25 copies, we were able to receive the maximum discount for "The Grand Tour: A Traveler's Guide to the Solar System" and the cost is \$10.00 per copy. A reservation list was made during the summer and members can pay our Treasurer, Fidel Hernandez, in person (with cash or check-- made out to SBVAA) and pick up their copy at the September and October Meetings.

Calenders

The 2006 "Deep Space Mysteries" calendars are here. It will be available for sale at the next club meeting on October the 15th. We have 25 for sale on a first come first served basis. The retail for this calendar is \$12.99 plus tax. Your cost, through the club, is \$9. See Fidel the club treasurer at the back of the room to make your purchase.

Long-time Member Passes Away

By Chris Clarke

Harry "Rex" Rechsteiner passed away at age 82 on August 18 at Casa Maria Rest Home in Fontana. "Rex" had been a club member for over 40 years and was one of the last of the "old guard" of members who had guided the club up until its 'reformation' 10 years ago.

He had been in failing health for the past two years and

was unable to attend any meetings. Prior to that, he was at all meetings and thoroughly enjoyed the presentations and the comraderie of his fellow members. His warm, friendly introduction of "Greetings and Salutations" along with a hearty handshake made him a welcome addition at any event.

Up until about ten years ago, he was very active in club outreaches and also with the annual RTMC event at Camp Oakes. He very much enjoyed sharing astronomy with anyone who had the slightest curiosity about the subject. Back in the 1960s, he liked to build telescopes and enjoyed sharing views of the moon and planets with his neighbors in Rialto.

Rex was retired from Cal Trans and had been a surveyor for decades. He helped to survey many of the freeways in Southern California. He was a veteran of WWII, and served in the China-Burma-India Theatre as a combat engineer, helping to build the famed Burma Road. Rex had many interesting stories to tell of his travels and experiences. For those of us who knew him, we will indeed miss him.

September Meeting

- Guest speaker: Klaus R. Brasch, Ph. D.
 "Rediscovering Astrophotography: the Digital Revolution"
- Proposed purchase of A/V equipment for club
- Nominations for club officers - election in October
- Next star party (Sep. 30 - Oct. 1) - Grandview!

President's Message

Jerry L. Day

Jerry_day@eee.org

Welcome back. Another month has passed by, summer is waning, vacations have been taken, children are back in school, and the first hint of autumn is in the air. With autumn comes welcome relief from the summer season's sweltering heat and smog, along with crisp, clear and dark nights to enjoy one last look at the summertime constellations, as well as a first look at favorite winter constellations.

In retrospect, the past month was fairly busy for the club, with a number of events squeezed in together with last-minute vacations, the Labor Day holiday weekend, and the hectic back-to-school or back-to-work rush.

The club's annual summer barbecue and potluck was held Saturday evening, August 20 at the picnic area of the San Bernardino County Museum. About two-dozen club members attended the event for a very pleasant evening of good company and good food. As always, there was an abundance of delicious dishes contributed to the potluck – too many to sample all. Memorable dishes include Tom Lawson's traditional Spanish rice casserole, as well as the Miller's homemade Chocolate Chunk/Peanut Butter ice cream. Thanks to all who helped with the setup and tear down of the event, as well as to all who contributed to the potluck. Special thanks are also due for Randy & Tina for again providing the BBQ grills, as well as to Tina, Pam, and Kim for helping prepare the picnic area.

The most recent star party was held Saturday, September 3, at the Johnson Valley site. Only three club members were able to attend the event, but excellent seeing conditions made their trip well worth the effort.

The following weekend, Saturday, September 10, the club hosted a Moon Party outreach for the public at the San Bernardino County Museum. About 100 guests attended the event and were presented with stunning views of the First Quarter Moon, as well as views of a few other bright deep sky objects. The club was well represented with plenty of members present to field questions and to offer views through eight telescopes. Thanks to all who made this an enjoyable and successful outreach! (And of course, it was off to Coco's for dessert and coffee immediately following the event.)

The next star party will be held the weekend of October 1, at the Grandview campground of the Bristlecone Pine (Inyo) National Forest. This will be the second of our two annual trips to Grandview. For those of you who have not been to Grandview, this is one of the premier dark sky sites to be found anywhere in Southern

California. The campground is a dry site – bring plenty of water. Elevation at the site is about 8,600 ft. - bring sunscreen, as the UV can be intense at this altitude. Also bring plenty of warm clothes, as the nights can become quite cold this late in the season.

The next meeting will be held this weekend, Saturday, September 17. Please join us in welcoming our guest speaker, Klaus R. Brasch, Ph. D. for his presentation of "Rediscovering Astrophotography: the Digital Revolution".

Dr. Brasch is the Executive Director of the Office of Research Development & Technology Transfer and a Professor of Biology at California State University, San Bernardino. He has been active in astronomy since he was 15 years of age and is a current member of the Association of Lunar & Planetary Observers (ALPO), Riverside Astronomical Society (RAS), and San Diego Astronomical Association (SDAA). Much of his astrophotography has been published in S&T and Astronomy magazines, as well as in the newly published edition of "The Backyard Astronomer's Guide" by Terence Dickinson and Alan Dyer.

As you may recall, Klaus has spoken to our group a number of times in the past – be prepared for what will surely be a lively and entertaining, as well as informative, presentation.

Several important items of club business will also be discussed at the next meeting, mainly the proposed purchase of audio/visual equipment for the club, as well as candidate nominations for the election of club officers to be held in October.

I look forward to seeing you all at the next meeting, at the next star party, and at future events.

Clear skies.

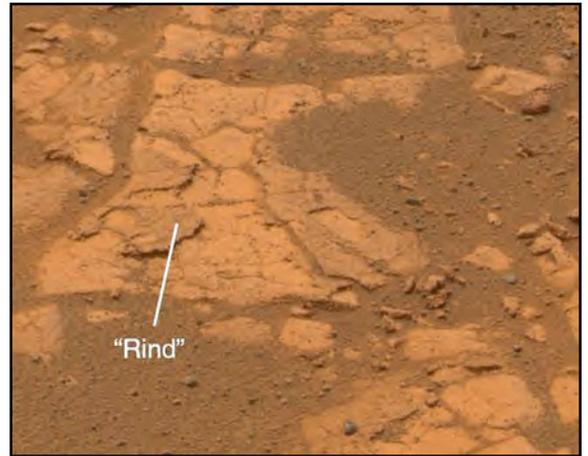
SBVAA
Officer Elections
to be held
October, 2005

MARS ROVERS UPDATES

OPPORTUNITY UPDATE:

Rind-Like Features at a Meridiani Outcrop

After months spent crossing a sea of rippled sands, Opportunity reached an outcrop in August 2005 and began investigating exposures of sedimentary rocks, intriguing rind-like features that appear to cap the rocks, and cobbles that dot the martian surface locally. Opportunity spent several martian days, or sols, analyzing a feature called "Lemon Rind," a thin surface layer covering portions of outcrop rocks poking through the sand north of "Erebus Crater." In images from the panoramic camera, Lemon Rind appears slightly different in color than surrounding rocks. It also appears to be slightly more resistant to wind erosion than the outcrop's interior. This is an approximately true-color composite produced from frames taken during Opportunity's 552nd martian day, or sol (Aug. 13, 2005).



SPIRIT UPDATE: Moonstruck - sol 591-598, Sept 09, 2005:

Spirit is in good health, power positive, and has no issues. This week the telecom team changed Spirit's uplink rate from 1000 bits per second to 2000 bits per second. In its orbit around the Sun, Mars comes close to Earth for a few months once every two years. Mars is now close enough to Earth that the one-way communication travel time from the spacecraft at Mars to the Deep Space Network antennas on Earth is only about 5 minutes away (at light speed). This shorter communication travel time means that the rover team has plenty of communication-link margin to support the higher uplink rate. The new uplink rate was successful during the sol 598 uplink session.

Between Sept. 2 and Sept. 8, Spirit drove to another imaging location and completed the second stereo imaging campaign. Spirit returned to "Irvine" in order to explore what might be a dike, which is a crack-like cut that often forms when magma from a volcano travels through or over another rock. Spirit also performed more observations of the moons Phobos and Deimos, and completed three days of Mössbauer spectrometer readings on the capture magnets.

CASSINI UPDATE

Monitoring 'Fensal-Aztlan'

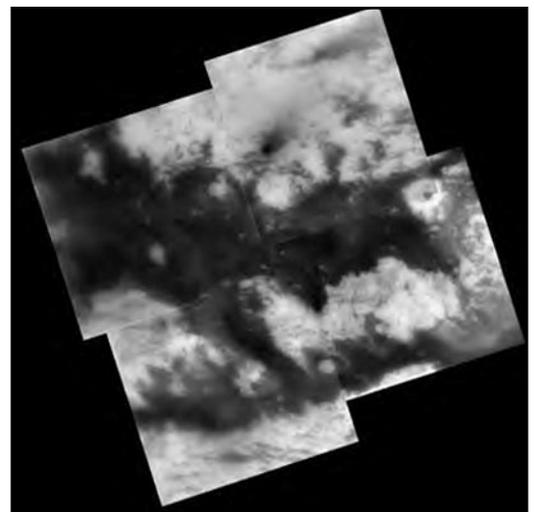
September 13, 2005

During its Sept. 7, 2005, flyby of Titan, Cassini acquired images of territory on the moon's Saturn-facing hemisphere that were assembled to create this mosaic.

Once known only as "the H" because the region looks something like the letter on its side, features in this region now possess provisional names. The northern branch of the H is now called "Fensal," while the southern branch is known as "Aztlan."

Fensal is littered with small "islands" ranging in size from 5 to 40 kilometers (3 to 25 miles) across. These landforms currently are thought to be water ice upland areas, surrounded by shallower terrain that is filled-in with dark particulate material from the atmosphere. A few larger islands are also seen, like Bazaruto Facula (near right, containing a dark crater), and several islands in western Fensal. NASA/JPL

Read More in the Color PDF Online Newsletter.



CLASSIFIEDS

Classified Ads are free to all members.

Please keep the ads short.

Before the Submission Deadline, send all ad copy to the
SBVC Planetarium, 701 S. Mt. Vernon Ave, San Bernardino, CA 92410
or e-mail Newsletter Editor at: WSMyer@aol.com

The following items have been donated to the club.

One item is a fund-raiser, the others are FREE!

If you're interested, contact Chris Clarke

Work—(909) 384-8539

Home—(909) 875-6694

Orion "Skyview" 90mm Refractor.

Comes with an alt-azimuth mount and aluminum tripod.

There is no finder, but it does come with a 15mm Plossel eyepiece.

\$110.00

Jason 60mm Refractor.

Comes with alt-azimuth mount on wooden tripod.

Has finder, but no eyepieces.

FREE!

An Invitation To Join

The San Bernardino Valley Amateur Astronomers

- Monthly Meetings/Speakers
- Monthly Star Party
- The Observer Newsletter
- Learn about Astronomy
- Learn about Telescopes
- Learn about Astrophotography

Fill out and mail this form along with \$30.00 Annual Membership Fee. Add an additional \$33.00 to include a one (1) year subscription to "Sky and Telescope" magazine and or \$29.00 for one (1) year subscription to "Astronomy" Magazine.

Make check payable to: San Bernardino Valley Amateur Astronomers.

Mail to: **Fidel Hernandez, SBVAA Treasurer,
27799 21st St, Highland, CA, 92346**

Name _____

Address _____

City and State _____

Zip _____ Phone _____

Internet E-mail Address _____

Monitoring 'Fensal-Aztlan'

September 13, 2005

During its Sept. 7, 2005, flyby of Titan, Cassini acquired images of territory on the moon's Saturn-facing hemisphere that were assembled to create this mosaic.

Once known only as "the H" because the region looks something like the letter on its side, features in this region now possess provisional names. The northern branch of the H is now called "Fensal," while the southern branch is known as "Aztlan." Fensal is littered with small "islands" ranging in size from 5 to 40 kilometers (3 to 25 miles) across. These landforms currently are thought to be water ice upland areas, surrounded by shallower terrain that is filled-in with dark particulate material from the atmosphere. A few larger islands are also seen, like Bazaruto Facula (near right, containing a dark crater), and several islands in western Fensal.

When viewed in images of Shangri-La (on the other side of Titan), island-like landforms of this size tend to occur in clusters with apparent preferred orientations. The small islands in Fensal appear much more scattered (and most appear roughly circular), although a few islands do have an east-west orientation to their long axis.

Aztlan, on the other hand, appears comparatively devoid of small islands, with three large islands in its western reaches, plus only a few smaller islands. The largest of these islands is called "Sotra Facula" (just right of center in the bottom left mosaic frame), and measures 240 by 120 kilometers (149 to 75 miles) across.

The territory covered by this mosaic is similar to that seen in Titan Mosaic - East of Xanadu, which is composed of images from Cassini's March 2005 Titan flyby. However, the gaps between the images in this mosaic are smaller and fewer than in the earlier mosaic.

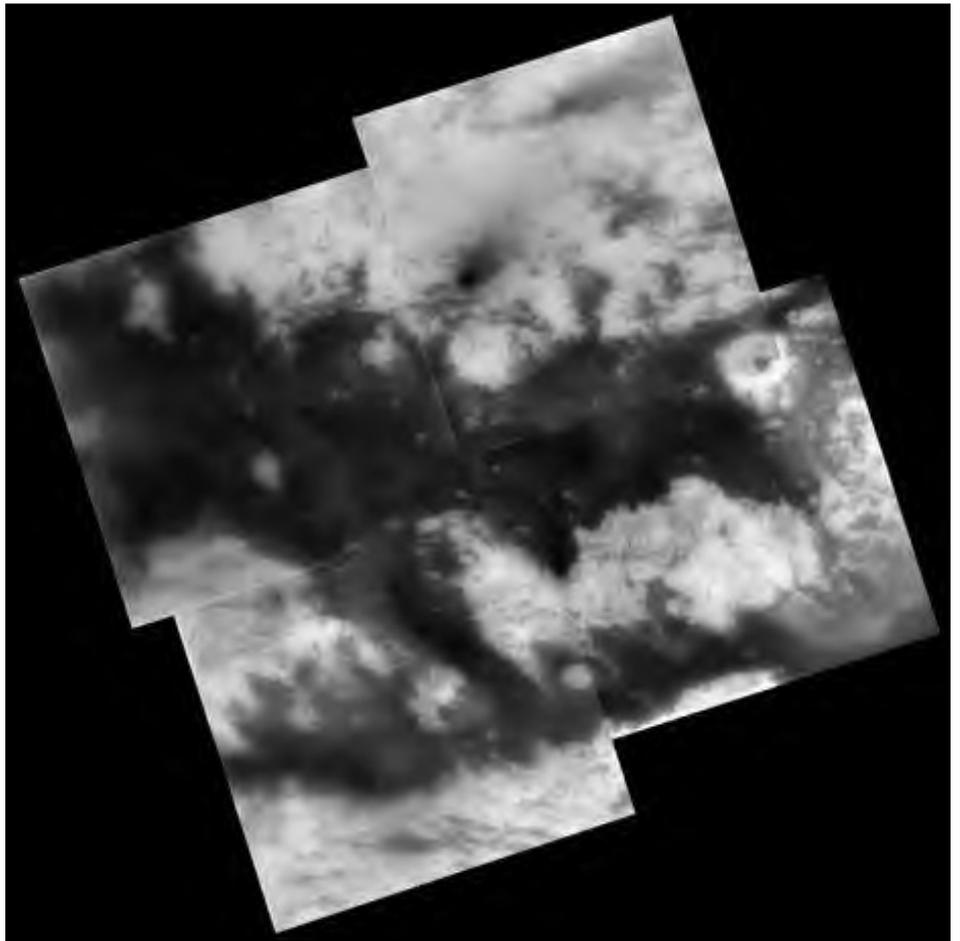
The mosaic is centered on a region at 7 degrees north latitude, 21 degrees west longitude on Titan.

These Cassini spacecraft narrow-angle camera images were taken using a filter sensitive to wavelengths of infrared light centered at 938 nanometers. They were acquired at distances ranging from approximately 200,600 to 191,800 kilometers (124,600 to 119,200 miles) from Titan. Resolution in the images is about 2 kilometers (1.2 miles) per pixel. Each image has been strongly enhanced to improve the visibility of surface features.

The Cassini-Huygens mission is a cooperative project of NASA, the European Space Agency and the Italian Space Agency. The Jet Propulsion Laboratory, a division of the California Institute of Technology in Pasadena, manages the mission for NASA's Science Mission Directorate, Washington, D.C. The Cassini orbiter and its two onboard cameras were designed, developed and assembled at JPL. The imaging operations center is based at the Space Science Institute in Boulder, Colo.

For more information about the Cassini-Huygens mission visit <http://saturn.jpl.nasa.gov> . The Cassini imaging team homepage is at <http://ciclops.org> .

Credit: NASA/JPL/Space Science Institute



NASA Space Place

Where No Spacecraft Has Gone Before

by Dr. Tony Phillips

In 1977, Voyager 1 left our planet. Its mission: to visit Jupiter and Saturn and to study their moons. The flybys were an enormous success. Voyager 1 discovered active volcanoes on Io, found evidence for submerged oceans on Europa, and photographed dark rings around Jupiter itself. Later, the spacecraft buzzed Saturn's moon Titan—alerting astronomers that it was a very strange place indeed!—and flew behind Saturn's rings, seeing what was hidden from Earth.

Beyond Saturn, Neptune and Uranus beckoned, but Voyager 1's planet-tour ended there. Saturn's gravity seized Voyager 1 and slingshot it into deep space. Voyager 1 was heading for the stars—just as NASA had planned.

Now, in 2005, the spacecraft is nine billion miles (96 astronomical units) from the Sun, and it has entered a strange region of space no ship has ever visited before.

"We call this region 'the heliosheath.' It's where the solar wind piles up against the interstellar medium at the outer edge of our solar system," says Ed Stone, project scientist for the Voyager mission at the Jet Propulsion Laboratory.

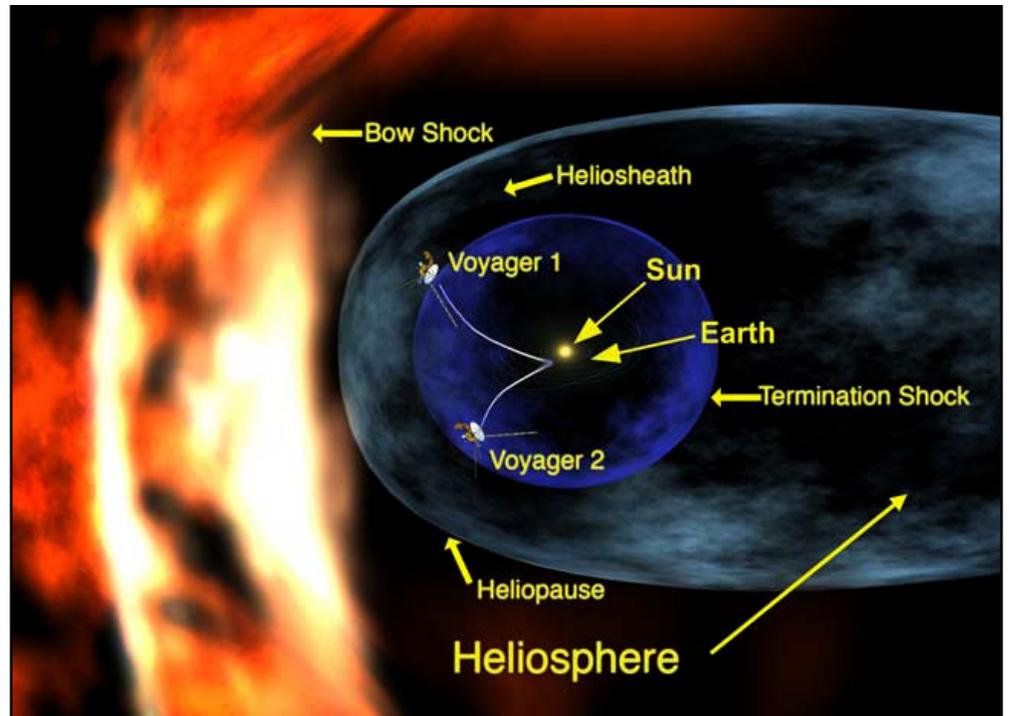
Out in the Milky Way, where Voyager 1 is trying to go, the "empty space" between stars is not really empty. It's filled with clouds of gas and dust. The wind from the Sun blows a gigantic bubble in this cloudy "interstellar medium." All nine planets from Mercury to Pluto fit comfortably inside. The heliosheath is, essentially, the bubble's skin.

"The heliosheath is different from any other place we've been," says Stone. Near the Sun, the solar wind moves at a million miles per hour. At the heliosheath, the solar wind slows eventually to a dead stop. The slowing wind becomes denser, more turbulent, and its magnetic field—a remnant of the sun's own magnetism—grows stronger.

So far from Earth, this turbulent magnetic gas is curiously important to human life. "The heliosheath is a shield against galactic cosmic rays," explains Stone. Subatomic particles blasted in our direction by distant supernovas and black holes are deflected by the heliosheath, protecting the inner solar system from much deadly radiation.

Voyager 1 is exploring this shield for the first time. "We'll remain inside the heliosheath for 8 to 10 years," predicts Stone, "then we'll break through, finally reaching interstellar space."

What's out there? Stay tuned... NASA/JPL



Voyager 1, after 28 years of travel, has reached the heliosheath of our solar system.

GrandView II
September 30--October 1, 2005

See Tom Lawson, Star Party Coordinator

Guest speaker: Klaus R. Brasch, Ph. D.
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"Bring Scopes for Lunar and Planetary Observing"

SAN BERNARDINO COUNTY MUSEUM

2024 ORANGE TREE LANE, REDLANDS, CA

CALIFORNIA STREET EXIT FROM INTERSTATE 10

PRE-MEETING DINNER: 5:00PM, HOMETOWN BUFFET, LOMA LINDA



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