



Desert Sky Observer

Volume 25 Issue 12

December 2005



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
Dark-Sky Association.*



Up-Coming Events

- December 1:** New Moon
- December 3:** Annual Christmas Party
- December 8:** First Quarter
- December 15:** Full Moon
- December 21:** Winter Solstice
- December 23:** Last Quarter Moon
- December 25:** Christmas
- December 26:** Boxing Day
- December 31:** New 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

Happy holidays to each and every one of you! It is so hard to believe that a year has passed since I took on the Executive Board position of president. I have been so fortunate to work with such an awesome club and its members. The Executive Board officers have worked diligently and put great care into their roles and responsibilities. The club has had a busy, thriving and prosperous year and it is because of dedicated members such as our Board members and to many other members as well. We continue to be a much sought after non-profit organization, which has enabled us to really work our mission statement of sharing the wonders of astronomy with others.

Even more valuable than that are the friendships, the memories and the fun we share at club meetings and star parties. I would like to extend a huge thank you to each and every Board member for the year 2005. Our Vice President, Mindy Peterson, did an outstanding job setting up a fantastic line of speakers this year and in conducting membership meetings in my absence. When she made a beautiful quilt and donated it to our club for fund-raising, I knew that women could rule! Thank you Mindy! Our club Treasurer, David Abrass, treated our club's assets as if it were his own; very diligent. Thank you, David. Larry Ochsner, the club's Secretary- coming up on his third consecutive year now- is timely, thorough and a great voice on the Board. Thanks for another great year, Larry!

As mentioned earlier, we had a very busy year and the club represented itself in many community events. Our Community Development Director, Terry Pedroza, held tight reins on things and as usual, got everything up and running. He remains a strong advocate for our club and continues to make a difference in everything he does. Thanks again, Terry!

Continuing on with my bragging rights, the Antelope Valley Astronomy Club has the **best** Newsletter Editor and Webmaster! Brian Peterson and Steve Trotta...you do us proud. Thanks for being the very best at what you do!

In closing, I would like to congratulate and welcome our new Executive Board to the realm in 2006. The very best to all of you...until later. Take good care.



*Vice
President
Mindy
Peterson*

This is my final entry for the Desert Sky Observer as your Vice President. Our club has seen a year filled with great speakers. In January, we welcomed Dr. Gary Peterson from San Diego State University. His topic was "Collisions Of Comets And Planets" and his talk was well received by the club members. In February, James Sokolik, a Dryden life support technician employed by Lockheed Martin Aeronautical Systems, spoke about "Life Support." He was a new speaker for our club and his talk and demonstrations were fun.

March brought us Bob Redman, a.k.a. "Captain Bob." He is always a delightful speaker. In April, our friend Chris Butler was back again to give us a new tale of adventure and he delighted us with his artistry. May's speaker was supposed to be Dick Rutan but at the last moment he cancelled and our club had to scramble. And scramble they did! We turned a disaster into a fantastic Astronomy Fair which was so popular that we are going to hold it every year.

Our own Jeremy Amarant spoke in June about his travels to Spain, Russia and China as it relates to astronomy as well as the Global Network of Telescopes and Hands On Universe. In July, Club member Lee Bush brought a different perspective to the club when he spoke about "The Antropic Principle and Intelligent Design." In August, JPL planetary scientist Dr. Diana Blaney spoke about the "Phoenix Mission," set to launch in 2007.

September was a banner month. Spaceship One pilot Brian Binnie was our speaker and he did not disappoint us. We had the opportunity to listen to a man who will go down in history as one of aviation's greatest. In October, we had our annual "Ask The Experts," emceed by Brian Peterson. Thanks to Jeremy Amarant, Tom Varden, Bill Riedhart, and Tom Koonce for serving as our panel of experts.

In November, David F. Coppedge, Team Lead System Administrator for the Cassini Mission to Saturn was our speaker. Mr. Coppedge shared the thrill and the latest and greatest hits of the Cassini mission to Saturn. I think we all learned something new about the great planet.

December brings us full circle and to the close of a great year. Join us for our annual Christmas Party on December 3rd. I would like to take this opportunity to thank all of the club members for their support and appreciation of my position as your Vice President. Clear Skies!

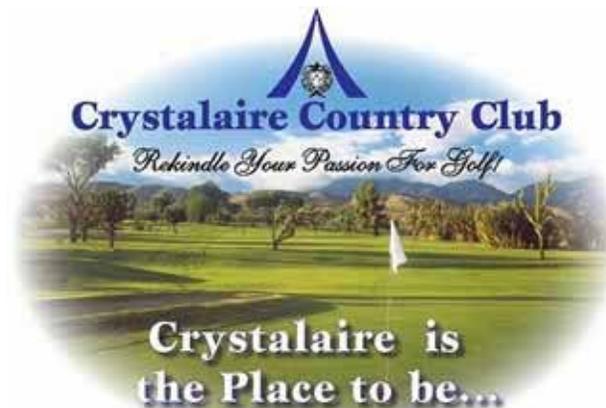


*Director of
Community
Development
Terry Pedroza*

I would like to thank all of the great folks who are members of the Antelope Valley Astronomy Club for allowing me the privilege of serving on the Executive Board as Director of Community Development In 2005. I am the one who reaped the benefits of this appointment by being able to talk to all the fine folks who work and reside in the Antelope Valley on behalf of the Antelope Valley Astronomy Club, and by allowing me to talk and write to all the members at our meeting and events. This has given me the chance to grow in my personal skills as well as given me the opportunity to meet some of the nicest people on the face of this Earth. For this, **I Thank You!**

Mount Wilson did not go as we had hoped. We were blown out and dewed out before we ever got started. Luckily I was in contact with Mike from the Mount Wilson Institute a couple of days beforehand and we worked out a plan to contact each other the morning of the event. No one made the journey to the mountain so our plan worked. We will be rescheduling for the second quarter of 2006. Moneys can be refunded to those who cannot make it then or decide not to go. This is the way it goes for professional astronomers, also. You never know what Mother Nature is going to hand you.

Other than the Holiday Party on December 3rd there are no other events to tell you of... So I shall say Good Bye and Thank You for the opportunity.



Rich Harper's Planet WatchMercury:

Mercury begins the month in Libra, and will increase in separation from the sun. If you are up in the morning observing Jupiter and Saturn, take a look at Mercury as well. The calm, pre-dawn air should give you very steady seeing. On the 17th and 18th, Mercury will pass M80 for the third time in two months. By the end of the month, Mercury will be rapidly closing on M8 and M20 in Sagittarius.

Venus:

Venus will give us some fun this month. Low in the sky, but well separated from the sun, Venus will practically run over the globular cluster M75 in Sagittarius. On the 11th, Venus will be a mere 0.3 degrees away from M75. On the 12th, it will close to 4 arcminutes.

If my planetary program is correct, Venus will nearly or actually occult M75, starting at 7:00 pm on the 12th, through 12:00 am on the 13th, passing 25 arcseconds from the center of M75 at 9:00 pm. on the 12th. M75 is described as an unresolved patch of magnitude 8.5, with a visual diameter of two to four arcminutes depending on the aperture of the telescope used. The problem will be finding the 8th magnitude M75 in Venus' glare.

Mars:

Mars lies in Aries, and is shrinking and dimming rapidly. On the first, Mars will have an angular diameter of 16.7 arcminutes, and a magnitude of -1.6. By the end of the month, Mars will have faded to magnitude -0.6 and shrunk to 12 arcminutes, barely large enough to observe details on the surface. And that's about it until 2009.

Jupiter:

Jupiter crosses into Libra this month, and while not terribly well-positioned for observing, rising about two hours before the sun early in the month, the situation will improve later in December as Jupiter will be well up before dawn, rising a full four hours before dawn.

Saturn:

Saturn remains in Cancer, very high in the pre-dawn sky, well-positioned for viewing all month. The moon will pass a few degrees north of Saturn on the 19th.

Uranus:

Uranus lies in Aquarius and should be an easy target in binoculars at magnitude 5.8. Uranus sets right around 10:30 pm.

Neptune:

Neptune sets very early this month, about 9:00 pm. Neptune can be found a few degrees south of M72 and M73 in Capricorn. The moon will pass about 5 degrees south of Neptune on the 5th.

Pluto:

Very faint Pluto will be lost in the sun's glare this month, at dusk early in the month, or at dawn later in the month.



Voices from the Cacophony

by Trudy E. Bell and Dr. Tony Phillips

Around 2015, NASA and the European Space Agency plan to launch one of the biggest and most exacting space experiments ever flown: LISA, the Laser Interferometer Space Antenna.

LISA will consist of three spacecraft flying in a triangular formation behind Earth. Each spacecraft will beam a laser at the other two, continuously measuring their mutual separation. The spacecraft will be a mind-boggling 5 million kilometers apart (12 times the Earth-Moon distance), yet they will monitor their mutual separation to one *billionth* of a centimeter, smaller than an atom's diameter.

LISA's mission is to detect gravitational waves- ripples in space-time caused by the Universe's most violent events: galaxies colliding with other galaxies, supermassive black holes gobbling each other, and even echoes still ricocheting from the Big Bang that created the Universe. By studying the shape, frequency, and timing of gravitational waves, astronomers believe they can learn what's happening deep inside these acts of celestial violence.

The problem is, no one has ever directly detected gravitational waves; they're still a theoretical prediction. So no one truly knows what they "sound" like.

Furthermore, theorists expect the Universe to be booming with thousands of sources of gravitational waves. Unlike a regular telescope that can point to one part of the sky at a time, LISA receives gravitational waves from many directions at once. It's a cacophony. Astronomers must figure how to distinguish one signal from another. An outburst is detected! Was it caused by two neutron stars colliding *over here* or a pair of supermassive black holes tearing each other apart in colliding galaxies *over there*?

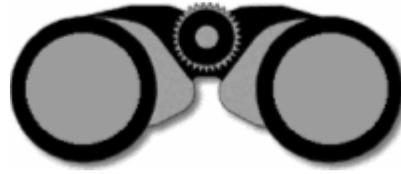
"It's a profound data-analysis problem that ground-based astronomers don't encounter," says E. Sterl Phinney, professor of theoretical physics at the California Institute of Technology in Pasadena.

Profound, but not hopeless. "We have lots of good ideas and plans that work- in theory," he says. "The goal now is to prove that they actually work under real conditions, and to make sure we haven't forgotten something."

To that end, theorists and instrument-designers have been spending time together brainstorming, testing ideas, scrutinizing plans, figuring out how they'll pluck individual voices from the cacophony. And they're making progress on computer codes to do the job.

Says Bonny Schumaker, a member of the LISA team at the Jet Propulsion Laboratory, "It's a challenge more than a problem, and in fact, when overcome, a gift of information from the universe."

For more info about LISA, see lisa.nasa.gov. Kids can learn about black holes and play the new "Black Hole Rescue!" game on The Space Place Web site at <http://spaceplace.nasa.gov/en/kids/blackhole/>.

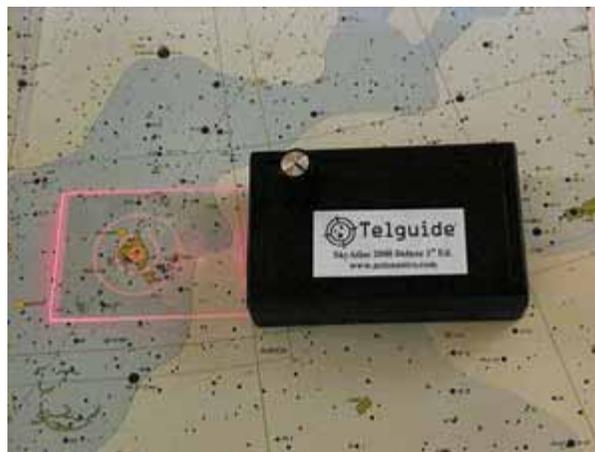
A Look Ahead...**January Speaker**

Dr. Alexandre E. Meier's talk will be entitled "From Einstein to Strings: a look at some ideas of modern cosmology." He will be looking at where the ideas of strings and 11 dimensions come from and why we believe them.

Dr. Meier was born in Lausanne, Switzerland. He attended the Swiss Federal Institute of Technology as an undergraduate where he studied Chemical Engineering and studied at Carnegie-Mellon University in Pittsburgh, where he worked on low-temperature EPR spectroscopy of manganese-containing enzymes. For his master's thesis, he developed new methods in low temperature far-infrared spectroscopy.

Dr Meier studied at the California Institute of Technology, where he worked under Dr Harry Gray. His Ph.D. was on high valent-metal oxidation states of chromium and gallium corroles.

Since graduation, Dr Meier has been working with a non-profit organization, Heaven Word, where he develops science and math curriculums and robotic astronomy programs.

**The *Telguide*.**

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Did you know? ? ?

NASA's Mars Reconnaissance Orbiter (MRO) will rendezvous with the red planet on March 10, 2006.

? ? ?

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

Debora Pedroza (661) 718-3963 president@avastronomyclub.org

Vice-President:

Mindy Peterson (661) 273-1693 vice-president@avastronomyclub.org

Secretary:

Larry Ochsner (661) 274-9006 secretary@avastronomyclub.org

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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!

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)



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Next up: Incoming Board members in January are President Doug Drake, Vice President Richard Hague, Treasurer Steve Trotta, Director of Community Development Rose Moore, and Secretary Larry Ochsner.

Here are some photos from the October 29th starparty at Saddleback Butte.

