

Skywatchers

Newsletter of the China Lake Astronomical Society

Volume 46 No. 5

July 1, 2009

NEXT MEETING 7:30 p.m., Monday, July 6, 2009

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

PROGRAM FOR THE JULY 6 MEETING – THE SPITZER SPACE TELESCOPE

The program for July will be a NASA video presentation about the Spitzer Space Telescope, including a biography of Professor Lyman Spitzer, for whom the telescope is named. Images taken with the telescope will be shown. The video presents an introduction to infrared light as part of the electromagnetic spectrum. The following background information is adapted from NASA's Spitzer Space Telescope website.

The Spitzer Space Telescope (formerly SIRTf, the Space Infrared Telescope Facility) was launched into space by a Delta rocket from Cape Canaveral, Florida on 25 August 2003. During its mission, Spitzer has obtained images and spectra by detecting the infrared energy, or heat, radiated by objects in space between wavelengths of 3 and 180 microns (1 micron is one-millionth of a meter). Most of this infrared radiation is blocked by the Earth's atmosphere and cannot be observed from the ground.

Consisting of a 0.85-meter telescope and three cryogenically-cooled science instruments, Spitzer is the largest infrared telescope ever launched into space. Its highly sensitive instruments give us a unique view of the Universe and allow us to peer into regions of space which are hidden from optical telescopes. Many areas of space are filled with vast, dense clouds of gas and dust which block our view. Infrared light, however, can penetrate these clouds, allowing us to peer into regions of star formation, the centers of galaxies, and into newly forming planetary systems. Infrared also brings us information about the cooler objects in space, such as smaller stars which are too dim to be detected by their visible light, extra-solar planets, and giant molecular clouds. Also, many molecules in space, including organic molecules, have their unique signatures in the infrared.

Because infrared is primarily heat radiation, the telescope must be cooled to near absolute zero (-459 degrees Fahrenheit or -273 degrees Celsius) so that it can observe infrared signals from space without interference from the telescope's own heat. Also, the telescope must be protected from the heat of the Sun and the infrared radiation put out by the Earth. To do this, Spitzer carries a solar shield and was launched into an Earth-trailing solar orbit. This unique orbit places Spitzer far enough away from the Earth to allow the telescope to cool rapidly without having to carry large amounts of cryogen (coolant). This innovative approach has significantly reduced the cost of the mission. (Editor's note: The telescope was launched with 95 gallons of liquid helium on board, which is apparently not considered a large amount.)

DATES TO KEEP IN MIND

Monday, July 6, 2009: Regular CLAS Meeting at the Maturango Museum, 7:30 p.m.

Thursday, July 16, 2009: Museum Observatory public viewing session, 8:30 p.m.

Friday, July 17, 2009: Next public star party, see details below.

Wednesday, July 22, 2009: Deadline for next Skywatchers Newsletter.

Monday, August 3, 2009: Regular CLAS Meeting at the Maturango Museum in Ridgecrest, 7:30 p.m.

STAR PARTY SCHEDULE FOR THE 2009 SEASON

Star Parties will be held on the dates listed below. Star Parties are an activity where members and guests come together to view the skies. If you have a telescope, bring it; if not, come and look through someone else's. They are held at a site in the open desert south of Ridgecrest. To reach the site from Ridgecrest, go south on China Lake Boulevard 6.2 miles from its intersection with Ridgecrest Boulevard. Continue straight across Highway 395 and you will be on Brown Road (Old Highway 395). Follow Brown Road as it curves to the right and goes west. After 2.3 miles, there will be a 30-inch orange cone on the left. Turn left and follow the dirt road marked by 12-inch cones. The CLAS star party is 0.5 miles along this road. Signs and cones will be put out about a half hour before viewing starts. Call Carroll Evans 760-375-5681, or Bruce Churchill 760-375-7247, for more information.

Friday, July 17: Signs out at 8:30 p.m., Star viewing at 9:00 p.m.

Friday, August 21: Signs out at 8:30 p.m., Star viewing at 9:00 p.m.

Friday, September 18: Signs out at 7:30 p.m., Star viewing 8:00 p.m.

Friday, October 16: Signs out at 7:00 p.m., Star viewing at 7:30 p.m.

Friday, November 13: Signs out at 5:30 p.m., Star viewing at 6:00 p.m.

Some public star parties are to be held at the Maturango Museum's observatory, on the Thursday evening just before the C.L.A.S. public star parties.

THE SKY IN JULY by Roger Brower

1. Venus remains in the morning sky this month where it is joined by Mars. Look for them low in the east moving between the Pleiades and the Hyades clusters in Taurus.
2. Saturn remains a fine evening object and will be visible in the southeast soon after sunset throughout the month. The rings are closing (getting more edge-on) so they will become less brilliant throughout the summer.
3. Mercury is barely visible in the morning sky for only the first few days of the month. Look for it very low in the east-northeast soon before sunrise.
4. Jupiter moves to the evening sky this month where it rises about 11PM at the beginning of the month and then earlier each night. Look for it in the south-southeast before dawn for the entire month.

NATIONAL GEOGRAPHIC ARTICLE ABOUT FUTURE TELESCOPES

The July issue of National Geographic has an article by Timothy Ferris entitled "Cosmic Vision," which discusses a new generation of giant telescopes. This 18-page story tells of the new gigantic earth-based telescopes that are under construction, or being planned. The biggest of all will be the 42-meter European Extremely Large Telescope.

MY TRIP TO FLAGSTAFF by Carroll Evans

My first visit to the Lowell Observatory was in early summer of 1953, and there have been several visits since. Eventually, I started making a modest annual contribution to the observatory, and thus became a "Friend of Lowell Observatory." From time to time, Lowell Observatory hosts special events, limited to Friends. One such event was scheduled for early June, so I made plans to attend.

On Friday, June 5, I headed east, picking up Interstate 40 at Barstow. I put my vehicle on cruise control at the legal speeds, and arrived in Flagstaff, in time for my evening meal. On Saturday morning, I headed east again,

to the Meteor Crater. Now, most of you know that some 50,000 years ago a large piece of nickel-iron paid an unexpected visit to Northern Arizona. The impact made a huge hole in the ground, some 3400 feet across and 600 feet deep. Estimates put the size of the meteorite at 150 feet in diameter, and a weight of 63,000 tons. Recovered fragments of this meteorite are now all over the world, having been, for the most part, legally purchased. Some few are even in my own living room. The crater and surrounding area are privately held. Meteor Crater Enterprises operates a museum, and attracts visitors using all the standard means. The museum does a good job of telling the story of impacts by extra-planetary objects. One object on display is the "basket meteorite." This item had been on display at the museum until August of 1968, when it was stolen. Early this year a Wisconsin man who had bought it at a yard sale for \$10.00 returned it to its home. For three years he did not know what he had, and even used it to hold down his young grandson's plastic basketball stand. In time, he found out that it was a meteorite, in fact, the stolen one. At that time, he arranged to return it in person. The museum rewarded him with a thousand dollars.

I studied meteoritics at UCLA in the early 50's, and Professor Frederick Leonard told us that there were two things that we must do if we visited the crater. One was to walk the trail to the bottom of the crater, and the other was to walk the entire circumference of the rim. Well, in 1953 I did walk to the bottom of the crater, and back out. It is a good thing that I did it then, not only because I was younger, but also because it is no longer allowed.

This time I took the free escorted rim walk, which takes you out one-half mile. It was a worthwhile thing to do, in spite of the high wind. You can still walk the entire rim, but a staff member must accompany you, which is not a bad idea.

Saturday evening I went to Lowell Observatory, as a casual tourist, arriving at a few minutes after five o'clock. At that time, I was reminded that the observatory closes at five, to reopen at 5:30. A separate admission fee is required for the evening. I waited for the re-opening, and as a Friend got in free. I looked at the exhibits in the Steele Visitor Center, and watched their now fully automated slide show. It was a rather cloudy evening, and I chose not to attempt to view through the telescopes. As I left the observatory, I was treated to a view of the nearly full Moon rising over Flagstaff.

Sunday evening, when the observatory is closed to the public, I arrived for the Friend's special event. At 5:30 we were let in, and taken though the visitor center to the outside garden area. There were hors d'oeuvres and drinks, and conversation with staff and other Friends. We then went back inside the Steele Center to look at, and possibly bid on, items in a silent auction. Following which we assembled in the auditorium for remarks by the now retired long-time Lowell employee and director, Bob Millis. After meeting the new director, Dr. Eileen Friel, we were treated to two scientific talks about spots on stars, the first about spots which can now be detected on some other stars, and the second about spots on our very own star, i.e. sunspots. Sunspots are now at a minimum, and seem to be taking their time to increase in number. The impression I got from the talk is that it is best not to attempt to predict sunspots, just wait for them to appear. We then hurried up to the Rotunda exhibit area, housed in the original visitor center. We were given a preview of the upcoming exhibit about Lowell Observatory's participation in the Apollo Moon Project, in the late 60s. I noticed a clever gimmick on the wall near the entrance. Visitors were given a chance to "vote with their wallets" on the subject of Pluto's designation. You could choose to put money in one of three slots: Planet, Dwarf Planet, or "I don't care." Considering the location, I added a dollar to "Planet." The totals are posted, and "Planet" is way ahead.

The evening concluded with observations through the three telescopes available for public viewing. On my way to the Clark 24-inch refractor, I had a look at Saturn through a portable Dobsonian. Through the Clark Telescope, I was able to see the nearly edge-on rings of Saturn and view four of its moons. Next, I went to the 16-inch McAllister scope to see the quadruple star Mizar.

Lowell Observatory is to be complimented for their excellent Visitor Center and its fine exhibits, and especially commended for their excellent programs in astronomical research. Be sure and stop by sometime.

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)
VICE-PRESIDENT – Bruce Churchill - 760-375-7247 (email rbc605gem@yahoo.com)
SECRETARY – Ted Hodgkinson - 661- 824-2738 (email ghodkinson@sbcglobal.net)
TREASURER – Roger Brower - 760-375-1181 (email brower@iwvisp.com)
NEWSLETTER EDITOR – Carroll Evans Jr. - 760-375-5681 (email clevans@ridgenet.net)

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

Meetings of the China Lake Astronomical Society are held 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 JULY 6, 2009: “SPITZER SPACE TELESCOPE” AT THE MATURANGO MUSEUM, 100 EAST LAS FLORES AVE., RIDGECREST, CALIFORNIA

**CLAS WEB PAGE <http://www.chinalakeastro.org>
INDEX OF CLAS NEWSLETTERS <http://www.ridgenet.net/~clevans/clas/>**