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# 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 is a California non-profit Corporation  
Visit the Antelope Valley Astronomy Club website At [www.avac.av.org](http://www.avac.av.org)  
The A.V.A.C. is a Sustaining Member of The Astronomical League*



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## Up-Coming Events

**April 1:** New Moon

**April 4:** Mount Wilson trip

**April 9:** First Quarter Moon

**April 11: Monthly Club Meeting\***

**April 16:** Full Moon

**April 23:** Last Quarter Moon

**April 26-27:** Poppy Festival, Lancaster

**Anytime:** *Observe*

\* Monthly meetings 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 20<sup>th</sup> Street East. Meeting starts at 7 p.m. Please note that food and drink are not allowed in the planetarium. Monthly A.V.A.C. meetings are open to the public.

## President's Report

*Terry Pedroza*

The Kings Canyon Observing site is starting to take shape, with our first star party there March 29<sup>th</sup>. We will be looking to sign a long-term agreement for the site after we hear from you, our members, that yes, we like it. The next scheduled star party there is May 31<sup>st</sup>. Our members may use the site at any time though. Please be very aware that Ken Basham owns and is letting us use his property, so we need to keep it quiet and clean. Please pick up all your trash and any other trash you may see at the site. It really is a beautiful place out there.

We have so many events coming up. We will need all our members' help to make them the great events that the community is used to from the AVAC. Please try to involve yourself in these events. Deb will be talking more about each event in her column.

With the weather starting to get warmer, I expect we will be having more last-minute star parties. If you are going to observe and want company, use the new website [forum](#) and see what happens. I'm hoping that this new tool we have will get plenty of use from our members. I would also expect our Observing Groups to start getting larger and to get together more often. The website might be a good place for the groups to communicate with each other.

Once again, this is your club. If you have any ideas or suggestions please let one of the Board members know so that we can discuss the ideas with you.

Clear Skies All.

**Vice President's Report***Tom Koonce*

We were fortunate to have John Dobson come to speak to our club for the third time in as many years at our most recent Club meeting. Although he had recently come back from an entire summer of touring Russia and the Ukraine talking with amateur astronomy groups, he didn't want to talk about the trip. He wanted to talk to us again about his 'Recycling Model' of the universe. So, John being John, he did just that. It certainly was an interesting lecture, and thought provoking, too. It's interesting to me to hear views that oppose mainstream Astrophysics and Cosmology, if only because they stir up the pot a little bit. Even though the mainstream scientific community holds up evidence (and a whole lot of evidence) that points them in the direction of the Big Bang, John points at 'dark matter' as being a major inconsistency in their theory. It is seen as problematic by proponents of the Big Bang model, but theoretical astrophysicists are looking into ways of tying it into the Grand Unified Theory and to explain the underlying physics of everything along with it. The problem of dark matter is not as much an insurmountable wall as an obstacle that cosmologists are working diligently to overcome – with every expectation of success at this point.

While much of John's talk was at a very high level, it's important that our members keep a balanced view of the talk as just *one* side of a cosmological debate that has many factions. John's views are interesting, as are those presented by others. For balance, the Club needs to bring in a "Big Bang" proponent to show us in simple terms about all of the evidence that has swayed a large majority of the world's top astrophysicists towards the Big Bang model of the universe. There are other sides, too- other models, other philosophies. Perhaps this is what makes cosmology so interesting: there is no black and white, right and wrong. Philosophy can be proposed, debated, accepted or rejected, but at the end of the day any debate would have to admit that much about the truth about the origins of the universe is still unknown, despite our attempts at catching a glimpse of it through simulations and mathematical models. Not a single one of us was there during the initial moments to tell the rest of us how it *really* was.

I must offer a correction to one thing John said during his talk. He mentioned a couple of times that the cosmologists putting forth the Big Bang model were developing new physics to match the model, instead of matching the model to the physics. The inference was that scientists are playing funny games to get everything to work out in favor of their pet theory. These top scientists, including Nobel Prize winning astrophysicists and astronomers, are very smart women and men. They will not bend the truth just to get something to work out the right way. Science at this level is subject to rigorous peer review of each and every concept. An idea only gains acceptance after being subject to many different arguments and experimental criteria. We have so much to learn about the universe, and the Big Bang model has held up *extremely* well to date. Scientists use any apparent discrepancies to focus their research in specific directions that they need to understand better. They have certainly found 'new physics' as they pursued their investigations, but they haven't adapted it to fit the Big Bang model. Instead, they have slightly *evolved* the Big Bang model itself. In doing so they have gained further insight into the workings of the universe, and have been able to propose new quantifiable, testable hypotheses, to prop up their model. (Please notice I did not say 'prove.')

John's talk was ultimately one that mixed elements of physics, personal theory, and existentialism all together for a very entertaining talk. Please accept it in the spirit it was intended: to provoke thought, question the status quo, and to encourage debate. And John loves to debate nearly as much as he loves the subject he speaks about.

**Dir. of Community Development***Debora Pedroza*

Spring is here and it is that time again. Yes, the Poppy Festival is right around the corner and we will be promoting our club as well as sharing “sun spot activity.” The club will also be holding an “opportunity drawing” for a new telescope. The drawing continues to be a huge success in “igniting and enticing” enthusiasm for our club. We also gain a few memberships, too. The fun is contagious and we meet a lot of nice people.

The festival is being held this year on April 26 and 27. We have sign-up sheets already started for both Saturday and Sunday. The hours of operation on both days are 10 am. to 6 pm. We run three shifts a day with a minimum of six volunteers per shift. Ideally, we like to have three ‘scopes going at all times with a person on the sun spotter, two people in the information booth, and two people selling “opportunity drawing” tickets. If you have never had the experience of helping out at one of these events, you just have to come out and try it! It is so rewarding to work with not only the public but with other club members as well...and hey...what about those poppies popping up all over? They are absolutely GORGEOUS this year. A must-see. Mary Andrus is in charge of volunteer set-up. Let her know if you would like to help.

The essay contest is in its final two weeks of the writing period and then on to the judging. Our panel of judges this year include: Palmdale mayor Jim Ledford, Lancaster mayor Frank Roberts, Captain Bob Redman, Tom Koonce, Steve Trotta, Chuck Lahmeyer from JPL and me. The club would like to extend a warm “thank you” to Gary Griggs of Lockheed-Martin. Once again, the company is providing the funds needed to purchase the jackets and hats for our six essay contest winners. THANK YOU!

Here is a quick peek at what lies ahead of us for the month of April in an outline form.

- April 4<sup>th</sup>- Observing trip to Mount Wilson
- April 5<sup>th</sup>- The Vern Saxon Aerospace Museum in Boron. 10 am.-2 pm.
- April 8<sup>th</sup>- (Tuesday) Escapees Star Party. AV Fairgrounds. 7 pm.-10 pm.
- April 26 & 27<sup>th</sup>- Poppy Festival at Lancaster City Park. 10 am.-6 pm.

Clear skies to all and may God bless America!

**Doug Drake's *Planet Watch*****Mercury**

This month you will be able to see Mercury just after sunset. Mercury will rise higher and higher above the horizon each day and will reach its highest point on April 16. It will then become lower and lower above the horizon. Look for Mercury in the West just above where the Sun has set. You must wait till the sky is entering twilight so the sky will be a little darker to find Mercury. You may need binoculars to find Mercury and then transfer to your telescope to observe the tiny disc.

Jupiter

Observe Jupiter almost straight above you when you start looking at the night sky, just after 8:00 pm. Jupiter is the brightest object you'll see at night, except for the Moon.

On March 24, a small group of us looked for one of Jupiter's moon's eclipsing another moon. We observed Callisto eclipsing Europa right on schedule. At first Europa was much brighter than Callisto and then we saw Europa become dimmer and dimmer and smaller. They both became the same brightness and size and then Europa became even dimmer and smaller as Callisto's shadow encroached upon Europa's disc. The eclipsing event is very subtle, but knowing the fact that we were observing a moon of another planet being eclipsed by another moon was mind boggling. I will be giving out some handouts for another eclipsing event in April at our April meeting, so be there or be square.

**Musical Satellites**

by Dr. Tony Phillips

If light were sound, then chemicals would play chords.

Water: C major. Cyanide: A minor. Chlorophyll: G diminished 7th. (Please note that the choice of chords here is only for the sake of illustration, and not meant to reflect the actual spectra of these chemicals.)

It's a loose metaphor, but an apt one. Musical chords are combinations of frequencies of sound (notes), while chemicals leave unique combinations of dips in the frequency spectrum of reflected light, like keys pressed on a piano. Spectrographs, machines that recognize chemicals from their "chords of light," are among the most powerful tools of modern chemistry.

Most earth-watching satellites, like the highly successful Landsat series, carry spectrographs onboard. These sensors measure the spectra of light reflected from forests, crops, cities, and lakes, yielding valuable information about our natural environment. Current satellites do this in a fairly limited way; their sensors can "hear" only a few meager notes amid the symphony of information emanating from the planet below.

EO-1 could change that. Short for "Earth Observing 1," EO-1 is an experimental NASA satellite in orbit since 2000. It's testing out a more advanced "spectrometer in the sky" -the Hyperion hyperspectral imager. How good is it? If Landsat were "chopsticks," EO-1 would be Gershwin's "Rhapsody in Blue."

The Hyperion sensor looks at 220 frequencies in the spectrum of visible and infrared light (0.4 to 2.5 microns) reflecting off Earth's surface. Landsat, in contrast, measures only 10 frequencies. Bryant Cramer, who manages the EO-1 project at the Goddard Space Flight Center, puts these numbers in perspective. "If we flew Landsat over the northeastern United States, it could readily identify a hardwood forest. But using hyperspectral techniques, you probably can... tell the oak trees from the maple trees."

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Future earth-watching satellites may use Hyperion-like instruments to vastly improve the environmental data they provide. EO-1 is paving the way for these future missions by taking on the risk of flight-testing the sensor for the first time.

For farmers, foresters, and many others, this new remote sensing technology will surely be music to the ears.

Read about EO1 at <http://eo1.gsfc.nasa.gov>

Budding young astronomers can learn more at [http://spaceplace.nasa.gov/eo1\\_1.htm](http://spaceplace.nasa.gov/eo1_1.htm)



John Dobson makes his case to the Club for a 'recycling' universe.



Dobson adds levity to the meeting by throwing fliers to Club members.

## Announcements:

*If you have not re-upped your membership from last year, then this will be the last DSO that you will receive. Renew your membership soon!*

Our next club meeting (April 11) will feature club Vice President Tom Koonce as our next speaker. Tom will speak on "Astronomy Essentials."

## Did you know?      ?

NASA recently released a computer-enhanced photo from space which shows part of the impact crater on the Yucatan peninsula believed to be from the dinosaur-killing asteroid of 65 million years ago.

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### ***Astronomy Links on the Web***

<http://pages.prodigy.net/sstrott/>

(Steve Trotta's website)

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

(Tom Koonce's website)

<http://www.projectsandhobbies.com/howtolearnastronomy.htm>

(Getting started in Astronomy...)

<http://www.physics.sfasu.edu/astro/jupiter.html>

(everything Jupiter)

<http://antwrp.gsfc.nasa.gov/apod/archivepix.html>

(Astronomy Picture of the Day)

<http://www.avac.av.org/>

(Hey, that's us! So go there!)

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### **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.

### **A.V.A.C. Board Members**

**President:** Terry Pedroza (661) 718-3963 [reslatuo@verizon.net](mailto:reslatuo@verizon.net)

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#### **Webmaster of Club Site**

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**Our Sponsors**

**Al's Vacuum and Sewing:** 904 West Lancaster Blvd. (661) 948-1521. Stop by and say "hey" to Matthew and Suzanne.

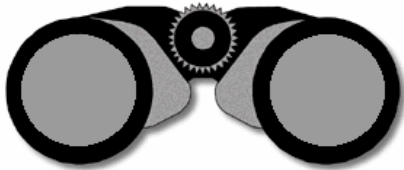
**King Photo:** 749 W. Lancaster Blvd. (661) 948-8441. As a telescope dealer, they always support the AVAC. Stop by and say "hey" to Stokely.

**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.

**Darkrooms Plus:** 20th St. W. near Pep Boys in Lancaster. (661) 945-1444. They offer all club members a 10% discount on all purchases. Stop by and say "hey" to Dean or Hank.

**V106.3 Radio:** Please welcome our newest sponsor, who assists in advertising our Club.

*Thanks for your generous support!*

***A Look Ahead...*****May Calendar**

**May 3:** Dark Sky Party, [Mt. Pinos](#)

**May 9:** Club Meeting

**May 23-25:** RTMC

**May 31:** Dark Sky Party, [Kings Canyon](#)

**June Calendar**

**June 13:** Club Meeting

**June 21:** Star Party, Prime Desert Woodlands

**June 28:** Star Party, [Red Rock Canyon](#)

**June Calendar**

**July 11:** Club Meeting

**July 26:** Annual Club Picnic, [Crystalaire Country Club](#)