

Skywatchers

Newsletter of the China Lake Astronomical Society

Volume 47 No. 6

June 1, 2010

NEXT MEETING 7:30 p.m., Monday, June 7, 2010

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

PROGRAM FOR THE JUNE 7 MEETING – GRAVITY PROBE B

C.L.A.S. member Richard Rynne will present a DVD about the Gravity Probe B NASA Physics Mission. The mission was intended to investigate Einstein's 1916 general theory of relativity—his theory of gravity. GP-B uses four spherical gyroscopes and a telescope, housed in a satellite in a polar orbit, some 400 miles above the Earth, to measure with unprecedented accuracy, two extraordinary effects predicted by the general theory of relativity: 1) the geodetic effect—the amount by which the Earth warps the local spacetime in which it resides; and 2) the frame-dragging effect—the amount by which the rotating Earth drags its local spacetime around with it.

Now, this may seem esoteric (= far out), but the entire story is one of long term planning, and coping with anomalies in the data which had to be accounted for. It is a story of patience and preparation, followed by persistence in data reduction. This description was taken from the following URL:
http://einstein.stanford.edu/content/fact_sheet/GP-B_Nutshell-0307.pdf.

DATES TO KEEP IN MIND

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

Thursday, July 8, 2010: Special Star Party for Cub Scouts at the Maturango Museum Observatory.

Friday, June 11, 2010: Regular CLAS Star Party, see below.

Tuesday, June 22, 2010: Deadline for next Skywatchers Newsletter.

Monday, July 5, 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, June 11: Signs out at 8:30 p.m., Star viewing at 9:00 p.m.

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

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, June 10, August 5 and September 9.

THE SKY IN JUNE by Roger Brower

1. A partial lunar eclipse occurs on June 26, 2010, for locations surrounding the Pacific Ocean. The shadow of Earth will pass in front of half of the moon with the penumbral phase starting at 3:16 a.m. PDT. The eclipse will last a little more than two and a half hours; however, for many observers in western North America the moon will set during the eclipse.

2. Venus remains brilliant in the evening sky this month. Look for it in the west-northwest near the beehive cluster in Cancer soon after sunset.

3. Mars remains in the evening sky. Look for it high in the southwest in Leo after sunset. The first part of the month it is very near Regulus.

4. Saturn is also in the evening sky this month. Look for it high in the south after sunset.

5. Jupiter is in the morning sky this month. Look for it low in the east-southeast just before sunrise. Also, using binoculars, look for Uranus just above Jupiter the first of the month.

6. Mercury is also visible in the morning sky, in the early part of June. Use binoculars to see it about 5 degrees above the eastern horizon about one hour before sunrise. It disappears into twilight later in the month.

7. Comet watch! Look for the naked eye comet McNaught in the morning sky as it passes through Perseus and Auriga. Look for the finder chart on page 42 of the June issue of Astronomy magazine.

A FEW 2010 ROYAL ASTRONOMICAL SOCIETY HANDBOOKS ARE STILL 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.

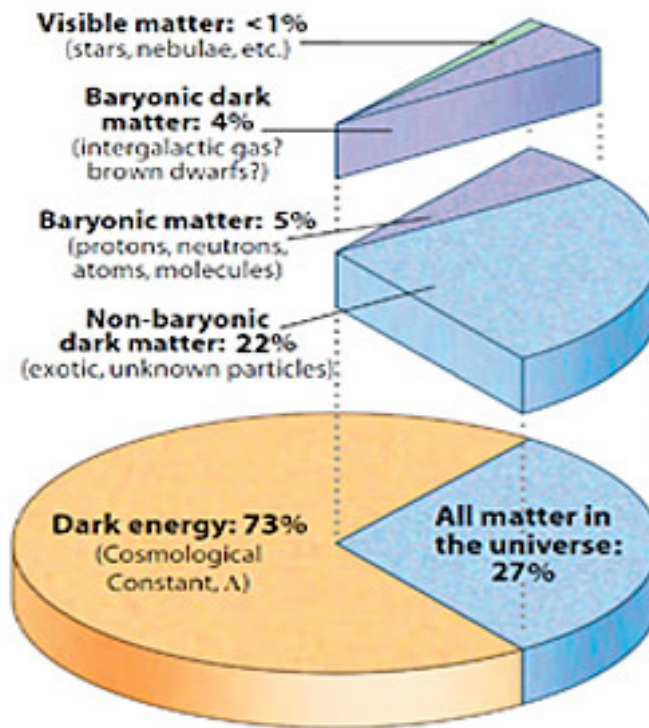
Most of you know all about the handbooks. Suffice to say that the *Observer's Handbook* is 356 pages of astronomical data, which is presented as tables, charts and annual and daily information. The calendars present other useful data, along with great astronomical photographs.

The publications will be available at the June meeting, or you may contact Roger Brower at 760-375-1181 to pick up a copy.

JUPITER CLOUD BELT MISSING AGAIN, SCIENTISTS SAY--CNN Wire Staff on the Web.

Scientists don't know why, but one of Jupiter's two main cloud belts has disappeared--again. Like a wayward pet, the belt has gone missing before and has always returned. See this URL for the full CNN coverage: <http://www.cnn.com/2010/TECH/space/05/20/jupiter.cloud.belt.missing/index.html?hpt=T2>

LAST MISSING NORMAL MATTER IS FOUND from
<http://www.skyandtelescope.com/news/home/93797364.html>



All the things in the universe that we can easily see — stars, nebulae, and so on — amount to less than 1% of all the matter and energy that's known to be out there.

"Dark matter" and "dark energy" account for 95.4% of everything, judging by many lines of converging evidence (see the June *Sky & Telescope*, page 14). But that still leaves 4.6% of everything as "ordinary" matter: material made of protons, neutrons, and electrons, the stuff of atoms. Until recent years, astronomers could only tally up about half as much ordinary matter as cosmologists said there ought to be, judging from the state of the universe soon after the Big Bang.

Now the mystery seems to have been solved. In recent years, astronomers had already found signs that the missing ordinary matter indeed exists, as a thin, elusive gas between galaxies known as the "warm-hot intergalactic medium," or WHIM.

The evidence for WHIM has now become firmer. Its signature appeared (weakly) in a spectrum of X-rays arriving from a distant source. Absorption lines revealing WHIM were imprinted on the X-rays where they passed through the Fornax Wall, an enormous structure of thousands of galaxies in the vast web of galaxy strings, walls, and clusters pervading the cosmos.

The spectral signature matches both the predicted amount and temperature (about 1 million kelvins) of the elusive intergalactic gas. One reason it has gone unseen is that it is very sparse: there's only about 6 hydrogen atoms' worth per cubic meter, compared with the 1 million atoms per cubic meter that's typical of the *interstellar* gas within galaxies.

As mysterious as ever is the nonbaryonic dark matter: the 22% of the cosmic inventory that *is* matter but is *not* made of protons, neutrons, and electrons.

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 rb-churchill@live.com)

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TREASURER – Roger Brower - 760-375-1181 (email brower@iwvisp.com)

NEWSLETTER EDITOR – Carroll Evans Jr. - 760-375-5681 (email Carroll.L.Evans@gmail.com)

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 JUNE 7, 2010: “GRAVITY PROBE B”
AT THE MATURANGO MUSEUM, 100 EAST LAS FLORES AVE., RIDGECREST, CALIFORNIA**

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

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