

Upcoming SAAA Events...

Observing Session and Club Meeting

Friday, July 13 @ 8:30 PM

- At Vivekananda Monastery, 6723 122nd Ave, in Fennville
- Weather Permitting
- Sunset at 9:22 PM DST
- General meeting on-site

Public Observing at Holland State Park

Monday, July 16 @ 9:00 PM

- Explorer Ranger's Science and Nature Program
- Observing Session For Camp Guests
- Volunteers and Telescopes Needed!

Board Meeting

Thursday, August 5 @ 5:30 PM

- 84-East Restaurant
- Summer break - no board meeting in July

Celestial Highlights:

July 1

1½ hours after sunset, Venus within 0.8° of Saturn

July 7

Last-quarter Moon

July 14

New Moon

July 16

1 hour after sunset, Moon, Saturn Regulus and Venus within 7.5° of each other

July 22

First-quarter Moon

July 29

Full-Moon

Southern Skies

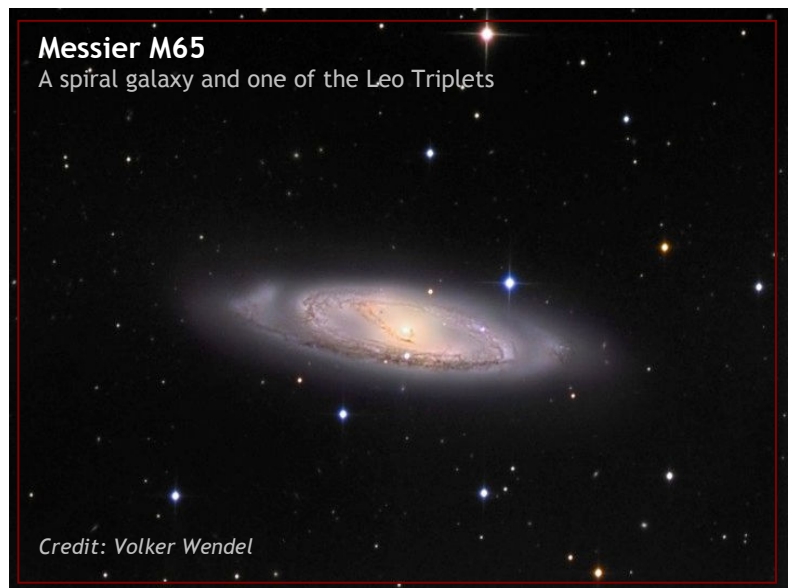
Jupiter is bright all month long next to nearby star, Antares

Inside this Newsletter

May meeting minutes	2
June board meeting minutes	2
June meeting minutes	2
What's up in the sky?	3
NASA Space Place - June	4
NASA Space Place - July	5

Messier M65

A spiral galaxy and one of the Leo Triplets



Credit: Volker Wendel

May meeting minutes

The May meeting came to order at 7:15pm on Thursday, May 19, 2007. Four members, five Lakewood Elementary Girl Scouts and five scout leaders attended the May meeting. Carson provided refreshments.

I'd like to recognize Peter Burkey for his outstanding contributions that night. Peter did an awesome job preparing materials, instructing the scouts and filing their questions.

The meeting opened with brief introductions from both organizations and went directly into the merit badge session.

Over the next two hours, the scouts were trained on the phases of the Moon, which covered lunar (and solar) eclipses. They learned which planets are visible now and were taught the names and locations of spring and summer constellations. The scouts were given an extensive tour of the night sky using the Planetarium and were given an opportunity to ask questions throughout the session.

Helmut Schurman presented Boötes as our constellation of the month. Hard copies of his research were distributed to all present. Helmut read aloud his presentation sharing the ancient origins of Boötes. Thanks Helmut.

Old Business

- The SAAA recognizes the following members for making April 21st National Astronomy Day a huge success: Jim Reier, Peter Burkey, Rajendra Hemanth (and Family), George Miller and John Alderson. We welcomed hundreds of visitors to our booth and provided views of Saturn, Venus and the Moon to well over 150 people that night.
- Mark Logsdon submitted renewal subscriptions to Sky & Telescope magazine for five members. The following members will receive S&T without interruption: Peter, Larry, Jim, Raj and Carson.
- Rajendra Hemanth to provide refreshments in June.

New Business

- On May 2nd, Russ Hills resigned his position as Vice President due to irreconcilable differences. The SAAA thanks Russ for his contributions and wishes him well.
- The SAAA will hold an emergency election on June 21st to fill the open Vice President position. All members are encouraged to attend this meeting.
- The SAAA web page was located to a new host on May 10th. The transfer went well and the site is up and running. Jim Reier is investigating ways to incorporate a mailing-list through the new host that can replace our Yahoo!-Groups mailing-list.

The meeting closed at 8:50 PM.

June board meeting minutes

SAAA officers and at-large members assembled for a board meeting on June 13, 2007 at the Beechwood-Inn.

In attendance were Mark Logsdon, Robin Hudson, Peter Burkey and Jim Reier.

Mark Logsdon indicated \$686.69 in the treasury. Upcoming expenses include IDA dues of \$50 and Astronomical League dues of \$75. The SAAA received \$86 from Park Township for the astronomy presentation in April.

Peter proposed using funds to procure T-shirts with the club logo for all members. Robin Hudson is seeking a quote from a personal friend who operates a printing shop. Details to follow at the July 13th meeting/star party.

Discussed the upcoming special election to fill the Vice President position.

Peter just returned from the National Radio Astronomy Observatory (NRAO) in Greenbank, West Virginia where he attended an astronomy seminar through Hope College. Peter offered to share his experiences at a club meeting this fall.

The board thanks Nancy Leon of NASA for providing educational materials to the SAAA. These materials are distributed to children and guests of the SAAA who participate in our public presentations and very much appreciated.

June meeting minutes

The June meeting came to order at 7:15pm on Thursday, June 21 2007. Seven members attended the June meeting. Rajendra provided refreshments.

No candidates volunteered for the Vice President position. Jim Reier has agreed to carry the position to end-of-term.

Jim Reier shared upcoming events that include public presentations at Holland State Park on Monday July 13th and Van Buren State Park on Thursday August 9th.

The SAAA was contacted by WGVU/PBS television who are seeking sponsors for two back-to-back astronomy programs to air in September. Sponsors are given 30 seconds to promote their organization between programs. Jim Reier is investigating costs and will share at the July 13th meeting.

The SAAA will host Park Township in October, reprising our presentation on deep sky objects.

Jim Reier shared a presentation on the observing programs offered by the Astronomical League and encouraged members to review the many programs offered. Jim wants to get manuals for introductory observing programs from the Astronomical League and will coordinate his request with Mark Logsdon, our ALCOR member.

What's up in the sky?

June, 2007

By Peter Burkey

The month of June has a lot to offer. School ends, summer vacation begins, and observing opportunities abound. The only drawback is that it gets dark so late that serious observing takes place mostly after midnight. But this June offers plenty to see without staying up late.

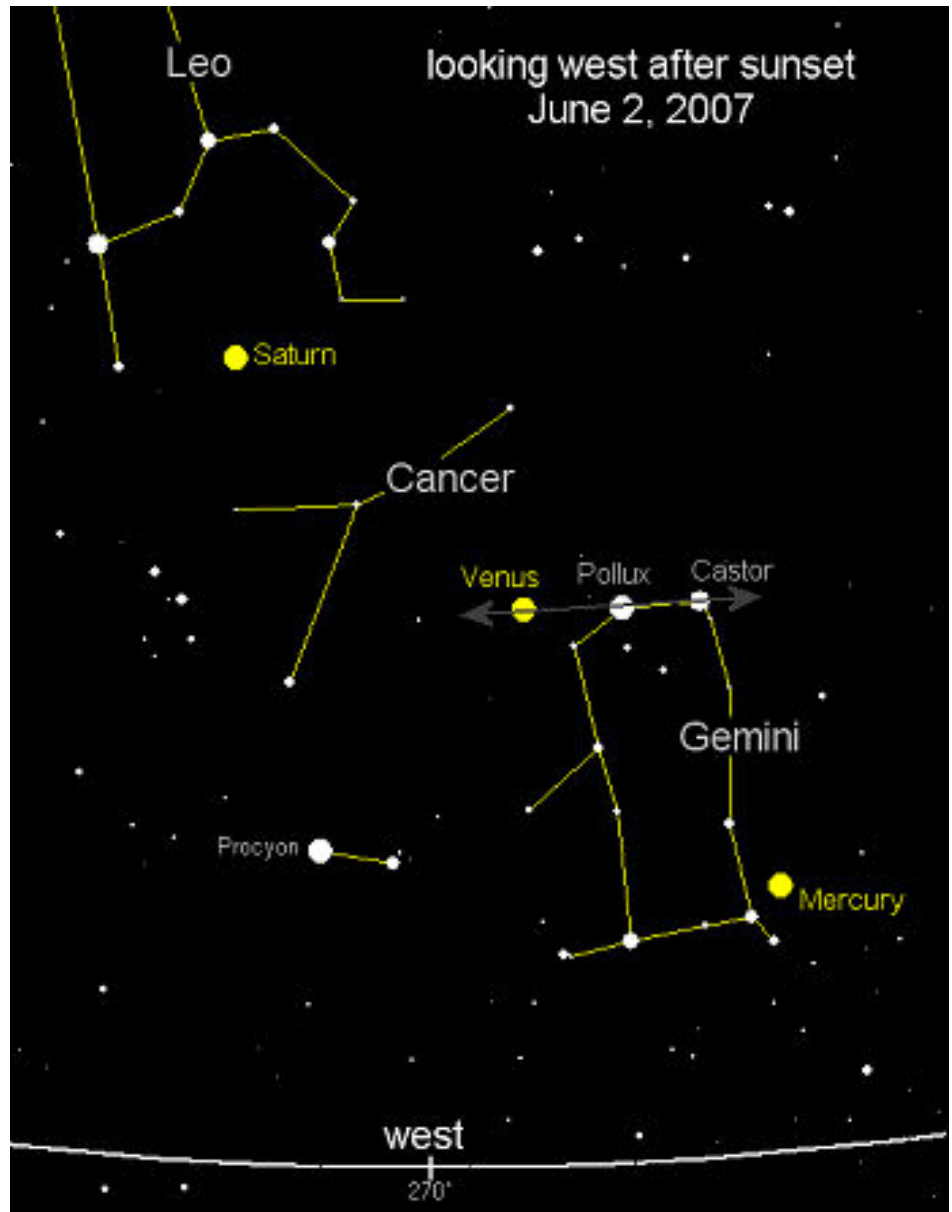
This Friday, June 1, go out around 10 pm to a location with a clear view of the western horizon. Venus will be dazzling as it has been all spring. To the right of Venus, you should see two stars, Castor and Pollux, the three evenly spaced along a straight line. Venus will also be in line with the planets Saturn and Mercury, although the spacing is much greater. Look for Saturn to Venus' upper left and Mercury to the lower right, near the horizon. Binoculars may help for Mercury.

By the 12th you will see that Venus has moved up and away from the twin stars and binoculars will reveal it to be very close to M44, the Beehive cluster. Watch the planet move past this cluster over the next several nights.

The real fun begins on June 16 when the young crescent moon lines up with Venus, Saturn, and the star Regulus. Over the next three evenings you will witness the moon move toward the upper left, passing close to all three objects. On the 19th, be sure to go out right after sunset (9:25 p.m.), find the crescent moon and, using binoculars or a small telescope, see if you can spot Regulus right above it. You may have to wait for the sky to darken but if you continue to watch you will be able to see the moon passing the star.

During the last week of the month watch each night as Venus closes in on Saturn. On June 30 the two form a spectacular close pair, separated by a little more than one moon diameter. It is the best pairing of two planets all year.

Astronomy doesn't have to be difficult. None of these observations requires special equipment, a dark sky or long hours. All you need are your eyes and an interest in what's up in the sky.



This month in history:

- June 3: Gemini IV astronaut, Ed White, takes America's first space walk - 1965
- June 10: Mars rover "Spirit" launched - 2003
- June 16: Valentina Tereshkova first (and only solo) woman in space - 1963
- June 18: Sally Ride becomes first American woman in space - 1983
- June 30: Tunguska impact (probably a comet fragment) flattens hundreds of miles of Siberian forest - 1908



Clouds from Top to Bottom

By Patrick L. Barry

During the summer and fall of 2006, U.S. Coast Guard planes flew over the North Pacific in search of illegal, unlicensed, and unregulated fishing boats. It was a tricky operation—in part because low clouds often block the pilots' view of anything floating on the ocean surface below.

To assist in these efforts, they got a little help from the stars.

Actually, it was a satellite—CloudSat, an experimental NASA mission to study Earth's clouds in an entirely new way. While ordinary weather satellites see only the tops of clouds, CloudSat's radar penetrates clouds from top to bottom, measuring their vertical structure and extent. By tapping into CloudSat data processed at the Naval Research Laboratory (NRL) in Monterey, CA, Coast Guard pilots were better able to contend with low-lying clouds that might have otherwise hindered their search for illegal fishing activity.

In the past, Coast Guard pilots would fly out over the ocean not knowing what visibility to expect. Now they can find out quickly. Data from research satellites usually takes days to weeks to process into a usable form, but NASA makes CloudSat's data publicly available on its QuickLook website and to users such as NRL in only a matter of hours—making the data useful for practical applications.

"Before CloudSat, there was no way to measure cloud base from space worldwide," says Deborah Vane, project manager for CloudSat at NASA's Jet Propulsion Laboratory.

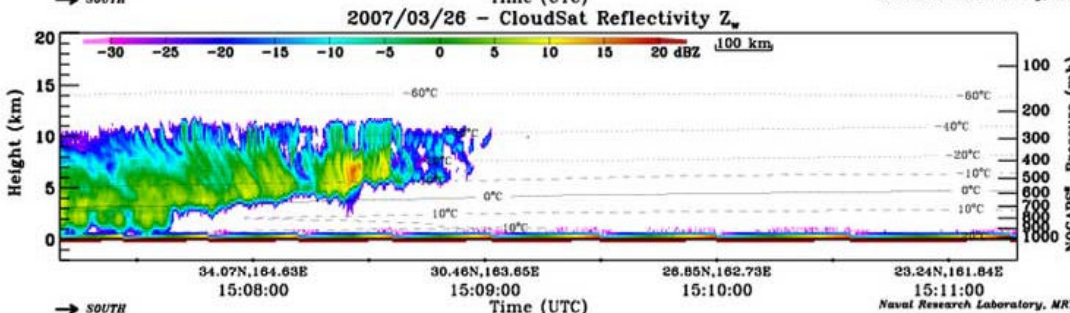
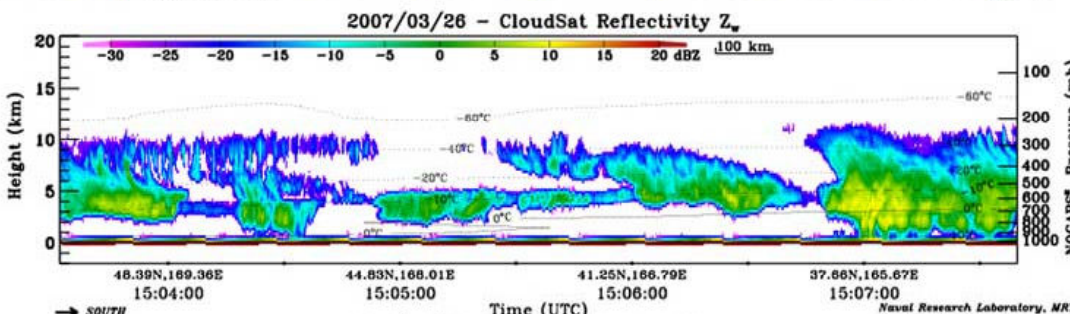
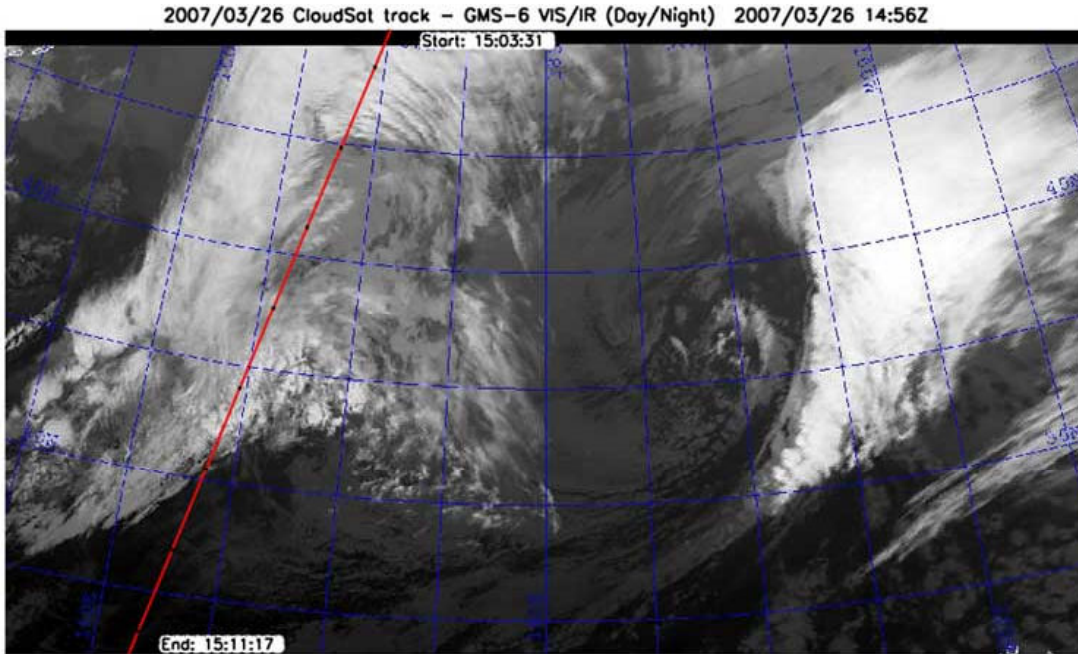
CloudSat's primary purpose is to better understand the critical role that clouds play in Earth's climate. But knowledge about the structure of clouds is useful not only for scientific research, but also to operational users such as Coast Guard patrol aircraft and Navy and commercial ships at sea.

"Especially when it's dark, there's limited information about storms at sea," says Vane. "With CloudSat, we can sort out towering thunderclouds from blankets of calmer clouds. And we have the ability to distinguish between light rain and rain that is falling from severe storms." CloudSat's radar is much more sensitive to cloud structure than are radar systems operating at airports, and from its vantage point in space, CloudSat builds up a view of almost the entire planet, not just one local area. "That gives you weather information that you don't have in any other way."

There is an archive of all data collected since the start of the mission in May 2006 on the CloudSat QuickLook website at cloudsat.atmos.colostate.edu. And to introduce kids to the fun of observing the clouds, go to spaceplace.nasa.gov/en/kids/cloudsat_puz.shtml.

This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.

Caption:
A CloudSat ground track appears as a red line overlaid upon a GMS-6 (a Japanese weather satellite) infrared image. CloudSat is crossing the north-central Pacific Ocean on a descending orbit (from upper-right to lower-left) near a storm front. The radar data corresponding to this ground track (beginning in the center panel and continuing into the lower panel) shows a vertical cloud profile far more complex than the two-dimensional GMS-6 imagery would suggest. Thicker clouds and larger droplets are shown in yellow/red tones, while thinner clouds are shown in blue.





Chew On This

By Diane K. Fisher

The Mars robotic rovers, Spirit and Opportunity, are equipped with RATs, or Rock Abrasion Tools. Their purpose is to abrade the surface patina off the Mars rocks so that the alpha x-ray spectrometer can analyze the minerals inside the rocks, rather than just on the surface.

But future robotic missions to Mars will be asked to go even further below the surface. Scrapers and corers will gather rock samples of substantial size, that, in order to be analyzed by a spectrometer, will need to be crushed into a fine powder.

Crushing rocks on Mars? Now there's a problem that brings to mind a multitude of possible approaches: Whack them with a large hammer? Squeeze them until they explode? How about just chewing them up? It was with this latter metaphor that the planetary instrument engineers struck pay dirt—so to speak.

Thanks to NASA's Planetary Instrument Definition and Development Program, a small group of NASA engineers came up with the Mars Rock Crusher. Only six inches tall, it can chew the hardest rocks into a powder.

The Mars Rock Crusher has two metal plates that work sort of like our jaws. One plate stays still, while the other plate moves. Rocks are dropped into the jaw between the two plates. As one plate moves in and out (like a lower jaw), rocks are crushed between the two plates. The jaw

opening is larger toward the top and smaller towards the bottom. So when larger rocks are crushed near the top, the pieces fall down into the narrower part of the jaw, where they are crushed again. This process repeats until the rock particles are small enough to fall through a slit where the two plates are closest.

Engineers have tested the Mars Rock Crusher with Earth rocks similar to those expected to be found on Mars. One kind of rock is hematite. The rusted iron in hematite and other rocks help give Mars its nickname "The Red Planet." Another kind of rock is magnetite, so-called because it is magnetic. Rocks made by volcanoes are called basalts. Some of the volcanoes on Mars may have produced basalts with a lot of a mineral called olivine. We call those olivine basalts, and the Rock Crusher chews them up nicely too.

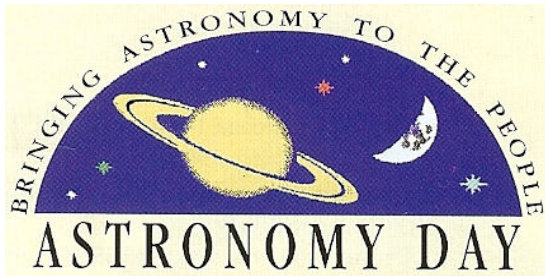
Visit www.jpl.nasa.gov/technology to read the latest about other NASA technologies for exploring other planets and improving life on this one.

This article was written by Diane K. Fisher and provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.



Caption:
Looking down on the jaws of the Mars Rock Crusher, we see a magnetite rock get crushed into smaller and smaller particles.

Note: This image may be downloaded from http://spaceplace.nasa.gov/news_images/magnetite.jpg



September 15, 2007

Events are eligible for entry into the 2008 Astronomy Day Awards. For the latest information, current application forms for the Astronomy Day Award or to download the latest version of the Astronomy Day Handbook go to the Astronomy Day homepage.

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