

Skywatchers

Newsletter of the China Lake Astronomical Society

Volume 47 No. 2

February 1, 2010

NEXT MEETING 7:30 p.m., Monday, February 1, 2010

Maturango Museum, 100 East Las Flores Avenue, Ridgecrest, California

PROGRAM FOR THE MARCH 1 MEETING –THE WINTER SKY

Although we don't schedule any CLAS star parties in January or February, the winter sky offers some outstanding objects. Let's talk about them and look at pictures of them at our February meeting. If you have pictures of your favorite winter objects, bring them along.

DATES TO KEEP IN MIND

Monday, February 1, 2010: Regular CLAS Meeting at the Maturango Museum, 7:30 p.m.

Tuesday, February 16, 2010: Deadline for next Skywatchers Newsletter.

Monday, March 1, 2010: Regular CLAS Meeting at the Maturango Museum in Ridgecrest, 7:30 p.m.

STAR PARTIES WILL RESUME MARCH 12, 2010

IMPORTANT ANNOUNCEMENT - 2010 ROYAL ASTRONOMICAL SOCIETY HANDBOOKS AND CALENDARS ARE NOW AVAILABLE

For many years, the China Lake Astronomical Society has provided the RASC Observer's Handbook to our membership. The retail price for a single copy (delivered) is \$32.45 US. We get them at a group rate, and share the savings with our members. If you buy in person from C.L.A.S., we are charging \$20.00 for the handbook, and \$12.00 for the calendar. Calendar and Handbook will be sold together for the combined price of \$30.00. If you picked up calendars at the December meeting, your handbook can be discounted.

Most of you know all about the handbooks and calendars. Suffice to say that the *Observer's Handbook* is 356 pages of astronomical data, which is presented as tables, charts and annual and daily information. The calendars also present useful information, along with great astronomical photographs.

The publications will be available at the February meeting, or contact Carroll Evans at 760-375-5681 or Roger Brower at 760-375-1181 to pick up a copy locally.

THE ANNUAL ELECTION OF OFFICERS WAS HELD AT THE DECEMBER MEETING

Earl Wilson, Ted Hodgkinson, and Roger Brower will continue as President, Secretary, and Treasurer. Bruce Churchill will continue as Vice-President, however, the duties of program chairman will be shared. Your suggestions for programs are encouraged.

THE SKY IN FEBRUARY by Roger Brower

1. Venus moves out of the sun's glare and into the evening sky this month. It will, however, remain very low. Look for it in the west-southwest after midmonth.
2. Saturn remains in the evening sky this month. It rises about 10:00 p.m. on February 1st and 8:00 p.m. on February 28th. Look for it in the east after these times.
3. Mercury remains in the morning sky this month where it will be visible in the southeast the first half of February before fading into the sunrise.
4. Jupiter moves from the evening sky into the sun's glare this month. Look for it low in the west-southwest soon after sunset at the start of the month.
5. Mars is just past opposition and so will be a prominent all night object throughout February. Look for it rising in the east around sunset.

ASTRONOMY ON THE INTERNET

Videos

What are the Lagrange points? <http://www.youtube.com/watch?v=kD9qx6ZKc6k>

Galaxies Classification (High Quality) Use the pause button to stop and read the text.
http://www.youtube.com/watch?v=EG_0YCaCc1Q

What is the nearest galaxy to the Milky Way?
http://www.youtube.com/watch?v=8imxPVIr_u0&feature=related

Size comparison – From a Molecule to a Galaxy in One Single Shot:
<http://www.youtube.com/watch?v=fUAFqkS7y9M&feature=related>

Are we alone?
<http://www.youtube.com/watch?v=QArB6u3LXQ4&feature=PlayList&p=2F00C7F848AF3A6C&index=9>

General Astronomy

KryssTal is an eclipse chaser in the UK who has put up a splendid series of introductory essays on astronomy (as well as a number of other subjects) on his exhaustive website. The material is well organized and includes an outstanding discussion of stellar properties and stellar evolution, as well as an informative cosmic distance scale. The entire collection of articles is a browser's feast: <http://www.kryssstal.com/astro.html#solarsys>

OPPORTUNITY, A PRESS RELEASE FROM NASA

ROVER GIVES NASA AN "OPPORTUNITY" TO VIEW INTERIOR OF MARS

PASADENA, Calif. -- NASA's Mars exploration rover Opportunity is allowing scientists to get a glimpse deep inside Mars.

Perched on a rippled Martian plain, a dark rock not much bigger than a basketball was the target of interest for Opportunity during the past two months. Dubbed "Marquette Island," the rock is providing a better understanding of the mineral and chemical makeup of the Martian interior.

"Marquette Island is different in composition and character from any known rock on Mars or meteorite from Mars," said Steve Squyres of Cornell University in Ithaca, N.Y. Squyres is principal investigator for Opportunity and its twin, Spirit. "It is one of the coolest things Opportunity has found in a very long time."

During six years of roving, Opportunity has found only one other rock of comparable size that scientists conclude was ejected from a distant crater. The rover studied the first such rock during its initial three-month mission. Called "Bounce Rock," that rock closely matched the composition of a meteorite from Mars found on Earth.

Marquette Island is a coarse-grained rock with a basalt composition. The coarseness indicates it cooled slowly from molten rock, allowing crystals time to grow. This composition suggests to geologists that it originated deep in the crust, not at the surface where it would cool quicker and have finer-grained texture.

"It is from deep in the crust and someplace far away on Mars, though exactly how deep and how far we can't yet estimate," said Squyres.

The composition of Marquette Island, as well as its texture, distinguishes it from other Martian basalt rocks that rovers and landers have examined. Scientists first thought the rock could be another in a series of meteorites that Opportunity has found. However, the much lower nickel content in Marquette Island indicates a Martian origin. The rock's interior contains more magnesium than in typical Martian basalt rocks Spirit has studied. Researchers are determining whether it might represent the precursor rock altered long ago by sulfuric acid to become the sulfate-rich sandstone bedrock that blankets the region of Mars that Opportunity is exploring.

"It's like having a fragment from another landing site," said Ralf Gellert of the University of Guelph, in Ontario, Canada. Gellert is lead scientist for the alpha particle X-ray spectrometer on Opportunity's robotic arm. "With analysis at an early stage, we're still working on some riddles about this rock."

The rover team used Opportunity's rock abrasion tool to grind away some of Marquette Island's weathered surface and expose the interior. This was the 38th rock target Opportunity has ground into and one of the hardest. The tool was designed to grind into one Martian rock; and this rock may not be its last.

"We took a conservative approach on our target depth for this grind to ensure we will have enough of the bit left to grind the next hard rock that Opportunity comes across," said Joanna Cohen of Honeybee Robotics Spacecraft Mechanisms Corp., in New York, which built and operates the tool.

Opportunity currently is about 30 percent of the way on a 12-mile trek begun in mid-2008 from a crater it studied for two years. It is en route toward a much larger crater, Endeavour. The rover traveled 3.3 miles in 2009, farther than in any other year on Mars. Opportunity drove away from Marquette Island on Jan. 12.

"We're on the road again," said Mike Seibert, a rover mission manager at NASA's Jet Propulsion Laboratory in Pasadena, Calif. "The year ahead will include lots more driving, if all goes well. We'll keep pushing for Endeavour crater but watch for interesting targets along the way where we can stop and smell the roses."

Since landing on Mars in 2004, Opportunity has made numerous scientific discoveries, including the first mineralogical evidence that Mars had liquid water. After working 24 times longer than originally planned, Opportunity has driven more than 11 miles and returned more than 133,000 images. JPL manages the rovers for NASA's Science Mission Directorate in Washington.

MEMBERSHIP INFORMATION

Basic CLAS dues are \$20.00 per year, which includes the Skywatchers Newsletter. As a benefit of membership, you may also receive Astronomy Magazine and/or Sky and Telescope Magazine. The fee schedule is as follows:

Basic membership	\$20.00 per year
Membership with Astronomy magazine	\$54.00 per year
Membership with Sky and Telescope magazine	\$53.00 per year
Membership with both S & T and Astronomy	\$87.00 per year

Send your check to: Roger Brower, Treasurer, China Lake Astronomical Society, P.O. Box 1783, Ridgecrest, CA 93556.

PRESIDENT – Earl Wilson – 760-876-5455 (email zearl.email@gmail.com)

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WESTERN AMATEUR ASTRONOMERS WEB SITE <http://www.waa.av.org/>

Meetings of the China Lake Astronomical Society are at the Maturango Museum at 7:30 p.m. on the first Monday evening of each month, except when the first Monday is a holiday.

**SKYWATCHERS, Newsletter of the
CHINA LAKE ASTRONOMICAL SOCIETY
POST OFFICE BOX 1783
RIDGECREST, CA 93556-1783**

FIRST CLASS

NEXT MEETING: 7:30 p.m., MONDAY FEBRUARY 1, 2010: “THE WINTER SKY” AT THE MATURANGO MUSEUM, 100 EAST LAS FLORES AVE., RIDGECREST, CALIFORNIA

CLAS WEB PAGE <http://www.chinalakeastro.org>

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