



THE OBSERVER

SAN BERNARDINO VALLEY AMATEUR ASTRONOMERS

Member THE ASTRONOMICAL LEAGUE

"Celebrating Forty-Seven Years of Amateur Astronomy"

VOLUME #47 ISSUE #03

MARCH 2005

Guest Speaker: Klaus Brasch, Ph.D. 'A Nickel Tour of the Great Observatories'

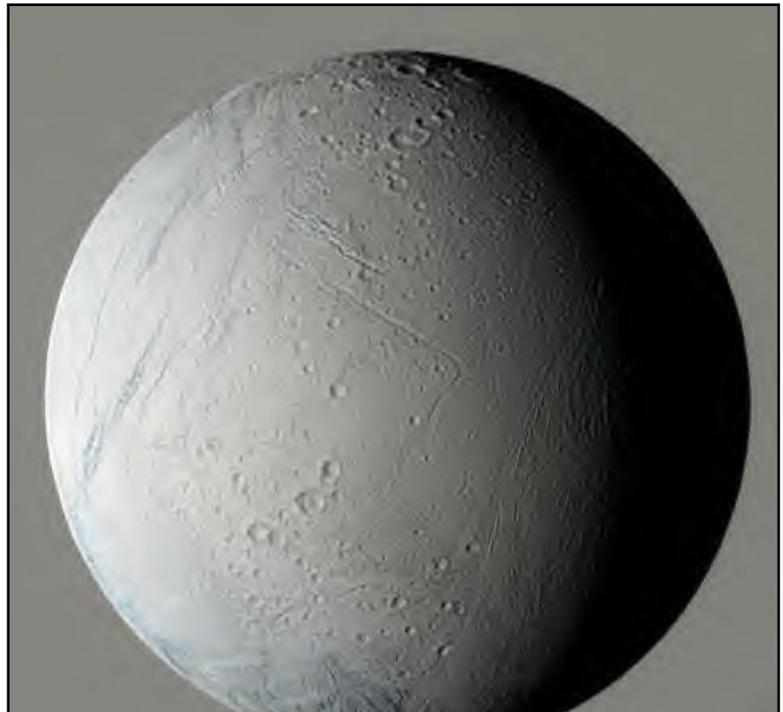
Cassini Finds an Atmosphere on Saturn's Moon Enceladus

Mar. 16, 2005

The Cassini spacecraft's two close flybys of Saturn's icy moon Enceladus have revealed that the moon has a significant atmosphere.

The images comprising this view were taken with the Cassini spacecraft narrow-angle camera at a distance of approximately 94,000 kilometers (58,000 miles) from Enceladus and at a Sun-Enceladus-spacecraft, or phase, angle of 48 degrees. Resolution in the image is about 560 meters (1,800 feet) per pixel.

...NASA



MEETING: March 19, 2005--7:00PM

"Bring Scopes for Lunar and Planetary Observing"

SAN BERNARDINO COUNTY MUSEUM

CALIFORNIA STREET EXIT FROM INTERSTATE 10

PRE-MEETING DINNER: 5:30PM HOMETOWN BUFFET, LOMA LINDA

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SBVAA

CALENDER OF EVENTS 2005

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

March 19.....Meeting (3rd Saturday)
 April 9.....Star Party (1 day old
 moon)
 April 16.....Meeting (3rd Saturday)
 May 7.....Star Party (new moon)
 May 21.....Meeting (3rd Saturday)

A Nickel Tour of the Great Observatories

Klaus R. Brasch, Ph.D.

Please join Dr. Klaus R. Brasch, our guest speaker at the March 19, 2005, SBVAA meeting, for his presentation, "A Nickel Tour of the Great Observatories."

Throughout his years as an active astronomer and astrophotographer, Klaus has had the opportunity to visit many of the major and minor observatories in the USA, Canada, Australia, and elsewhere, each with unique and fascinating histories and missions. Klaus' presentation will feature some of the many photos acquired in the course of his travels, as well as the stories behind these great observatories.

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 currently a 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 recently published edition of "The Backyard Astronomer's Guide" by Terence Dickinson and Alan Dyer.

Rocket Boys by Homer Hickam

The NASA Glenn Research Center in partnership with the Cleveland Area Metropolitan Library System will be conducting a live 60 minute discussion with Homer Hickam author of the #1 New York Times Bestseller Rocket Boys and inspiration for the hit movie October Sky on April 14, 2005 from 11:30am EST to 12:30pm EST.

Rocket Boys by Homer Hickam, is the true story of the author's life growing up in the mining town of Coalwood, West Virginia. In October 1957, Sputnik raced across the Appalachian sky, leaving in its wake 14-year old Homer's dream to build rockets. With the help of his friends, a dedicated teacher, his mother, and others in his small, company town, Homer's rockets would carry him, and his town, farther than he ever expected.

The free live broadcast, webcast, and videoconference will feature Homer Hickam discussing his inspirational life story and the key people who helped him along the way. The program will feature numerous opportunities for students and the public to interact with the author through email.

For Additional Information, Related Activities and Connection Details Visit:
<http://www.nasa.gov/centers/glenn/education/>
<http://www.nasa.gov/centers/glenn/education/>
 (Link will be active 3/15/2005)

Nancy Leon
 NASA New Millennium Program/Space Place

President's Message

Jerry L. Day

Jerry_day@eee.org

Another month has flown by, seemingly just blown away on the blustery winds of March, and I find it's time to write another missive for the newsletter.

The past month has been fairly quiet for the club with several outreach events cancelled due to the poor weather. The weather conditions were only fair for the Messier Marathon, held this past weekend, March 12. A persistently strong and occasionally gusty breeze, together with turbulent seeing conditions made observing difficult and altogether prevented any astro-imaging at the event. Combined, the conditions dampened the spirits of those attending and made for a very short observing session.

Still, although the poor weather may have dampened our events, it has brought life-giving rains to the desert – producing a once-in-a-lifetime blossoming of the desert. I hope you've all taken the opportunity for a day trip, or two, to the high desert to enjoy the spectacle.

Looking ahead, we have no less than three outreaches scheduled for this month.

On Wednesday, March 16th, we'll be at West Riverside Elementary School. The annual West Riverside event is a favorite of ours as fellow astronomer and club member, Sharon Carey, teaches there. Assuming the weather cooperates, we'll have fine views of Saturn and a lovely first-quarter Moon to share with the students, parents, and teachers.

The second outreach will be held Wednesday, March 23, at Kolb Middle School in Rialto. For this event, we'll again have Saturn, as well as waxing gibbous Moon to share. The school will also be providing pizza and drinks for us!

The final outreach for March is scheduled for Saturday, March 26, at the San Bernardino County Museum. This event will be a "Saturn Party", but will also highlight views of a brilliant just-past full Moon nearby Jupiter.

It's been said before, but these outreach events really mean a lot to the children and parents in attendance. For many, this is the first time they have ever looked through a telescope or really LOOKED at anything in the sky. This can be an experience that literally expands one's horizons – opening a universe of possibility to a child. If at all possible, come on down to these outreaches and participate – they're great fun and can really make a difference.

As an extra treat for these outreaches, we'll be able to point to a first-quarter Moon that is riding especially high in the sky. In fact, the Moon will be at its highest possible declination this month. The cause for this strangely high Moon is a phenomenon called the regression of the nodes. As part of an 18.6 year cycle, the 23.4° tilt of Earth's equator, with respect to our orbit around the Sun, combines with

the 5° tilt of the Moon's orbit around Earth, with respect to the ecliptic, to produce swings of extremely high and extremely low declination. From now through 2007 we're in one of those periods of extremes. For Northern Hemisphere residents, the full Moon of June swings remarkably low, the full Moon of December soars remarkably high, and in March, the first-quarter Moon is at its highest possible declination. Certainly an on-going event to appreciate throughout the next year.

Looking further ahead, next month we have another outreach event at the SBC Museum scheduled for Astronomy Day on April 16, which is also our regular meeting day. The events will include a speaker in the afternoon (probably Jim Butts), followed by our regular meeting that night open to the general public, and concluding with public observing from about 8:30 to 10:00. Our meeting that night will also feature guest speaker, Dr. Gary Peterson, speaking on "The Great Martian Climate Change".

Also, be sure to mark your calendars for the 37th annual RTMC Astronomy Expo which will be held Friday, May 27, through Sunday, May 29, 2005 (Memorial Day weekend). The RTMC is held at YMCA Camp Oakes, five miles southeast of Big Bear City on State Route 38 at Lake Williams Road. The theme for 2005 RTMC is "The History of Astronomy". This year will also be an astroimaging contest, so dust off the cameras and CCDs at the next few star parties and click away. As always, RTMC is a great place to find bargains on astro-equipment, to attend fascinating astronomy presentations, to visit with other astro-enthusiasts and to generally relax and have a good time.

Finally, our next meeting is this coming weekend, Saturday, March 19. We will once again welcome guest speaker, Dr. Klaus Brasch. Klaus' presentation, "A Nickel Tour of the Great Observatories", will feature photos and an astronomer's perspective on many of the major (and minor) observatories he's traveled to over the years. This is sure to be a fascinating and enjoyable presentation.

I hope to see you all at the meeting and these other upcoming events.

Clear skies.

RTMC Astronomy EXPO May 27-30, 2005 Camp Oakes, Big Bear, CA

DAY USE

per person.....\$15.00
after May 1st...\$20.00

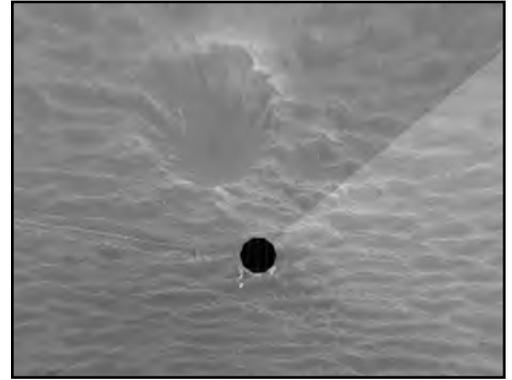
Questions...
(909) 948-2205

<http://www.rtmcastronomyexpo.org>

MARS ROVERS UPDATES

Opportunity's View, Sol 381 (Verical)

NASA's Mars Exploration Rover Opportunity used its navigation camera on the rover's 381st and 382nd martian days, or sols, (Feb. 18 and 19, 2005) to take the images combined into this 360-degree panorama. Opportunity had driven 64 meters (209 feet) on sol 381 to arrive at this location close to a small crater dubbed "Alvin." The location is catalogued as Opportunity's Site 43. This view is presented in a vertical projection with with geometric seam correction.

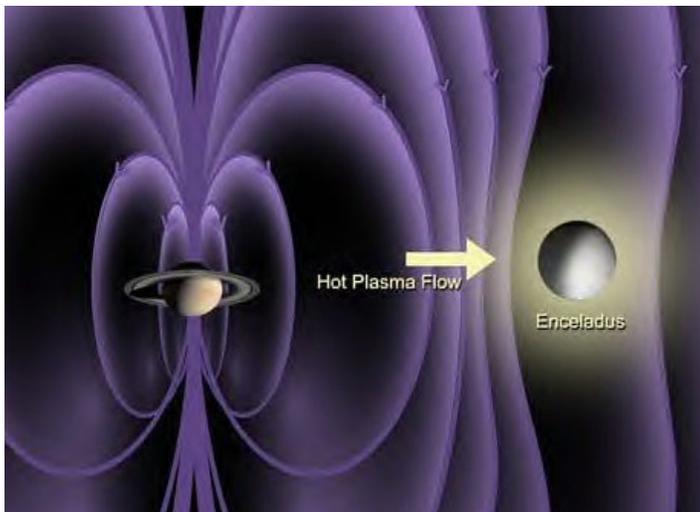


SPIRIT UPDATE: High Winds Make Spirit Full of Energy - sol 416-421, March 14, 2005

Spirit is in good health and is successfully using a new version of flight software. After completing an investigation of a rock dubbed "Watchtower," Spirit is returning to a soil area of interest informally labeled "Paso Robles." Tau, a measure of how much sunlight cannot penetrate the atmosphere, rose to a high of 1.5 on the afternoon of sol 418, but the opacity of the atmosphere has since dropped off. Energy output from Spirit's solar panels is up as of sol 420, indicating that some cleaning of dust off of the solar arrays may have occurred naturally.

As Spirit and Opportunity are the first solar-powered vehicles on the surface of Mars during the dust storm season, this is a learning experience. There are likely large transient dust storm events that reduce solar energy due to dust deposition on the solar arrays and blocking some sunshine, but also may sometimes raise energy levels by cleaning dust from arrays, possibly by winds associated with dust storms. The impact on other rover systems, such as cameras, will also be closely monitored.

CASSINI-HUYGENS UPDATES



Atmosphere on Enceladus

March 16, 2005

This artist concept shows the detection of an atmosphere on Saturn's icy moon Enceladus. The Cassini magnetometer instrument is designed to measure the magnitude and direction of the magnetic fields of Saturn and its moons. During Cassini's two close flybys of Enceladus -- Feb. 17 and March 9 -- the instrument detected a bending of the magnetic field around Enceladus.

The graphic shows the magnetic field observed by Cassini along its trajectory plotted in a vector form. Even though the spacecraft altitude was almost 500 kilometers (310 miles) at closest approach and the flyby was upstream of the moon (where the interaction

is expected to be weaker) Cassini's magnetometer observed bending of the magnetic field consistent with its draping around a conducting object, which indicates that the Saturnian plasma is being diverted away from an extended atmosphere.

For more information about the Cassini-Huygens mission visit <http://saturn.jpl.nasa.gov> . The magnetometer team homepage is <http://www.imperial.ac.uk/research/spat/research/cassini/> . Credit: NASA/JPL

March Outreaches

By Chris Clarke

The club has three outreaches scheduled this month. Two are for schools and one is for the Museum. On Wednesday, March 16, we will be at West Riverside Elementary School, from 6:30 to 8:00 pm (set up time is 6:00 pm). To get there, take the 60 Freeway to the Rubidoux offramp. Turn left onto Rubidoux and go up to Mission. Turn right on Mission and go to Riverview. Turn left on Riverview and the school is halfway down the block on the left side of the street. The school's address is 3972 Riverview. This is the school where our dear friend, and fellow member, Sharon Carey teaches. We'll have views of the first quarter moon and Saturn to share with the kids and their families.

On Wednesday, March 23, we will be at Kolb Middle School in Rialto. The address is 2351 N. Spruce St. Get on Riverside Ave., north of Highland Ave in Rialto. Go North on Riverside and go to Cactus/Country Club Drive. Turn Left (south) onto Cactus and go to Bohnert. Turn right on Bohnert and go to Spruce. Turn left on Spruce and the school is on the left side of the street. Telescopes will be set up in the quad. There is a road into the quad next to the office. Setup is 6:00 pm. The event is from 6:30 to 8:30 pm. We'll have a waxing gibbous moon and Saturn to observe. They are going to have pizza and drinks for us, too!

On Saturday, March 26, we'll set up scopes at the Museum for a "Saturn Party," from 7:00 to 8:30 pm. We'll also have a brilliant just-past full moon right next to Jupiter. Depending on the trees and lights of the parking lot, we will either set up on the main walkway or over on the lawn on the far east side of the parking lot—or both! Set up is 6:30 pm.

Remember, these events are lots of fun. If you recall your first look at Saturn through a telescope, you can pass on that thrill by being one to provide that new experience to someone else, especially a child. Let's just keep our fingers crossed and hope for clear weather!

If you have any questions about these events, just call me at home (909) 875-6694 or at work (909) 384-8539.

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 _____

NASA Space Place

Utterly Alien

by Dr. Tony Phillips

There's a planet in our solar system so cold that in winter its nitrogen atmosphere freezes and falls to the ground. The empty sky becomes perfectly clear, jet-black even at noontime. You can see thousands of stars. Not one twinkles.

The brightest star in the sky is the Sun, so distant and tiny you could eclipse it with the head of a pin. There's a moon, too, so big you couldn't blot it out with your entire hand. Together, moonlight and sunshine cast a twilight glow across the icy landscape revealing . . . what? twisted spires, craggy mountains, frozen volcanoes?

No one knows, because no one has ever been to Pluto.

"Pluto is an alien world," says Alan Stern of the Southwest Research Institute in Colorado. "It's the only planet never visited or photographed by NASA space probes."

That's about to change. A robot-ship called New Horizons is scheduled to blast off for Pluto in January 2006. It's a long journey: More than 6 billion kilometers (about 3.7 billion miles). New Horizons won't arrive until 2015.

"I hope we get there before the atmosphere collapses," says Stern, the mission's principal investigator. Winter is coming, and while it's warm enough now for Pluto's air to float, it won't be for long. Imagine seeing a planet's atmosphere collapse. New Horizons might!

"This is a flyby mission," notes Stern. "Slowing the spacecraft down to orbit Pluto would burn more fuel than we can carry." New Horizons will glide past the planet furiously snapping pictures. "Our best images will resolve features the size of a house," Stern says.

The cameras will also target Pluto's moon, Charon. Charon is more than half the size of Pluto, and the two circle one another only 19,200 kilometers (12,000 miles) apart. (For comparison, the Moon is 382,400 kilometers [239,000 miles] from Earth.) No wonder some astronomers call the pair a "double planet."

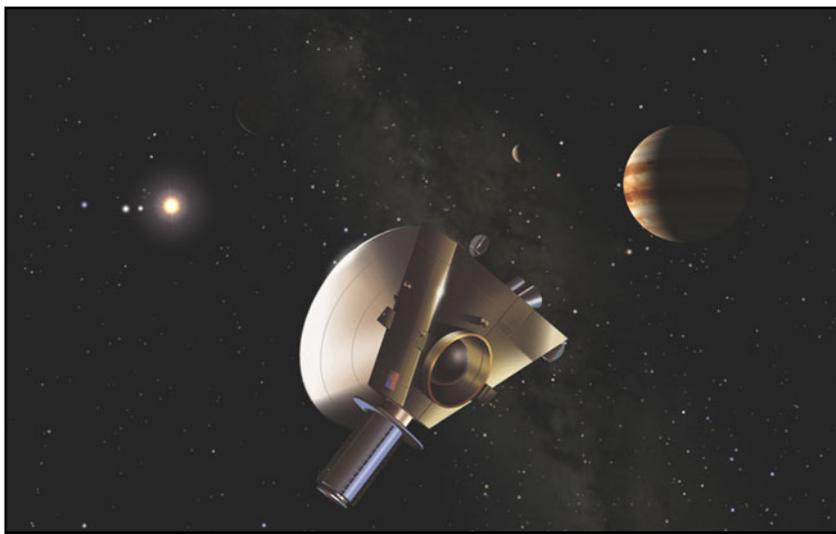
Researchers believe that Pluto and Charon were created billions of years ago by some terrific impact, which split a bigger planet into two smaller ones. This idea is supported by the fact that Pluto and Charon spin on their sides like sibling worlds knocked askew.

Yet there are some curious differences: Pluto is bright; Charon is darker. Pluto is covered with frozen nitrogen; Charon by frozen water. Pluto has an atmosphere; Charon might not. "These are things we plan to investigate," says Stern.

Two worlds. So alike, yet so different. So utterly alien. Stay tuned for New Horizons.

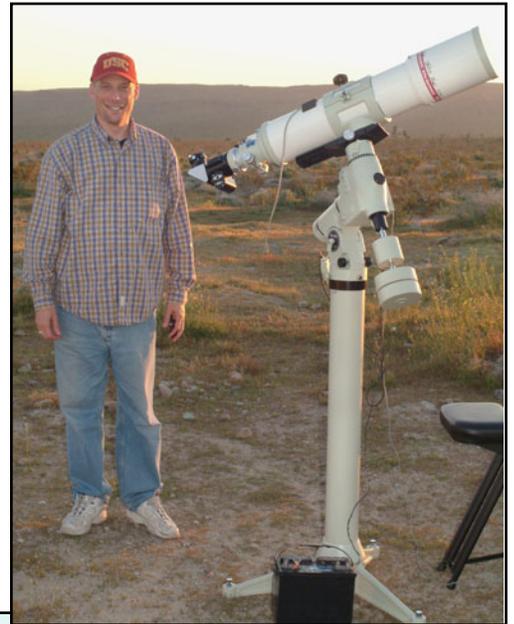
Find out more about the New Horizons mission at pluto.jhuapl.edu/. Kids can learn amazing facts about Pluto at spaceplace.nasa.gov/en/kids/pluto.

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



New Horizons spacecraft will get a gravity assist from Jupiter on its long journey to Pluto-Charon. Credit: Southwest Research Institute (Dan Durda)/Johns Hopkins University Applied Physics Laboratory (Ken Moscati).

Messier Marathon Star Party--March 12, 2005 Owl Canyon Campground



Photos by Bill Myerchin

**SBVAA Star Party at Owl Canyon Campground
Rainbow Basin Natural Area, Barstow, CA.**

Star Party: April 9th, 2005

See Tom Lawson, Star Party Coordinator

Guest Speaker: Klaus Brasch, Ph.D.

'A Nickel Tour of the Great Observatories'

MEETING: February 19, 2005

"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: 5:30PM, HOMETOWN BUFFET, LOMA LINDA



**SAN BERNARDINO VALLEY
AMATEUR ASTRONOMERS**

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