



Desert Sky Observer

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NEWSLETTER OF THE ANTELOPE VALLEY ASTRONOMY CLUB, INC
P.O. BOX 8545, LANCASTER, CALIFORNIA 93539-8545
*The Antelope Valley Astronomy Club, Inc., is a 501(c)(3) Non-Profit Corporation.
Visit the Antelope Valley Astronomy Club website at www.avastronomyclub.org/ The
A.V.A.C. is a Sustaining Member of The Astronomical League and the International
Dark-Sky Association.*



Up-Coming Events

- January 01:** Happy New Year!
- January 03:** Full Moon
- January 11:** Last Quarter Moon
- January 12:** Monthly Club Meeting *
- January 19:** New Moon
- January 20:** Dark Sky Star Party at [Saddleback Butte](#)
- January 25:** First Quarter Moon

* Monthly meetings are held at the S.A.G.E. Planetarium on the Cactus School campus in Palmdale, the second Friday of each month. The meeting location is at the northeast corner of Avenue R and 20th Street East. Meetings start at 7 p.m. and are open to the public. *Please note that food and drink are not allowed in the planetarium*

Club President Terry Pedroza

I would like to thank and congratulate the 2006 Executive Board for their great work and strides forward that they made with the Antelope Valley Astronomy Club. They moved OUR club forward by leaps and bounds this last year. I hope that the 2007 board can be as successful!

Thank you to all the members of the Antelope Valley Astronomy Club for your support in the elections. I think the 2007 board will be a great one with Shane Barker as Vice President, David Abbrass as Treasurer, Tom Koonce as Secretary and Rose Moore as Director of Community Development

My vision for this year is that we get our laptop up and running to the potential that it is capable of, that the club trailer be set-up to its full potential, that we enact a club Trustee program, and that we look into getting our club its own permanent observing site. I am also hoping to get the members of the Antelope Valley Astronomy Club more involve with their club in its events and the governing process.

If any of you have an idea on how to make our club better or more productive in the community please do not hesitate to call, email or talk to me in person about it.

***Vice President
Shane Barker***

I wanted to thank everyone for this position. I'm very excited about the new position. Plus, I'm looking forward to the upcoming speakers for our club for this year.

Our January speaker is going to be Jeremy Amarant and his presentation will center on current events and what is going on in the night sky right now.

I'm excited to be bringing the monthly night sky reports for each month and rare events in the night sky as well. Here is what is going on now in the night sky.

At daybreak, Jupiter marks the way to Mars and similar-looking Antares. Bring binoculars for the fainter sights, including a very out-of-season look at the head of Scorpius. This is one hour before sunrise on December 31st.

I've have been a big fan of the night sky since I was young. My interest in Astronomy began in the 5th grade from a school nurse, who told me about "Orion's Belt." She told me about finding three stars in a row and that were easy to find in the sky. While out one night looking up I found "Orion's Belt." From that point on I was fascinated with the night sky.

Shane Barker

***Director of Community Development
Rose Moore***

Happy New Year to everyone! We have a couple of events coming up, beginning with an evening at Prime Desert Woodlands. This is on Saturday, January 6th, at dusk. Jeremy will be doing a 'Full Moon Walk' there, and we can use a few members to come out with telescopes for some observing that evening.

On February 22, Thursday, Quartz Hill Elementary with be having a Science Fair. We have been asked to have a star party that evening from approximately 6-7:30pm. This is just in the early planning stages. Please keep that date in mind, and contact me if interested in helping out that evening. I'll have a sign up sheet at January's meeting.

Anyone who is interested in helping out with the Prime Desert event, please call me or email me to let me know ASAP!

Rose



Space Weather for Air Travelers

By Dr. Tony Phillips

At a time when much of the airline industry is struggling, one type of air travel is doing remarkably well: polar flights. In 1999, United Airlines made just twelve trips over the Arctic. By 2005, the number of flights had grown to 1,402. Other airlines report similar growth.

The reason for the increase is commerce. Business is booming along Asia's Pacific Rim, and business travel is booming with it. On our spherical Earth, the shortest distance from Chicago to Beijing or New York to Tokyo is over the North Pole. Suddenly, business travelers are spending a lot of time in the Arctic.

With these new routes, however, comes a new concern: space weather.

"Solar storms have a big effect on polar regions of our planet," explains Steve Hill of NOAA's Space Weather Prediction Center in Boulder, Colorado. Everyone knows about the Northern Lights, but there's more to it than that: "When airplanes fly over the poles during solar storms, they can experience radio blackouts, navigation errors and computer reboots—all caused by space radiation."

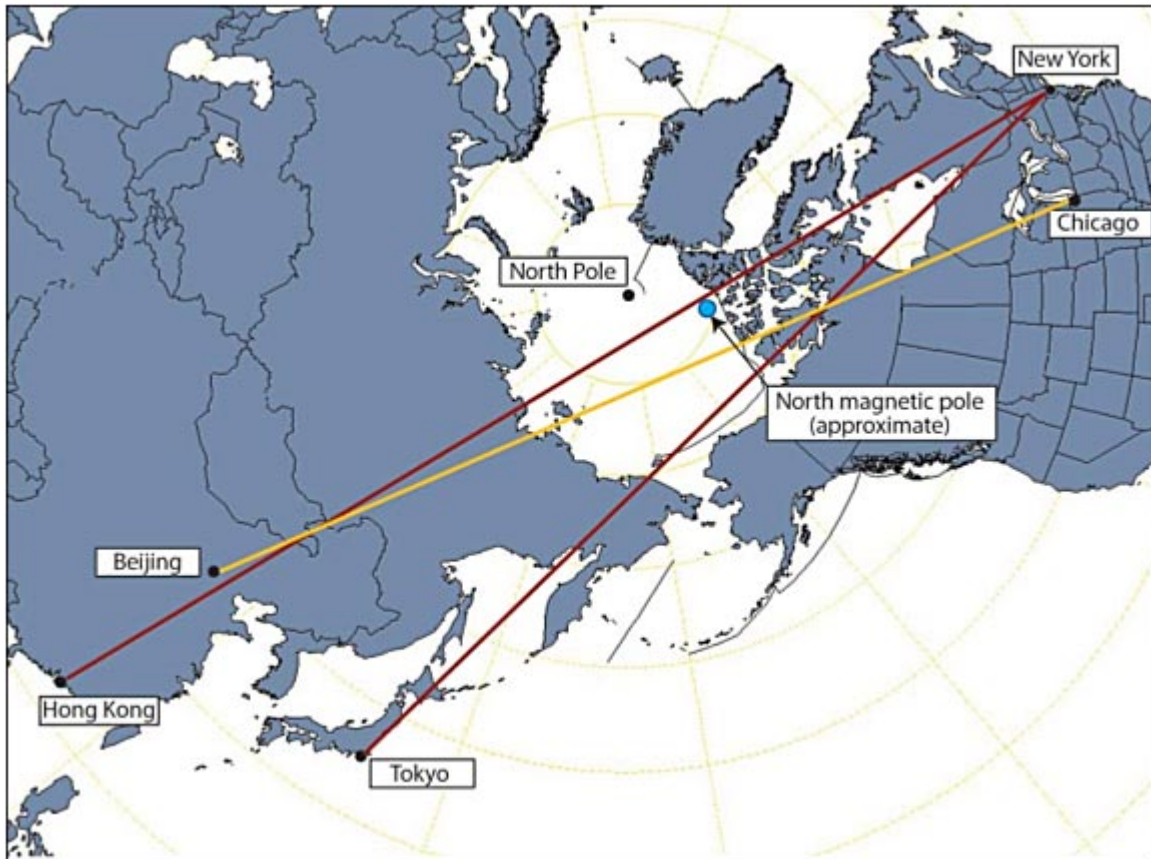
In 2005, United Airlines reported dozens of flights diverted from polar routes by nasty space weather. Delays ranged from 8 minutes to nearly 4 hours, and each unplanned detour burned expensive fuel. Money isn't the only concern: Pilots and flight attendants who fly too often over the poles could absorb more radiation than is healthy. "This is an area of active research—figuring out how much exposure is safe for flight crews," says Hill. "Clearly, less is better."

To help airlines avoid bad space weather, NOAA has begun equipping its GOES weather satellites with improved instruments to monitor the Sun. Recent additions to the fleet, GOES 12 and 13, carry X-ray telescopes that take spectacular pictures of sunspots, solar flares, and coronal holes spewing streams of solar wind in our direction. Other GOES sensors detect solar protons swarming around our planet, raising alarms when radiation levels become dangerous.

"Our next-generation satellite will be even better," says Hill. Slated for launch in 2014, GOES-R will be able to photograph the Sun through several different X-ray and ultra-violet filters. Each filter reveals a somewhat different layer of the Sun's explosive atmosphere—a boon to forecasters. Also, advanced sensors will alert ground controllers to a variety of dangerous particles near Earth, including solar protons, heavy ions and galactic cosmic rays.

"GOES-R should substantially improve our space weather forecasts," says Hill. That means friendlier skies on your future trips to Tokyo.

For the latest space weather report, visit the website of the Space Weather Prediction Center at <http://www.sec.noaa.gov/>. For more about the GOES-R series spacecraft, see http://goespoes.gsfc.nasa.gov/goes/spacecraft/r_spacecraft.html. For help in explaining geostationary orbits to kids—or anyone else—visit The Space Place at http://spaceplace.nasa.gov/en/kids/goes/goes_poes_orbits.shtml.



The shortest airline routes from the Eastern U.S. to popular destinations in Asia go very near the magnetic North Pole, where space weather is of greatest concern.

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

Did you know ? ? ?

There are so many stars in the heavens no one has an accurate count. It would be reasonable to say trillions and trillions and still be modest in your description. Many of the brightest stars visible to the unaided eye have been named in "ancient" times. The customs and traditions for naming stars have changed over time. Many stars have Arabic names assigned in medieval times when, among Islamic nations, astronomy was a strongly developed science. Star diagrams show Arabic names for the seven stars in the Big Dipper. Later, when Latin was used by European astronomers stars like Polaris (the North Star) were named.

News and Headlines

New Weather Satellite For Beijing Olympics Working Perfectly In Orbit

On-orbit tests show that Fengyun-2D (FY-2D), geostationary orbit meteorological satellite launched earlier this month to provide quality service for the Olympic Games, has been functioning properly, the government said on Sunday. Fengyun-2D, China's second geostationary orbit meteorological satellite, "has been in stable working conditions since the tests began on December 14," the China Meteorological Administration said.

http://www.spacemart.com/reports/New_Weather_Satellite_For_Beijing_Olympics_Working_Perfectly_In_Orbit_999.html

COROT is on its way

Launched from Kazakhstan, the unique astronomy mission COROT is on its way. Its twin goals are to detect exoplanets orbiting around other stars and to probe the mysteries of stellar interiors as never before. COROT is a French national space agency (CNES)-led mission to which ESA and European partners are adding a particularly strong international flavour.

<http://www.spaceref.com/news/viewpr.html?pid=21549>

Pluto Sighted For First Time By New Horizons From Four Billion Kilometers Away

The New Horizons team got a faint glimpse of the mission's distant, main planetary target when one of the spacecraft's telescopic cameras spotted Pluto for the first time. The Long Range Reconnaissance Imager (LORRI) took the pictures during an optical navigation test on Sept. 21-24, and stored them on the spacecraft's data recorder until their recent transmission back to Earth.

http://www.spacedaily.com/reports/Pluto_Sighted_For_First_Time_By_New_Horizons_From_Four_Billion_Kilometers_Away_999.html

Mars Rovers: On The Roll To New Targets

NASA's Opportunity and Spirit Mars rovers are on the prowl. Science teams are plotting out new escapades for the twin robots--new destinations certain to reveal more secrets from the red planet.

http://news.yahoo.com/s/space/20061228/sc_space/marsroverontherolltonewtargets

Orion Hardware Reviewed For Human Asteroid Flight

Progress is being made on defining a human mission to an asteroid. Experts at several NASA centers are sketching out a prospective piloted stopover at an asteroid—a trek that could return samples from a targeted space rock as well as honing astronaut proficiency and test needed equipment for other space destinations.

http://www.space.com/business/technology/061227_asteroid_orion.html

Moonbase: In the Dark On Lunar Ice

NASA is on a flight path to replant astronauts on the Moon, looking to sustain a human presence on that cratered, airless orb on a "go-as-the-nation-can-afford-to-pay" basis. That approach is seen as letting people step back onto the lunar surface no later than 2020.

http://news.yahoo.com/s/space/20061226/sc_space/moonbaseinthedarkonlunarice

Space's threat to civilization

What should we do if an asteroid is on a collision course with Earth? This question is being taken increasingly seriously by scientists as more is learnt about the impact a near earth object (NEO) would have on the future of civilization.

<http://www.cnn.com/2006/TECH/space/12/29/fs.asteroids/index.html>

A.V.A.C. Membership Information

Membership in the Antelope Valley Astronomy Club is open to any individual.

The Club has three categories of membership.

- Family membership at \$30.00 per year.
- Individual membership at \$25.00 per year.
- Junior membership at \$15.00 per year.

Membership entitles you to...

- Desert Sky Observer—monthly newsletter.
- The Reflector—the quarterly publication of the Astronomical League.
- The A.V.A.C. Membership Manual.
- To borrow club telescopes, binoculars, camera, books, videos and other items.

The Desert Sky Observer is available as a separate publication to individuals at a cost of \$10.00 per year. Subscription to the Desert Sky Observer does not entitle the subscriber to membership in the Antelope Valley Astronomy Club and its associated privileges.

A.V.A.C. Board Members**President:**

Terry Pedroza (661) 728-0130 president@avastronomyclub.org

Vice-President:

Shane Barker (661) 940-3312 vice-president@avastronomyclub.org

Secretary:

Tom Koonce (661) 943-8200 secretary@avastronomyclub.org

Treasurer:

David Abrass treasurer@avastronomyclub.org

Director of Community Development:

Rose Moore (661) 822-4580 community@avastronomyclub.org

Newsletter Editor:

Errol Van Horne (661) 273-7646 newsletter@avastronomyclub.org

Equipment & Library:

Karol Barker (661) 940-3312 library@avastronomyclub.org

Club Historian:

Tom Koonce (661) 943-8200 history@avastronomyclub.org

Webmaster:

Steve Trotta (661) 269-5428 webmaster@avastronomyclub.org

Astronomical League Coordinator:

Steve Trotta (661) 269-5428 al@avastronomyclub.org

Astronomy Links on the Web

<http://www.darksky.org/>

(International Dark-Sky Association)

<http://www.astro-tom.com/>

(Tom Koonce's website)

<http://www.noexitrecords.com/zerobox/astro.htm>

(Tom Varden's website)

<http://www.astropaws.com>

(Terry Babineaux's astrophotos)

<http://www.actonastro.com/>

(Steve Trotta's website)

<http://saturn.jpl.nasa.gov/multimedia/images/latest/index.cfm>

(the latest Saturn pics from Cassini)

<http://astronomy-mall.com/>

(shop 'til you go broke)

Thank you to our sponsors for your generous support!

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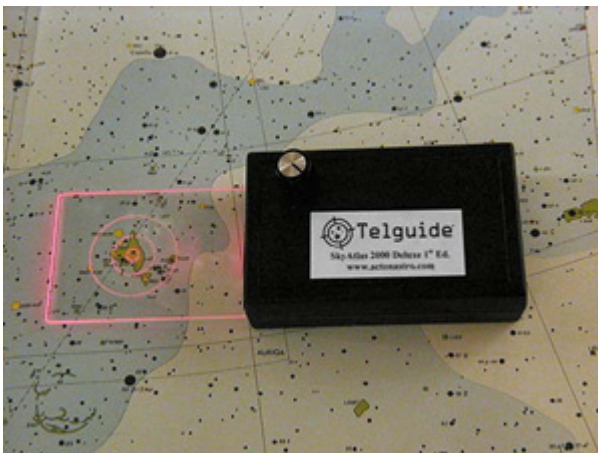
Woodland Hills Camera: 5348 Topanga Canyon Blvd., Woodland Hills. 888-427-8766. www.telescopes.net

Astro-tom.com: Tom is dedicated to amateur astronomy. <http://www.astro-tom.com>

ActonAstro: Club Web space provided by <http://www.actonastro.com>

Al's Vacuum and Sewing

WOODLAND HILLS *Camera*



The *Telguide*.

Our own Steve Trotta has invented the Telguide to aid you in your galactic hunts.

For more information on how a Telguide can help you, <http://www.actonastro.com>