Skywatchers

Newsletter of the China Lake Astronomical Society

Volume 47 No. 8 August 1, 2010

NEXT MEETING 7:30 p.m., Monday, August 2, 2010
Maturango Museum, 100 East Las Flores Avenue, Ridgecrest, California

PROGRAM FOR THE AUGUST 2 MEETING -- SOLAR SYTEM BOUNDARIES

How big is our solar system? It might seem reasonable to measure its size by the distance of the furthest object orbiting the sun. Others define it as the boundary between the sun's heliosphere and the interstellar medium. An International Boundary Explorer (IBEX) is underway to explore this boundary, known as the heliopause. We'll talk about the nature of the heliopause and the IBEX mission at our August 2 meeting.

DATES TO KEEP IN MIND

Monday, August 2, 2010: Regular CLAS Meeting at the Maturango Museum, 7:30 p.m.
Thursday, August 5, 2010: Star Party for at the Maturango Museum Observatory.
Friday, August 6, 2010: Regular CLAS Star Party, see below.
Tuesday, August 31, 2010: Deadline for next Skywatchers Newsletter.
Monday, September 13, 2010: Regular CLAS Meeting at the Maturango Museum in Ridgecrest, 7:30 p.m.

STAR PARTY SCHEDULE FOR THE 2010 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 6.5 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, August 6: Signs out at 8:30 p.m., Star viewing at 9:00 p.m.
Friday, September 10: Signs out at 7:30 p.m., Star viewing 8:00 p.m.
Friday, October 8: Viewing moved to the annual Cerro Coso Community College Star Party and Barbeque.
Friday, November 5: Signs out at 6:30 p.m., Star viewing at 7:00 p.m.

MUSEUM STAR PARTIES

Public star parties are scheduled, weather permitting, at 8:30 p.m. at the Maturango Museum's observatory, on Thursday evenings, August 5 and September 9.

THE SKY IN AUGUST by Roger Brower

1. Venus, Mars and Saturn all remain in the evening sky this month. They start the month within 7.5 degrees of each other low in the west. They separate, get lower, and move to the west-southwest as the month progresses.

2. Mercury also remains in the evening sky the first half of the month but remains very low in the west. Look for it in the west-northwest just after sunset.

3. Jupiter also remains in the evening sky this month but doesn't rise until 10:30 p.m. at the start of the month and 8:30PM at the end of the month. Look for it in the east late in the evening.

4. The big event this month is the annual Perseid meteor shower, which peaks on the nights of August 11th and 12th. This year the shower occurs just two days after new moon so the seeing should be great.

A YOUTUBE MOVIE OF THE STARS IN THE SOUTHERN HEMISPHERE – Dick Buchroeder

This YouTube site has a beautiful, professionally made short-subject movie of the Southern Skies from Chile. Be sure to choose 720P high resolution and enlarge to fill your screen.

http://www.youtube.com/watch?v=8Gbl2wQ-YeM

PLANET OR A COMET? NEW ROCK IS A BIT OF BOTH

By Michael D. Lemonick from Time/CNN online

When he first spotted the planet Uranus through his homemade telescope back in 1781, the professional musician and amateur astronomer William Herschel at first believed he had discovered a comet. But right from the start, he knew it was no ordinary comet: it had no tail, not even a rudimentary one, and everyone knew comets had tails.

Herschel was both wrong and right. He was wrong to believe that no planets existed beyond the five that had been known since the time of the ancient Greeks and that what he had spotted must therefore have been something else. But he was right to believe that only comets have tails (at least when they're within shouting distance of the sun) and that planets never do

.

That's the way it works in our solar system anyway. But since astronomers started spotting worlds orbiting other stars back in the 1990s, it has become clear that our family of planets isn't the only possible kind. Indeed, the very first exoplanets ever found shattered that parochial belief: the new worlds were huge, like Jupiter, but hugged their stars so tightly that they completed a full orbit in just a few days.

And now, one of these so-called "hot Jupiters" has also demolished the idea that planets don't have tails. Careful measurements by the Hubble telescope of a world called HD 209458, about 150 light-years from Earth, show that the planet's atmosphere is continually shedding hot gas. The gas is then caught by the star's powerful particle wind and shaped into a tail that would put any comet to shame.

Astronomers have been watching this planet carefully ever since it was first discovered back in 1999. It turns out that HD 209458 is aligned so it crosses directly in front of its star once every orbit. When that happens — every three days or so — starlight passes through the planet's atmosphere on its way to Earth. By looking at how the light is distorted, the scientists have learned that the planet's atmosphere contains, among other things, water vapor, methane, carbon monoxide and carbon dioxide — similar to our own atmosphere in some ways.

They've also been able to figure out how the atmosphere is moving: HD 209458 is so close to its star that its blanket of gas heats up to a searing 2,000°F (1,100°C) or so, driving winds of 7,000 m.p.h. (11,000 km/h) and forcing the outer layers of gas to spew into space like steam boiling from a teakettle, some of it at speeds of up to 22,000 m.p.h. (35,000 km/h). That ongoing blast keeps the planet's tail perpetually replenished. Eventually, this process could consume the entire planet, burning it away to nothing, but that would take something like a trillion years. By then, the star itself will be long gone.

As for the scientific importance of this discovery, a tail coming from a planet is certainly a curiosity. What matters more is that scientists could tease out all of this information without ever seeing the planet directly, using an instrument called the Cosmic Origins Spectrograph. With devices like this, and with even more powerful instruments on the upcoming James Webb Space Telescope, astronomers hope to probe smaller, more Earth-like exoplanets to see if their atmospheres might be even more similar to ours and bear the chemical signatures of life.

This hot, comet-like planet, in short, is just a warm-up.

PROBE TAKES DETAILED PICTURES OF CRATER-COVERED ASTEROID

(CNN) -- A European space probe headed toward its next target Sunday after sending back detailed images of an asteroid that scientists hope will increase understanding of how the solar system evolved.
Pictures of the asteroid Lutetia from the Rosetta probe's deep space fly-by Saturday are some of the most detailed ever taken, the European Space Agency said.

The images, taken while the probe raced by at 15 kilometers (9 miles) per second, show a deeply pockmarked, irregular rock -- possibly left over from the birth of the solar system.

Holger Sierks with the Max Planck Institute for Solar System Research described the asteroid as "a very old object" in a statement Saturday. "Tonight we have seen a remnant of the solar system's creation," he said. The surface of the asteroid, shaped like a big potato, has deep craters covering its 130-kilometer length. The Rosetta craft came within 3,162 km (1,965 miles) of Lutetia, orbiting just beyond Mars.
The probe spent several hours shooting images of the irregular shaped space rock, circling more than 450 million km (280 million miles) out from the sun. The space agency says its OSIRIS camera was able to capture detail down to just a few dozen meters.

The next stop for the Rosetta spacecraft -- named for the stone that helped decipher Egyptian hieroglyphics -- is comet Churyumov-Gerasimenko. If all goes according to plan, the probe will intercept the comet in 2014. The two will travel in tandem for several months as the comet hurtles from near Jupiter's orbit toward the Sun, with Rosetta finally touching down on the surface to take samples.

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
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FIRST CLASS

NEXT MEETING: 7:30 p.m., MONDAY AUGUST 2, 2010: SOLAR SYTEM BOUNDARIES
AT THE MATURANGO MUSEUM, 100 EAST LAS FLORES AVE., RIDGECREST, CALIFORNIA

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