

THE PRAIRIE ASTRONOMER

The Official Newsletter Of The Prairie Astronomy Club, Inc.

March 2006

Volume 47 Issue #3

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 Hyde Observatory: www.hydeobservatory.info
 NEB-STAR: www.neb-star.org

Program

March Meeting: Visualizations of the Mars Reconnaissance Orbiter. Jack Dunn will demonstrate some new MRO software from NASA.

PAC-LIST: You may subscribe to the PAC listserv by sending an e-mail message to: imailsrv@prairieastronomyclub.org. In the body of the message, write "Subscribe PAC-List your-email-address@your-domain.com"

For example:
Subscribe pac-list stargazer@myISP.com

To post messages to the list, send to the address pac-list@prairieastronomyclub.org

Mahoney Star Parties
 May 19, June 16, July 14,
 August 18, September 15.

Nebraska Star Party
 July 23-28, 2006

Club Events

UNL Student Observatory

Open to the public
 March 24, 2006

PAC Club Meeting

Visualizations of the Mars Reconnaissance Orbiter

Tuesday, March 28, 2006 7:30pm
 Hyde Observatory

Club Star Party

Friday, March 31, 2006

PAC Club Meeting

Tuesday, April 25, 2006

Astronomy Day

Morrill Hall, UNL
 May 6, 2006

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The Prairie Astronomer is published monthly by the Prairie Astronomy Club, Inc. Membership expiration date is listed on the mailing label. Membership dues are: **Regular \$30/yr, Family \$35/yr.** Address all new memberships and renewals to: **The Prairie Astronomy Club, Inc., PO Box 5585, Lincoln, NE 68505-0585.** For other club information, please contact one of the club officers listed on the last page of this newsletter. Newsletter comments and articles should be submitted to: **Mark Dahmke, PO Box 80266, Lincoln, NE 68501 or mdahmke@4w.com**, no less than ten days prior to the club meeting. The Prairie Astronomy Club meets the last Tuesday of each month at Hyde Memorial Observatory in Lincoln, NE.

Secretary's Report

Vice-President Mark Dahmke called the meeting to order. There were 3 visitors. Mark discussed upcoming club events:

- The next club meeting will be Tuesday, March 28. The program will be "Mars Reconnaissance Orbiter" by Jack Dunn.
- The next club star party will be held March 31 at Jim Kvasnicka's family farm.
- The Mahoney Star Parties are scheduled for May 19, June 16, July 14, August 18, and September 15.
- The Beginning Astronomy class will take place in April 2006. The dates are Wednesday, April 5, 12, 19, and 26.
- The UNL Student Observatory will be open March 24, April 21, and May 5.
- Astronomy Day will be May 6. This is also UNL graduation day.
- The City of Lincoln will rededicate Holmes Park on June 10 to commemorate the completion of the park renovation. This event will take place from 5 PM to 8 PM, followed by an observing session at Hyde.
- The Nebraska Star Party is scheduled for July 23 – 28.

Treasurer's report: Lee Thomas reported that there are adequate funds in the main PAC checking account.

Hyde Observatory is open Saturdays from 7:00 to 10:00 pm. If you'd like to help at Hyde, contact volunteer coordinator Dave Churilla. The annual Hyde volunteer appreciation dinner will be March 7.

Jim Kvasnicka received a Messier Award from the Astronomical League for observing all 110 Messier objects.

Bob Leavitt gave a short presentation on the Night Sky Network, which PAC recently joined. The NSN supports outreach activities of amateur astronomy clubs by providing materials that can be used in public events like star parties and Astronomy Day.

Mark reviewed upcoming observing highlights for the month of March.

The meeting was adjourned to the program. Taylor Chonis presented the program "Observational Astronomy".

Submitted by,
Bob Leavitt

Club Telescopes – Checkout Policy

To check out one of the club telescopes, contact Mark Dahmke (475-3150) or mdahmke@4w.com. If you keep a scope for more than a week, please check in with Mark once a week, to verify the location of the telescope and how long you plan to use it. The checkout time limit will be two weeks, but can be extended if no one else has requested use of a club scope.

Hyde Observatory Volunteer Schedule

Date	Team Leader	Operators		Supervisor	Events
March					
3/25/2006	Jeff King	Bob Leavitt	Mitch Paine	Steve Lloyd	
April					
4/1/2006	Bill Wells	Joey Churilla	Dave Hamilton	Dave Churilla	
4/8/2006	Dan Delzell	Josh Machacek	Dave Brokofsky		
4/15/2006	Jeff King	Steve Lloyd	Jim Kvasnicka		
4/22/2006	Jeff King	Bob Kacvinsky	Dave Hamiton		
4/29/2006	Bill Wells	Josh Machacek	Dave Brokofsky	Dan Delzell	
May					
5/6/2006	Bob Leavitt	Mitch Paine	Josh Machacek		
5/13/2006	Jeff King	Joey Churilla	Jim Kvasnicka	Dave Churilla	
5/20/2006	Bill Wells	Bob Kacvinsky	Steve Lloyd		
5/27/2006	Dave Hamilton	Josh Machacek	Dave Brokofsky	Dan Delzell	
June (Tentative)					
6/3/2006	Bill Wells	Bob Leavitt	Jim Kvasnicka		
6/10/2006	Dan Delzell	Bob Kacvinsky	Joey Churilla	Dave Churilla	Waterfest-Solar viewing 5-7 PM
6/17/2006	Jeff King	Mitch Paine	Dave Brokofsky		
Summer Hours: April through September (Sundown to 11:00 PM)					
Winter Hours: October through March (7:00 PM to 10:00 PM)					

February Star Party – Bob Leavitt

We had a good turnout for last night's star party, with 15 people and 10 scopes on hand. The evening was clear, temperature was mild, and there was very little wind until about 9:00 pm. Then a stiff breeze came up out of the north and soon people began shutting down for the evening. Most people were able to get in an hour or two of observing, with good seeing conditions. Saturn was one of the featured objects of the night - very nice in Dave Churilla's 10" and in several other scopes.

I started with the Orion Nebula in my 8" SCT. At 57x it showed good contrast and lots of detail. On Saturn I used Dave's Powermate with a 35mm Ultrascopic eyepiece. This significantly improved the view - thanks Dave! On my scope the view of Saturn was good up to about 170x. After the wind came up I was able to continue observing for awhile (SCT's do have some advantages) and I took in some of the winter Messiers. Dave and Joey Churilla worked with their new equatorial mount and went searching for the Horsehead Nebula (Don't know if they found it for sure).

Jim Kvasnicka's family farm once again proved to be a good dark location for our star party, and I think everyone had a really good time. My thanks to everyone who attended this month's star party. Looking forward to next month!

Hyde Observatory “Volunteer of the Year Awards”

Hyde Observatory “Volunteer of the Year Awards” were given to Josh Macacek and Mark Dahmke at the Hyde Volunteer Appreciation Dinner held on March 7th at Mueller Planetarium.



Josh Machacek



Mark Dahmke



Jack Dunn presents award to Josh Machacek



Robotic NASA Craft Begins Orbiting Mars for Most-Detailed Exam

With a crucially timed firing of its main engines on March 10th, NASA's new mission to Mars successfully put itself into orbit around the red planet.

The spacecraft, Mars Reconnaissance Orbiter, will provide more science data than all previous Mars missions combined.

Signals received from the spacecraft at 2:16 p.m. Pacific Time after it emerged from its first pass behind Mars set off cheers and applause in control rooms at NASA's Jet Propulsion Laboratory, Pasadena, Calif., and at Lockheed Martin Space Systems, Denver.

"This is a great milestone to have accomplished, but it's just one of many milestones before we can open the champagne," said Colleen Hartman, deputy associate administrator for NASA's Science Mission Directorate. "Once we are in the prime science orbit, the spacecraft will perform observations of the atmosphere, surface, and subsurface of Mars in unprecedented detail."

The spacecraft traveled about 500 million kilometers (310 million miles) to reach Mars after its launch from Florida on Aug. 12, 2005. It needed to use its main thrusters as it neared the planet in order to slow itself enough for Mars' gravity to capture it. The thruster firing began while the spacecraft was still in radio contact with Earth, but needed to end during a tense half hour of radio silence while the spacecraft flew behind Mars.

"Our spacecraft has finally become an orbiter," said JPL's Jim Graf, project manager for the mission. "The celebration feels great, but it will be very brief because before we start our main science phase, we still have six months of challenging work to adjust the orbit to the right size and shape."

For the next half-year, the mission will use hundreds of carefully calculated dips into Mars' atmosphere in a process called "aerobraking." This will shrink its orbit from the elongated ellipse it is now flying, to a nearly circular two-hour orbit. For the mission's principal science phase, scheduled to begin in November, the desired orbit is a nearly circular loop ranging from 320 kilometers (199 miles) to 255 kilometers (158 miles) in altitude, lower than any previous Mars orbiter. To go directly into such an orbit instead of using aerobraking, the mission would have needed to carry about 70 percent more fuel when it launched.

The instruments on Mars Reconnaissance Orbiter will examine the planet from this low-altitude orbit. A spectrometer will map water-related minerals in patches as small as a baseball infield. A radar instrument will probe for underground layers of rock and water. One telescopic camera will resolve features as small as a card table. Another will put the highest-resolution images into broader context. A color camera will monitor the entire planet daily for changes in weather. A radiometer will check each layer of the atmosphere for variations in temperature, water vapor and dust.

"The missions currently at Mars have each advanced what we know about the presence and history of water on Mars, and one of the main goals for Mars Reconnaissance Orbiter is to decipher when water was on the surface and where it is now," said JPL's Dr. Richard Zurek, project scientist for the mission. "Water is essential for life, so that will help focus future studies of whether Mars has ever supported life."

The orbiter can radio data to Earth at up to 10 times the rate of any previous Mars mission. Besides sending home the pictures and other information from its own investigations, it will relay data from surface missions, including NASA's Phoenix Mars Scout scheduled for launch in 2007 and Mars Science Laboratory in development for 2009.

Additional information about Mars Reconnaissance Orbiter is available online at:

<http://www.nasa.gov/mro>

The mission is managed by JPL, a division of the California Institute of Technology, Pasadena, for the NASA Science Mission Directorate, Washington. Lockheed Martin Space Systems, Denver, is the prime contractor for the project and built the spacecraft.

Years of Observing Combined Into Best-Yet Look at Mars Canyon

A new view of the biggest canyon in the solar system, merging hundreds of photos from NASA's Mars Odyssey orbiter, offers scientists and the public an online resource for exploring the entire canyon in detail.

This canyon system on Mars, named Valles Marineris, stretches as far as the distance from California to New York. Steep walls nearly as high as Mount Everest give way to numerous side canyons, possibly carved by water. In places, walls have shed massive landslides spilling far out onto the canyon floor.

A simulated fly-through using the newly assembled imagery is available online at http://www.nasa.gov/mission_pages/mars/missions/odyssey/20060313.html The fly-through plus tools for wandering across and zooming into the large image are at <http://themis.asu.edu> .

"We picked Valles Marineris to make this first mosaic because it's probably the most complex, interesting feature on the entire planet," said Dr. Phil Christensen of Arizona State University, Tempe. He is the principal investigator for Mars Odyssey's versatile camera, the Thermal Emission Imaging System. "To understand many of the processes on Mars -- erosion, landsliding and the effects of water -- you really need to have a big-picture view but still be able to see the details."

Small parts of the canyon have been seen at higher resolution, but at 100 meters (328 feet) per pixel, the new view has sharper resolution than any previous imaging of the entire canyon.

In addition to the completed mosaic of Valles Marineris images, the camera team has also prepared an online data set of nearly the entire planet of Mars at 232 meters (760 feet) per pixel, the most detailed global view of the red planet. The team plans to post 100-meter-resolution mosaics of other regions of Mars in coming months.

Odyssey reached Mars in 2001. The Thermal Emission Imaging System began observing the planet systematically in February 2002 both in visible wavelengths and in infrared wavelengths, which are better for seeing surface details through Mars' atmospheric dust. As the spacecraft passes over an area, the camera records images of swaths 32 kilometers wide (20 miles wide). More than three years of observations made at infrared wavelengths during Martian daytime are combined into the assembled view of Valles Marineris and the global image data set.

Mars Odyssey is managed by NASA's Jet Propulsion Laboratory, a division of the California Institute of Technology, Pasadena, for NASA's Science Mission Directorate, Washington. Lockheed Martin Space Systems, Denver, is the prime contractor for the project and built the spacecraft. The orbiter began an extended mission in August 2004 after successfully completing its primary mission.

Podcasts Now Available from NASA/JPL Website

If you have an iPod or MP3 player, you can now download podcasts from JPL and other websites. Go to <http://www.jpl.nasa.gov/> and click on "Audio" to find a variety of audio files. Stories about the arrival of Mars Reconnaissance Orbiter, finding water on Enceladus, Cassini and other feature articles are now available.

Events Calendar

April 2006						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
						1  Sun: 18:10 - 06:50 Hyde Observatory Open to the Public
2  Sun: 19:09 - 07:51	3  Sun: 19:07 - 07:52	4  Sun: 19:06 - 07:53	5  Sun: 19:04 - 07:55	6  Sun: 19:02 - 07:56 Moon close to Saturn	7  Sun: 19:01 - 07:57	8  Sun: 18:57 - 07:58 Northern May Ophiuchids; Hyde Observatory Open to the Public
9  Sun: 18:56 - 07:59 Mercury half phase	10  Sun: 18:54 - 08:00	11  Sun: 18:53 - 08:01	12  Sun: 18:51 - 08:02	13  Sun: 18:50 - 08:03	14  Sun: 18:48 - 08:04	15  Sun: 18:47 - 08:05 Moon close to Jupiter; Hyde Observatory Open to the Public
16  Sun: 18:45 - 08:06 Lyrids	17  Sun: 18:43 - 08:07 Moon close to Antares	18  Sun: 18:42 - 08:08 Venus close to Uranus	19  Sun: 18:41 - 08:09	20  Sun: 18:39 - 08:10	21  Sun: 18:38 - 08:11	22  Sun: 18:36 - 08:12 Hyde Observatory Open to the Public
23  Sun: 18:35 - 08:13	24  Sun: 18:33 - 08:14	25  Sun: 18:32 - 08:16 PAC Club Meeting	26  Sun: 18:31 - 08:17	27  Sun: 18:29 - 08:18	28  Sun: 18:28 - 08:19 Club Star Party	29  Sun: 18:27 - 08:20 Hyde Observatory Open to the Public

Moon phase images by: António Cidadão

**Directions to Olive Creek
Observing Site**

Shorter:

Take Hwy 77 South out of Lincoln until you get to the Crete corner (junction Hwy 77 and Hwy 33). Go West on Hwy 33 (toward Crete) until you get to SW 72 St. Turn Left (South) on SW 72 St. and go about 5 miles until you get to SW Panama Rd. Turn right (West) until you get to SW 100 St. (SW 100 St does NOT go through to Hwy 33). Turn Left (South) on SW 100 St and go about 1 to 1 1/2 miles until you see the sign and entrance to Olive Creek (this is the West side of the Park). It's on your left (East) side of the road.
More Black Top:

Take Hwy 77 South out of Lincoln until you get to the Crete corner (junction Hwy 77 and Hwy 33). Go West on Hwy 33 (toward Crete) until you get to about SW 114 St. - the first intersection after SW 100 St. (forgot to look at this street sign, sorry - you'll see a sign for Olive Creek though at this road- but don't count on anymore signs after that, I didn't see any). Turn Left (South) on SW 114 St and go about 5 miles or so until you get to SW Panama Rd (you'll see a church and small school on your right). Turn Left (East) and go about a mile to SW 100 St, then turn Right (South) and go 1 to 1 1/2 miles until you see the Olive Creek entrance and sign (on your left hand side of the road).

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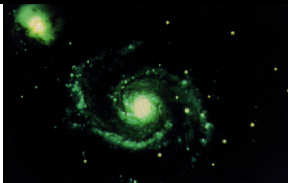
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**The Prairie Astronomer
c/o The Prairie Astronomy Club, Inc.
P.O. Box 5585
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First Class Mail

**Next PAC Meeting
March 28, 2006
7:30 PM
Hyde Observatory**

«TITLE» «FIRSTNAME» «MIDDLENAME» «LASTNAME» «RENEWALDATE»
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«ADDRESS1»
«ADDRESS2»
«CITY», «STATE» «ZIP»