Desert Sky Observer

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NEWSLETTER OF THE ANTELOPE VALLEY ASTRONOMY CLUB, INC
P.O. BOX 4595, LANCASTER, CALIFORNIA 93539-4595
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 Darksky Association.

Up-Coming Events

July 2: Star Party, Saddleback Butte State Park
July 6: New Moon
July 8: Monthly Club Meeting*
July 9: Annual Club Picnic, members only, Crystalaire Country Club
July 14: NASA Star Party, Poppy Reserve (private)
July 14: First Quarter Moon
July 16: Star Party, Cub Scout Pack 614, Saddleback
July 21: Full Moon
July 28: Last Quarter Moon

* Monthly meetings are held at the S.A.G.E. Planetarium at the Cactus School in Palmdale on 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 Debora Pedroza

One of the club's favorite annual events is the Riverside Telescopes Makers Conference, which is always held over Memorial weekend in Big Bear. This year was the first year that our club set up a booth, promoting both the club itself and our "Opportunity Quilt." The response we received varied over the three-day run. Many expressed surprise and interest in our Antelope Valley location; others offered their services for speaking engagements and the vendors positively loved our Astronomy Quilt. The Leones and Pedrozas set up a camping area where all members could congregate, rest, converse and enjoy some home-cooked meals.

RTMC is not just about astronomy related shopping, it is a dark sky star party shared with many astronomy enthusiasts who come from all over to share their telescopes, knowledge, and inventions. If you have never made it to this event then this is a must-do for the year 2006.

Speaking of the upcoming year, the club is now accepting nominations for the Executive Board positions. Serving on the Board gives you a chance to have a say and to get involved in not only the activities of the club but to share in the decision making, deciding the direction you would like to see the club go. Everyone is welcome to attend any Board meeting and this is highly recommended. You can see for yourself just how fun it is to be involved and to clear any misconceptions you may have regarding any of the Board positions. If you cannot attend a Board meeting, please speak to any current Board member and get the input you are looking for. This is OUR club and this is YOUR club. New officers, fresh ideas and new energy- let's make a difference.

See you soon! Until then, take good care.

Vice President Mindy Peterson

Last month our own Jeremy Amarant wowed us with his travels to many foreign countries. This month we have member Lee Bush who will speak on “The Antropic Principle and Intelligent Design.” He will also review the various theories being proposed to explain the fine-tuning of the universe. This will be a very informal talk with few if any equations. This should be a very interesting and enlightening talk on another perspective about the formation of our universe.

A little bit about Lee: He grew up in the San Fernando Valley and got his BA from UCLA in economics in 1966. He received his MA in geography from the University of Arizona, Tucson. Lee helped to develop the first national geographic base file, the TIGER file. This was a cooperative effort of the Census Bureau and US Geological Survey. Lee retired in 1994 and returned to California. About three years ago Lee got interested in what was happening in the field of cosmology.

We are quickly approaching the date for our annual club picnic. It will be held July 9th at Crystalaire Country Club. The Country Club has requested that we dress appropriately for the picnic, i.e., no tube tops, no bathing suits, no cut-offs, etc. Also, we will not be allowed to use the swimming pool this year. I passed around a signup sheet at the June meeting to sign up for various food items for the picnic. If you did not attend the June meeting, please email or call Debora Pedroza to let her know what food item you would like to bring to the picnic. Also, we are still in need of raffle and silent auction items. They do not have to be astronomy related. Contact Debora if you would like to donate items.

Director of Community Development Terry Pedroza

We have some special events coming up this month: On July 2nd we have our dark sky star party; July 3rd is deep impact with Comet 9P/Temple1- we will be having a two-day star party at Saddleback Butte for this; on July 9th our club picnic is at Crystalaire Country Club; on July 14th we are hosting a star party for NASA at the Poppy Reserve from 8:00 until 11:00pm.; and on July 16th we will be holding a star party for Cub Scout Pack 614 at Saddleback Butte from dusk until 11:00. I hope that you can be a part of one or more of these events with our club.

Well, I've started on my quest of being a better person where light pollution is concerned. I joined the International Dark-Sky Association at the RTMC this year. I talked in depth with Laverne Booth at the RTMC about dark-sky issues and how to become actively involved in the IDA, and I have begun to educate myself about lighting standards and design.

I am now on my quest to find IDA-approved lights for my home. Take my word for it, "It ain't easy." I have yet to find IDA-approved lighting at any of the home improvement stores in the area. I have sent e-mails to Lowe's and Home Depot, and have been told that they do not carry IDA-approved lights but that they will look into it. I will continue to look into a local source but may need to order from one of the manufacturers directly. I will keep you informed on my search.

I have been talking to a gentleman who lives in Frazier Park about light pollution issues and have learned quite a lot. He has given me some great tips on addressing the City and County Planning Commissions about these issues. He has also told me about the State lighting standards that are to take effect this year and how to best use those to our advantage.
You may ask why I am doing this. The answer is easy: I remember when the Milky Way was as bright in town as it is at many of our "dark" sky sites. Please help me in my quest to preserve our dark skies and to bring back the night for all to see and enjoy.

Rich Harper's Planet Watch

July Highlights:
Mercury, Venus and Saturn will be clustered within a few degrees of M44 in Cancer early in July. On the 8th, a two-day old moon will pass Mercury and Venus just before sunset.

Mercury:
Mercury will be observable all through July just after sunset, though it will lie relatively close to the sun.

Venus:
Venus is drifting to the east during the month and will slip past Mercury on the ninth. Venus will remain an evening star all during the month.

Mars:
Mars is in Pisces, at magnitude -0.2, with a diameter of 10 arcseconds. It is now large enough that surface details can be glimpsed provided the seeing is good. Mars will have a very favorable opposition this November, so now is the time to start practicing your observing techniques. Mars has a 25-hour day, so daily observations will allow you to view the entire surface over the course of the month. A #21 orange filter will penetrate the atmospheric haze to show surface details. A #56 or #58 green filter will show polar details and the dark ring around the polar melt zones. A blue filter will show clouds, and a violet filter will show limb hazes and polar clouds. Violet filters have very little light transmission, so a larger aperture is needed to get the most out of them.

Jupiter:
Jupiter is well-positioned all during the month, and can be found in Virgo. Observing Jupiter can also help you learn to see fine details on Mars. A quick check on seeing conditions is to look for a diffraction ring around the Galilean satellites, which I find I can see with a 4" telescope if the seeing conditions are very good. In addition to Jupiter's equatorial bands, look for whitish ovals in the polar regions. In smaller telescopes, these ovals are difficult to resolve and give the polar regions a mottled appearance. In larger instruments, these ovals can be resolved. A medium-blue filter will enhance the contrast of these surface features.

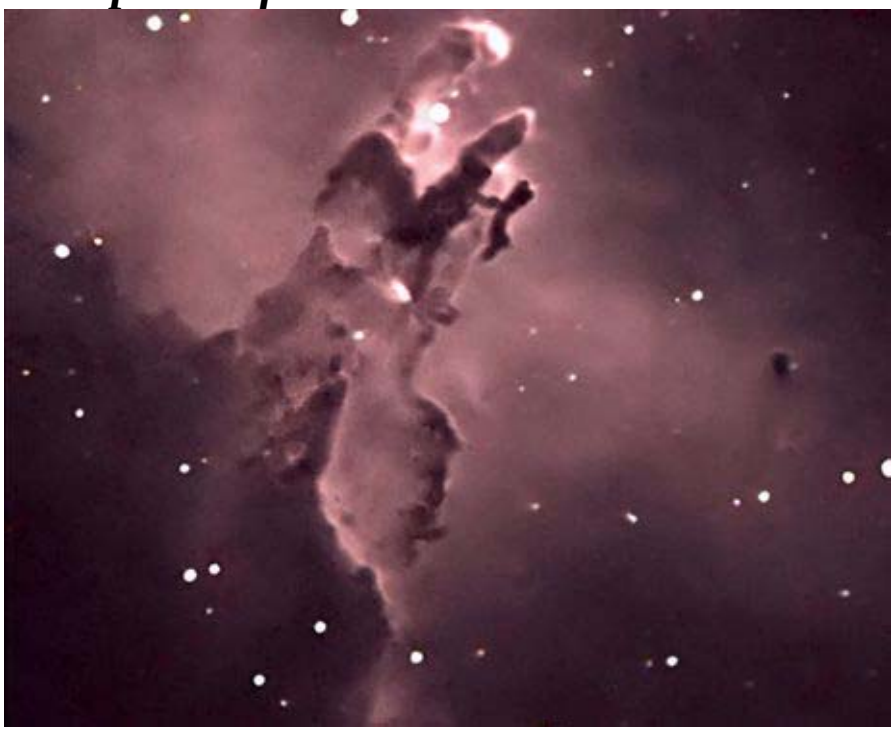
Saturn:
Saturn is, unfortunately, very close to the sun now, and is not well placed for observation. Saturn will return as a morning star later in the year.

Uranus:
If you are really up for a challenge, try looking at Uranus. Uranus is visible at magnitude 5.8, with a diameter of about 3.5 arcseconds. As Uranus has an axial tilt of about 90 degrees, it lies on its side as it orbits the sun. Thus, sometimes we see the polar regions dead on, and sometimes the equatorial regions. A pale equatorial band has been observed in 10" telescopes. Uranus also has four moons that are possibly detectible in large amateur instruments. They are Ariel, Umbriel, Titania and Oberon, with magnitudes ranging from 13.7 to 14.8. They have been glimpsed in telescopes as small as twenty inches.

Neptune:
Neptune is in Capricornus, shining at magnitude 7.8, with an angular diameter of just over 2 arcseconds. Neptune also has a moon that is visible in large amateur telescopes, Triton, at magnitude 13.5. As Neptune is fainter than Uranus, Triton is often easier to find than Uranus's moons because it is less likely to be lost in the glare of its parent.

Pluto:
Pluto is a 0.14 arcsecond speck, stellar in any backyard scope, lying about 4.5 degrees west of the star Sabik in Ophiucus.

Astrophoto of the Month



by Matt Taylor, M16; through a 12” Meade with an Orion 80mm ED guiding scope and DSI Pro guiding camera; filters: IDAS LPR, Meade RGB, Custom Scientific H-Alpha; Exposures: HA 50x1 Min - RGB 15x1 Minute – Luminance 75x1 Minute

Submit your “Astrophoto of the Month” to the following address by the 20th of each month: newsletter@avastronomyclub.org

Moving a Mountain of a Dish

by Patrick L. Barry

Your first reaction: "That's impossible!"

How on earth could someone simply *pick up* one of NASA's giant Deep Space Network (DSN) antennas- a colossal steel dish 12 stories high and 112 feet across that weighs more than 800,000 pounds- move it about 80 yards and delicately set it down again?

Yet that's exactly what NASA engineers recently did.

One of the DSN dishes near Madrid, Spain, needed to be moved to a new pad. And it had to be done gingerly; the dish is a sensitive scientific instrument full of delicate electronics. Banging it around would not do.

"It was a heck of a challenge," says Benjamin Saldua, the structural engineer at JPL who was in charge of the move. "But thanks to some very careful planning, we pulled it off without a problem."

The Deep Space Network enables NASA to communicate with probes exploring the solar system. Because Earth is constantly rotating, a single antenna on the ground can communicate with a probe for only part of the day, when the probe is overhead. By placing large dishes at three locations around the world- Madrid, California, and Australia- NASA can maintain contact with spacecraft around the clock.

To move the Madrid dish, NASA called in a company from the Netherlands named Mammoet, which specializes in moving massive objects. (Mammoet is the Dutch word for "mammoth.")

On a clear day (bad weather might blow the dish over), they began to slowly lift the dish. Hydraulic jacks at all four corners gradually raised the entire dish to a height of about 4.5 feet. Then Mammoet engineers positioned specialized crawlers under each corner. Each crawler looks like a mix between a flatbed trailer and a centipede: a flat, load-bearing surface supported by 24 wheels on 12 independently rotating axes, giving each crawler a maximum load of 194 tons.

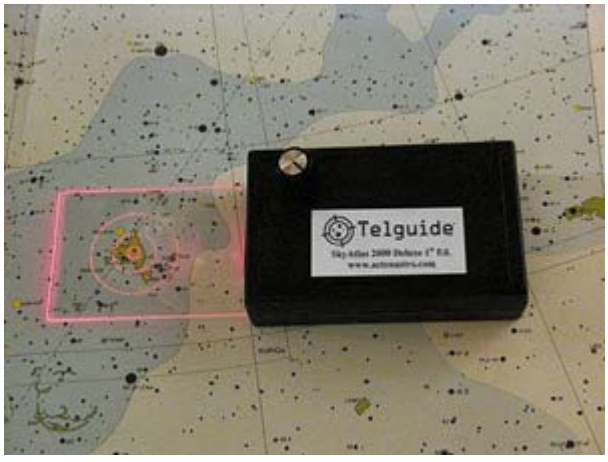
One engineer took the master joystick and steered the whole package in its slow crawl to the new pad, never exceeding the glacial speed of 3 feet per minute. The four crawlers automatically stayed aligned with each other, and their independently suspended wheels compensated for unevenness in the ground.

Placement on the new pad had to be perfect, and the alignment was tested with a laser. To position the dish, believe it or not, Mammoet engineers simply followed a length of string tied to the pad's center pivot where the dish was gently lowered.

It worked. So much for "impossible."

Find out more about the DSN at http://deepspace.jpl.nasa.gov/dsn/ . Kids can learn about the amazing DSN antennas and make their own "Super Sound Cone" at The Space Place, http://spaceplace.nasa.gov/en/kids/tmodact.shtml.

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



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, click here.

AVAC Product Review

by Bill Riedhart

I recently downloaded a new program that is really cool. It's Virtual Moon Atlas by Christian Legrand and Patrick Chevalley. The program is a free download from http://astrosurf.com/avl and comes is several parts that can be downloaded depending on how much space and time the user wants to invest. I have been looking at the Moon more lately and have picked up a couple of good references- like "Atlas of the Moon," by Antonin Rukl- which are very good but lacked a couple of features I was looking for.

First of all, I still get confused by the orientation of the view through my SCT using a right-angle adapter. The view is mirror-reversed from the usual south-down views in "Atlas of the Moon" and other printed atlases. I have a version of Lunar Map Pro, but the interface is somewhat clunky in that you can't move around while looking at the map and the older version I have requires the disk to be installed to run (the newer version does not). Well I was just about to order the newer version when I decided to look at "The Sky," version 6. I have the "Serious Astronomer Edition," which has a Moon map but only in low resolution. The professional version has a high resolution version, but when I checked out what it would cost to upgrade the $150 was too much for me. So after a couple of Google searches I found "Virtual Moon Atlas."

The basic program is about 14MB and contains a fully functional program that runs under my Windows XP with no hitches. I also downloaded the additional 32MB high resolution Clementine map and the Consolidated Lunar Atlas (17MB), Lunar Orbiter (4 files each around 6MB). The resolution of the program matches that of Lunar Map Pro and you can pan around anywhere you like and zoom with the mouse wheel or the zoom control in the menu bar. It also has the capability to display the map with south up or down, mirror-reversed, and rotated at any angle to match the telescope view. One of the best features is the terminator tab, which produces a list of features that are on the terminator at the time you have set, current or any other time. The list is also controlled by setting the telescope size, so it shows what a small scope can see or it will show all features. A click on any feature centers it on the moon map and a right click of the mouse brings up a side panel with detailed information including description, name, origin, dimensions, etc.

There are lots of other features to explore, so go try them out- it's free. If you're interested in the Moon it's a must-have program.

18" f/4.5 Obsession Truss-Tube Telescope with shroud. Primary is by Galaxy Optics, 3.6" secondary is by United Lens Company. Both are research grade and have interferometry reports. The primary is fan-cooled, and the secondary has a Kovac heater. The eyepiece holder is a 2" Feather-lite focuser from Star Lite Instruments. The trusses are 1 1/4" black-anodized aluminum, with brass hardware and stainless steel bolts for assembly. The secondary mirror cage has its own padded Sonotube case. The telescope comes with the following extras: a Telrad; a Telvue Type 5 31mm eyepiece; a Telvue Paracorr; a Televue Type 6 9mm Nagler; a Televue 32mm Wide-Field; and a 13mm Nagler. All extras were acquired new except the 13mm Nagler. $4,500 for everything. Contact Don Hill, 661-618-8256.

Did you know? ? ?

If you can't make it out to see Deep Impact in person on July 3, you can see it on the Internet. One such site is www.slooh.com

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A.V.A.C. Board Members

President:
Debora Pedroza (661) 718-3963 president@avastronomyclub.org
Vice-President:
Mindy Peterson (661) 273-169 vice-president@avastronomyclub.org
Secretary:
Larry Oschner (661) 274-9006 secretary@avastronomyclub.org
Treasurer & Astronomical League Coordinator:
David Abrass treasurer@avastronomyclub.org
Director of Community Development & Club Librarian:
Terry Pedroza (661) 718-3963 community@avastronomyclub.org

Newsletter Editor:
Brian Peterson (661) 273-1693 newsletter@avastronomyclub.org
Club Historian:
Tom Koonce (661) 943-8200 Takoonce@aol.com
Webmaster of Club Site:
Steve Trotta (661) 269-5428 webmaster@avastronomyclub.org

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.

Our Sponsors

Al's Vacuum and Sewing: 904 West Lancaster Blvd. (661) 948-1521. Stop by and say "hey" to Matt and Sue and run from Michael.
QNET: 1529 E. Palmdale Blvd., Suite 200. (661) 538-2028. As an Internet provider, they are kind enough to provide us with a free website.
High Desert Broadcasting: General Manager, Vicky Connors (661) 947-3107; They assist us in advertising our Club.
Woodland Hills Camera: 5348 Topanga Canyon Blvd., Woodland Hills. 888-427-8766.
www.telescopes.net

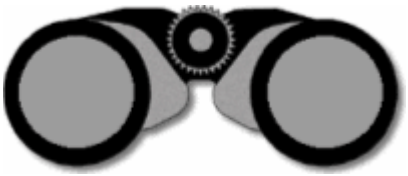
Thank you to our sponsors for your generous support!

RTMC 2005
"Revenge of the Big Spenders"

Debora Pedroza cooks while everyone else waits to dig in.

Mary Andrus and Sue Leone relax in the club booth.

A Look Ahead…



Upcoming Events

August 6: Picnic and Star Party, Steve Trotta's house

September 3: Star Party, Mt. Pinos

Astronomy Links on the Web

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)
http://sci.esa.int
(The European Space Agency)
http://www.astro.ucla.edu/~obs/intro.html
(Mt. Wilson's website)
http://www.jpl.nasa.gov/
(JPL)
http://sohowww.nascom.nasa.gov/
(the latest SOHO images)
http://www.telescope.com
(Orion Telescopes)
http://www.astroleague.org/
(The Astronomical League site)
http://antwrp.gsfc.nasa.gov/apod/archivepix.html
(Pic of the Day)
www.avastronomyclub.org/
(Hint: you've heard of that bunch)