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

March 3: Full Moon
March 9: Club meeting
March 12: Board meeting, Last Quarter Moon
March 17: Messier Marathon @ Saddleback Butte State Park
March 19: New Moon
March 23: Star Party @ Wilsona Elementary School
March 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

Welcome to all of the new members of the Antelope Valley Astronomy Club and hello again to all continuing members. I have a question that I would like to pose to all of you:

What is the largest benefit of membership in the Antelope Valley Astronomy Club? Is it the classes? Is it the ability to check out books and videos from the library? Is it the telescopes that one can borrow from the club? Think about it, these are all great benefits not available anywhere else in the Antelope Valley. I personally believe there is an even greater benefit to membership and that quite simply is…the members, and the inspiration that comes from fellowship with others who enjoy our common interest in astronomy.

When I first joined the AVAC back in February 2000, the thing that I enjoyed most was being with those who enjoyed and were willing to share with me their love of astronomy. I will never forget the first Messier observing group that I attended at Saddleback Butte State Park. Steve Trotta and his C-8 ruined me…me with my little DS70-EC (70mm) refractor on its shaky little mount and Steve with that beautiful C-8! Aperture fever had set in! I will always remember my first Messier marathon and the dew running off the corrector plate of MY new C-8.

Since that time I have grown enormously as a person. I have learned that it's not that unnerving to speak in public and have even learned to enjoy it. I have had my eyes opened to new areas of this great hobby. I now, as do many of my friends in the AVAC, collect meteorites and continuously learn about their place in the universe. I have enjoyed sharing this great hobby at area schools and public events.

Why, you might ask do I bring all this up? Because I hope that all of you can learn and enjoy this great hobby and this great club as I have, and be a part of sharing it with those in our community that have not yet begun to enjoy the wonders of science as we have.

TERRY

Vice President
Shane Barker

This month's speaker is Dr. Luisa Rebull from Cal Tech University, where she works with the "Spitzer Space Telescope." Additionally, she went to college at William and Mary in Williamsburg, VA and to grad school studying astronomy and astrophysics at the University of Chicago.

The Spitzer Space Telescope is the fourth and final element in NASA's family of great observatories and represents an important scientific and technical bridge to NASA's "Astronomical Search or Origins" program. The Observatory carries an 85-centimeter cryogenic telescope and three cryogenically cooled science instruments capable of performing imaging and spectroscopy in the 3.6 to 160 micron range.

She does research on the rotation of young stars in and around the Orion Nebula Cluster. These "teenage" stars will grow up to be stars like our Sun, and exactly how fast they rotate may have something to do with whether or not they are forming planets. She also studies the chemical abundances of these young stars as well as some of the oldest stars in our galaxy.

She volunteers at the Adler Planetarium and works with the CARA Space Explorers. Plus, she found an organization that brought the internet to 29 inner-city schools around the University.

Points of Interest:

A "Thumbnail Moon" flirts with Venus March 20. Most of the Moon's disk isn't lit by the Sun then, but the blue-gray glow of Earth earthshine faintly lights the whole lunar disk.

Saturn's Moon Titan stands south of the planet at midmonth. If you have a telescope that even hints at the presence of Saturn's rings, Titan should be an easy target.

SHANE BARKER

Director of Community Development
Rose Moore

The month of March has a few events for our club, starting with a Full Moon Walk with Jeremy at Prime Desert Woodlands on Saturday March 3rd, at 6:30pm. We then have our club Messier Marathon at Saddleback on Saturday, March 17th. March 23rd, Friday, is our Astronomy Star party for the kids at Wilsona Elementary School, starting at 6pm. For our 2 public events, we need volunteers to help out and bring scopes or other items of interest for the public and kids. April and May are shaping up to be busy months for the club including: Moon Walks at Prime Desert Woodlands, the Poppy Festival, Mojave Student Rocket Launch Day, Branch Elementary Science Day, Riverside Telescope Makers Conference, and a possible club star party at Red Rock Canyon with an astronomy event for the public the same night. Please come out to support our club, we can use your enthusiasm and your help!!

CLEAR SKYS!
ROSE M

Secretary's Committee Reports
Tom Koonce

We have some very exciting events that have been announced by our committee chairs, please review the following items and show your support by not only turning out for the events but participating as well. Debora Pedroza always needs help with the essay contest that has grown to become a very large responsibility and Jeff Reichmann has outdone himself with the terrific opportunities he has arranged. Both the XCOR and Spaceport visits will allow you to meet and speak with some of the greatest engineering minds on the planet; these are the true explorers of tomorrow's frontiers.

Youth Exploring Astronomy Essay Contest (YEA)

Debora Pedroza announced the YEA topics for 2007:

- **5th-6th Grade**
  "If I Were a Shooting Star"
  "What I Did On My Space Vacation"
- **7th-8th Grade**
  "What Will Space Travel Be Like in 100 Years?"
  "Milky Way Is Not Just Another Candy Bar"

Messier Marathon

Tom Koonce

- Provided handouts for the upcoming Messier Marathon on Saturday, March 17, 2007. The location will be Saddleback Butte State Park Group Campsite. It will go from 5:00 pm through 5:00 am (weather permitting)

Jeff Reichmann

- Announced that XCOR has invited the AVAC for a hangar tour and to see a test firing of an ultra-small rocket motor. Members will receive more info if they sign up on a sheet provided at each meeting.
- On May 4, the Mojave Space Port will be hosting a model rocket day from 10:00 am – 12:00 pm. They've asked is the AVAC will set up solar telescopes and a display.

Club Librarian

Karole Barker announced that the Club's first complete electronic inventory has been completed and is available by the membership on the website. She reviewed what items can be checked out to new members, intermediate members and advanced members, based upon what classes they have completed.

Even Solar Sails Need a Mast

by Patrick L. Barry

Like the explorers of centuries past who set sail for new lands, humans may someday sail across deep space to visit other stars. Only it won't be wind pushing their sails, but the slight pressure of sunlight.

Solar sails, as they're called, hold great promise for providing propulsion in space without the need for heavy propellant. But building a solar sail will be hard; to make the most of sunlight's tiny push, the sail must be as large as several football fields, yet weigh next to nothing. Creating a super-lightweight material for the sail itself is tricky enough, but how do you build a "mast" for that sail that's equally light and strong?

Enter SAILMAST, a program to build and test-fly a mast light enough for future solar sails. With support from NASA's In-Space Propulsion Program to mature the technology and perform ground demonstrator tests, SAILMAST's engineers were ready to produce a truss suitable for validation in space that's 40 meters (about 130 feet) long, yet weighs only 1.4 kilograms (about 3 pounds)!

In spite of its light weight, this truss is surprisingly rigid. "It's a revelation when people come in and actually play with one of the demo versions—it's like, whoa, this is really strong!" says Michael McEachen, principal investigator for SAILMAST at ATK Space Systems in Goleta, California.

SAILMAST will fly aboard NASA's Space Technology 8 (ST8) mission, scheduled to launch in February 2009. The mission is part of NASA's New Millennium Program, which flight tests cutting-edge technologies so that they can be used reliably for future space exploration. While actually flying to nearby stars is probably decades away, solar sails may come in handy close to home. Engineers are eyeing this technology for "solar sentinels," spacecraft that orbit the Sun to provide early warning of solar flares.

Once in space, ST8 will slowly deploy SAILMAST by uncoiling it. The truss consists of three very thin, 40-meter-long rods connected by short cross-members. The engineers used high-strength graphite for these structural members so that they could make them very thin and light.

The key question is how straight SAILMAST will be after it deploys in space. The smaller the curve of the mast the more load it can support. "That's really why we need to fly it in space, to see how straight it is when it's floating weightlessly," McEachen says.

It's an important step toward building a sail for the space-mariners of the future.

Find out more about SAILMAST at nmp.nasa.gov/st8. Kids can visit http://spaceplace.nasa.gov/en/kids/st8/sailmast to see how SAILMAST is like a Slinky® toy in space.

An image of a solar mast may be downloaded at http://spaceplace.nasa.gov/news_images/sailmast.jpg

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

"Through the Eyepiece" Astrophotography with the Orion SteadyPix Camera Mount

Review by Tom Koonce

If you have a 'tracking' telescope and a camera, an inexpensive camera mount is all you need to start taking astrophotos! I got a good shot of the Moon the very first time I set up my digital camera on the new "Orion SteadyPix Camera Mount". No other equipment was needed. My equipment set-up is what would be considered 'middle of the road' quality and expense - an ETX-125 with Autostar and a Nikon CoolPix 5200 with no manual focus that I know of.

The camera mount sells for $35 in the Orion catalog (www.oriontelescopes.com) and will fit nearly all digital cameras. All you have to do is put your eyepiece of choice in the telescope then attach the felt-lined camera mount clamp around the 1.25" eyepiece, align the front of the camera lens with the eyepiece and turn on the camera. I used the camera's viewing screen to both set the camera mount distance for focus and get the image in the center of the finder. There are better ways of doing this, but my 5 minute setup yielded the image of the Moon below, so I know that someone with any glimmer of astrophotography talent will do an even better job! I used the self timer mode on the camera to reduce any vibrations, and then I pressed the button.

That's it. Note - the image below doesn't have any processing at all.

I found that my long eye relief eyepieces worked the best in this setup, it was easier to get the image to focus. It came with a second clamp for 2" eyepieces, but the ETX-125 won't take eyepieces that big anyway. If you haven't tried astrophotography through your telescope, you should. The Moon is the place to start and the Orion SteadyPix Camera Mount will hold your camera steady in front of the eyepiece.

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

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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.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)

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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.astor-tom.com
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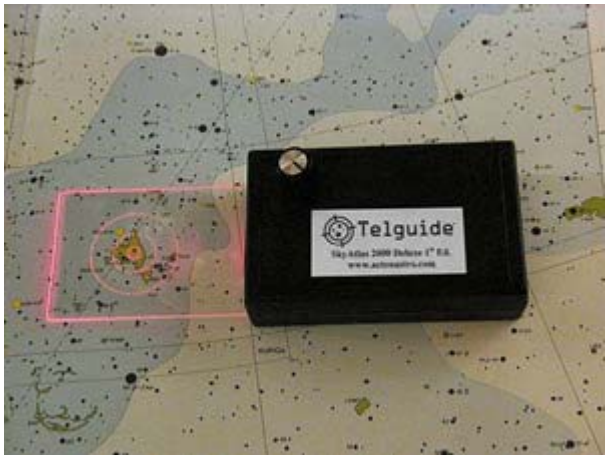

The ***Telguide***.
Our own Steve Trotta has invented the Telguide to aid you in your galactic hunts.
For more information on how a Telguide can help you, http://www.actonastro.com