



Jupiter and Ganymede (Hubble Photo)

**Longmont Astronomy Society Newsletter
January 2009**

From the President:

The beginning of a new year is a time for reviewing the accomplishments of the previous year and a time for looking forward to the challenges and opportunities in the next.

In the past year:

- We redesigned the website and moved it to a new server.
 - We published an excellent monthly newsletter.
 - We held two events for the eclipse in February in Louisville and Longmont with nearly a hundred people at each location. The events were a success despite being mostly cloudy.
 - We supported a quite a number of school star parties with scopes, Carrie Martin Elementary, Burlington Elementary, Cub Scout Pack 167, Twin Peaks Charter Academy, and Lyons Elementary. We were scheduled to do several others such as Kohl Elementary in Broomfield but they were canceled due to cloudy skies.
 - We supported the Crow Valley Star Party for the Forest Service. It was cloudy as well but it was a success anyway. We were encouraged to apply for a special use permit at the Crow Valley Recreation Area to establish a night sky observing area. Members wrote letters of support to the Forest Service.
 - We received a couple generous donations of equipment this past year, an antique Alvin Clark refractor and an 8 inch Schmidt Cassegrain.
 - We had excellent speakers at our meetings . John Stocke on the Cosmic Origins Spectograph, Dave Gingerich on the Genesis and Star Dust Missions, John Figoski on the Quick Bird II telescope, Pete Nelson on the Yerkes Myth, Fran Bagenal on the Juno Mission, Emily Haynes on the Phoenix Lander, Suzanne Traub-Metlay on the ESA Herschell and Plank telescopes, John Spencer on Cassini Mission and Enceladus, and Max Moe on planetary nebula.
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- We held our first ever imaging clinic and a couple presentations on imaging software and techniques.

This year we can look forward to some IYA2009 events and a number of school star parties. We'll schedule excellent speakers for our meetings. We'll have more imaging technique presentations and workshops. We'll complete the permit process and establish the observing area at Crow Valley. And most importantly, we can look forward to many wonderful dark, clear nights out at RAC and Fox Park.

Editor's Note: Hey, our first State of the LAS address!

Members should have received a letter from Vern within the last week with information about renewing their membership (\$20) and other options:

Astronomy magazine 1 yr - \$34.00, 2 yr - \$60.00

calendar - \$8.00

Donation for telescope fund -

If they have not received a renewal letter, they should contact Mike Fellows (michaelfellows1@msn.com)

Annual Holiday Party:

The banquet will be at Johnny Carino's, on the diagonal across from the Twin Peaks Mall on Saturday, January 18th.

Social at 4:30(cash bar) , Food at 5:30 (Italian with bread and salad), Speakers at 6:30.

Dave Gingerich will be updating us on the Stardust mission. Stardust is scheduled to pass Earth on January 14th, so we should be seeing pictures before they go to the newspapers! Cutting edge astronomy. Then Dr. Bob will be doing the astronomy summary for the year.

The choices for the buffet are either Lasagna or Chicken Parmesan, which you have hopefully ordered. If you do not want to participate in the buffet you can also order off of the menu at regular menu prices.

See You There!

In the sky this month:

Meteor Showers – nothing much until April, just a few strays

Planets:

Mercury

Venus – Prominent in the South at sunset, max elongation was Jan 14, max brightness is still to come in mid February

Mars – behind the Sun

Jupiter – if you're lucky, you can see it briefly in the west at sunset

Saturn - rises after 9 PM, getting better as we catch up to it in orbit.

Interesting Stars/Galaxies (From Vern)

Orion is straight south around 10 pm so its a great time to explore the Great Orion nebula, M42-43. Don't forget to view the M79 globular cluster in constellation Lepus just below Orion.

If you are fortunate to be far away from city lights this weekend, check out open cluster NGC 2244 and NGC 2237-2239, the Rosette Nebula, in constellation Monoceros. The rosette may be seen in 10x50 binoculars. In a scope 8" to 12" in diameter look for a cluster of 40 to 50 stars across your field of view. Put on a UHC or OIII filter to bring out swirls of nebulosity and dark lanes surrounding the cluster. The Rosette is a large object, 60x80 arc minutes across or about 4 times as large the moon. It is located about 5200 light years (1600 parsecs) from earth and it is 65 light years in diameter.

Comets

C/2008 A1 McNaught is in the constellation Cygnus. It is magnitude 9.2 in brightness and 5 arc min wide coma. Best time to view is as soon as dark around 6:30 PM

C/2006 W3 Christensen is in constellation Lacerta . It is magnitude 9.7 in brightness and 3 arc min wide coma. Best time to view is as soon as dark around 6:30 PM

144P/Kushida is in constellation Taurus and is around magnitude 9 (estimates vary widely) and 9 arc min wide coma. Best time to view is around 8 pm.

C/2006 OF2 (Broughton) is in the constellation Auriga. It is magnitude 9.8 in brightness and 3 arc min wide coma. Best time to view is around 10 pm.

For more information about comets see www.aerith.net

Comet 210P/2008 X4 (Christensen) moves from constellation Ophiuchus to constellation Scorpio this week. It is 10.1 magnitude and 2 arc min wide coma. Best time to view is before dawn, about 5:45 am

.Catch the winter comet Lulin, brightening to naked eye, maybe by mid February. Sky map at http://media.skyandtelescope.com/documents/Comet_Lulin_Jan1.pdf Should be near Spica in mid February, 5th magnitude maybe, and hustling along at 3 degrees per day! Peak brightness predicted for February 23rd, when it should be near Saturn, and moving at 5 degrees per day.

Club Calendar:

Next meeting: February 19, at FRCC community room.

January 30 at Carrie Martin School – annual science fair from 5:30 to 7:30. Volunteers needed with scopes for the enthusiastic batch of kids. Free tacos for participants, how can you beat that?

Fiske Planetarium:

Jan 22 & 23--"Many faces of Hubble" our latest Planetarium Show

Jan 29--Colorado Skies: "Mars Exploration" with Matt Benjamin

February 5 & 6: Birth of Stars: *Ben Brown*

Come join Ben Brown as we look at recent observations with giant ground based telescopes & space based instruments such as the Hubble Space Telescope to peer across space and back in time. See the latest results from the world's best observatories and learn how our own Solar System may have formed.

February 19 & 20: Leviathans of Deep Space: *Dr. Erica Ellingson*

Galaxy Clusters are the largest objects in the Universe held together by gravity. Although they can contain thousands of bright galaxies, their mass is dominated by mysterious dark matter, and their formation is governed by the even stranger dark energy. We'll explore these cosmic giants and what they tell us.

Internet Resources:

The Milky Way is apparently greater in mass than originally proposed, now about equal to Andromeda is size. Read all the details of "how they did it" at <http://www.nrao.edu/pr/2009/mwrotate/>

Also, the question of which came first, black holes or galaxies whose centers collapsed into black holes, has been settled. Off to <http://www.nrao.edu/pr/2009/bhbulge/> for those details.

Advice for new scope owners: <http://www.skyandtelescope.com/letsgo> Just in case you got a nice one from Santa for Christmas, or maybe Gary forgot to pack up one of his?

Upcoming Space Missions:

From Julie: CU grants

Professor Jack Burns of CU-Boulder's Center for Astrophysical and Space Astronomy is the principal investigator on a winning four-year, \$6 million proposal known as the Lunar University Node for Astrophysical Research, or LUNAR. The goal is to conduct a variety of astronomical observations from the lunar surface, including fundamental studies of gravity and Einstein's general theory of relativity, solar physics -- including explosive eruptions on the sun -- and the development of a new suite of instruments for peering back at the early universe, said Burns.

The second CU-Boulder proposal funded by the institute is a four-year, \$5 million grant led by principal investigator and Professor Mihaly Horanyi of the Laboratory for Atmospheric and Space Physics for the creation of the Colorado Center for Lunar Dust and Atmospheric Studies, or CCLDAS. Horanyi and his team will study the lunar surface and atmosphere, including charged dust particles, ionized gas and dust, impact processes, the evolution of the lunar atmosphere and astronaut safety issues.

NASA SELECTS CU-BOULDER TO BUILD \$6 MILLION LUNAR DUST DETECTOR TO ORBIT MOON IN 2012

The University of Colorado at Boulder has been awarded a \$6 million grant from NASA to build a high-tech lunar dust detector for a 2011 mission to orbit the moon and conduct science investigations of the dusty lunar surface and its atmosphere.

Known as the Lunar Dust Experiment, or LDEX, the instrument will be designed

and built at CU-Boulder's Laboratory for Atmospheric and Space Physics. The instrument will fly on the Lunar Atmosphere and Dust Experiment Explorer mission, or LADEE, an orbiting satellite that will assess the lunar atmosphere and the nature of dust lofted above the moon's surface

NASA's Lunar Reconnaissance Orbiter (LRO) successfully completed thermal vacuum testing, which simulates the extreme hot, cold, and airless conditions of space that LRO will experience after launch. This milestone concludes the orbiter's environmental test program at NASA's Goddard Space Flight Center in Greenbelt, Maryland.

The orbiter will carry seven instruments to provide scientists with detailed maps of the lunar surface and increase our understanding of the Moon's topography, lighting conditions, mineralogical composition, and natural resources. NASA will use LRO data to select safe landing sites, determine locations for future outposts, and help mitigate radiation dangers to astronauts. The spacecraft will spend at least a year in a low polar orbit approximately 30 miles (48 kilometers) above the lunar surface while the instruments work together to collect detailed information about the Moon's environment.

NASA will ship LRO to Kennedy Space Center in Florida in early 2009 to complete preparations for its April 24 launch aboard an Atlas V rocket. Accompanying the spacecraft will be the Lunar Crater Observation and Sensing Satellite, a mission that will impact the Moon's surface in its search for water ice.

Tastefully borrowed from the S&T weekly news

International Year of Astronomy 2009

January 1, 2009

by the Editors of *Sky & Telescope*

IAU

New Year's Day marks the beginning of what will undoubtedly be more than 12 months of celebrating astronomy. The International Astronomical Union (IAU) has designated 2009 as the International Year of Astronomy (IYA2009) to commemorate the 400th anniversary of Galileo's first celestial observations using a telescope. [IYA2009](#) has been endorsed by the United Nations Educational, Scientific, and Cultural Organization (UNESCO) and the U.N. General Assembly.

Much of IYA2009's activities revolve around 11 Cornerstone Projects. While some initiatives are already underway, others still remain under development. The links to their individual sites are listed below. You'll find even more information at [U.S. National Node](#). If you don't live in the U.S., see [IYA2009](#)'s main site for a link to your country's node.

[100 Hours of Astronomy](#): 400 Years in the Making
[The Galileoscope](#): Millions of People Looking at the Sky
[Cosmic Diary](#): The Life of an Astronomer
[Portal to the Universe](#): A One-stop Universe of News
[She Is an Astronomer](#): Breaking Down Misconceptions
[Dark Skies Awareness](#): Seeing in the Dark
[Astronomy and World Heritage](#): Universal Treasures
[Galileo Teacher Training Program](#): Teaching the Teachers
[Universe Awareness](#): One Place in the Cosmos
[From Earth to the Universe](#): The Beauty of Science
[Developing Astronomy Globally](#): Astronomy for All

And while it's not an official Cornerstone Project, the amateur-led [The Earth at Night](#) project is another important element for IYA2009.

We're happy to provide the article "The Year to Celebrate Astronomy" by organizers Catherine Cesarsky, Pedro Russo, and Lars Lindberg Christensen from the January 2009 issue of *Sky & Telescope* as a free download in [PDF format](#). (To display PDF files, download and install the free [Adobe Reader](#).)

Be sure to check out the official movie of IYA2009: [Eyes on the Skies](#) produced by the European Space Agency and European Southern Observatory.

Bookmark this page ([SkyandTelescope.com/IYA2009](#)) and check it often, as we'll add more articles throughout the year.

Editor's Note: The one link above to the official movie is interesting – the movies are massive files of 200 meg apiece, but worth watching. Go for the downloadable large version while you're doing something else (like eating dinner), then watch them at your leisure. The small sizes are really too small.

The Hubble replacement is the James Webb Telescope, named after the head of NASA during the Moon years. It will have to be perfect on the first try, since it will be parked in a LaGrange point and unreachable by the shuttle. The details and testing of the scope continues, and they have opened a website to cover the development of the scope at http://webbtelescope.org/webb_telescope/ Read all the science details there.

Humor Department: pretty much a mix of wacky photos, mostly useless but if you have time on your hands....

<http://www.impactlab.com/category/photo-perspectives/>

For Sale:

CAPE CANAVERAL, Fla. – NASA's soon-to-be-retired space shuttles are up for grabs.

The space agency said Wednesday it's looking for ideas on where and how best to display its space shuttles once they stop flying in a few years. It's put out a call to schools, science museums and "other appropriate organizations" that might be interested in showcasing one of the three remaining shuttles.

Beware: NASA estimates it will cost about \$42 million to get each shuttle ready and get it where it needs to go, and the final tab could end up much more.

The estimate includes \$6 million to ferry the spaceship atop a modified jumbo jet to the closest major airport. But the price could skyrocket depending on how far the display site is from the airport. Only indoor, climate-controlled displays will be considered.

"The orbiters will not be disassembled for transportation or storage," NASA insists in its nine-page request for information.

One space shuttle appears headed to the Smithsonian Institution's National Air and Space Museum in Washington. The remaining two would be placed in storage at Kennedy Space Center until their final homes are decided.

If a space shuttle is too pricey, NASA is offering some of its shuttle main engines for anywhere between \$400,000 and \$800,000, not counting shipping costs.

The space shuttles, so you know, will not come with any main engines, so you better plan on buying a few of those.

Fundraising effort by the LAS – let's get the 42 million together and buy a shuttle. For another couple of million, we can get a set of engines!
