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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

**December 8:** Full Moon

**December 12:** Club Christmas Party\*

**December 16:** Last Quarter Moon

**December 17:** Lancaster Museum/Art Gallery

**December 23:** New Moon

**December 30:** First Quarter Moon

**Anytime:** *Observe*

\* Our annual club party, which takes the place of a meeting at SAGE Planetarium. Information about the time and place for the party is contained within this issue.

## President's Report

*Terry Pedroza*

I hope everyone has their reservations in for the 2003 AVAC Holiday Party. This year's event will be held at the Lancaster Greenhouse Café beginning at 6:00 pm. on Friday, December 12th. We are still looking for donations toward the silent auction and raffle. If you have items which you would like to donate, please see Tom Koonce or me. I hope to see all of the AVAC members there.

In this, my last DSO article, I would like to say "THANK YOU." Thank you for the opportunity to be a part of this great club, to learn about the night sky, to meet sooooo many great people and for letting me grow as a person. I feel honored to have served you as your president.

Your 2004 Executive Board is: Terry Babineau, President; Doug Drake, Vice President; Larry Ochsner, Secretary; Tom Koonce, Treasurer; and Mike Roberson, Director of Community Development. Let's give them the same great support that you've given the previous Board. These folks are up to the task and ready to get started!

I hope that everyone had a great Thanksgiving. If I don't see you before Christmas, have the merriest Christmas ever!

### Vice President's Report

*Tom Koonce*

Hi everyone! Happy Holidays!

The AVAC is making preparations to implement some administrative changes soon that will benefit our organization for years to come. Through the efforts of our new Club Librarian, Herbert Boyd, and ably assisted by Matt Leone, all of our club assets have now been bar-coded. Combined with the bar code that you will see on the back of your new 2004 membership badge, this new system will soon make checking equipment in and out faster and easier to do. The club is looking to acquire a handheld bar code scanner, so if you know about these units and would like to help in our search for a good used one (with the necessary software), please give me a call at 943-8200 so we can talk about specifics of what the club is looking for.

"... Astronomy is the most impressive where it transcends explanation. It is not the mathematics of astronomy, but the wonder and the mystery that seize upon the imagination." - From "Curiosities of the Sky", by Garrett Serviss, published in 1909.

I'm sure you thoroughly enjoy all aspects of amateur astronomy as I do. Don't you like the way it causes you to reflect upon the immensity of the Universe? This Christmas, give yourself and your family the gift of spending an evening together enjoying the night sky and observing its wonders.

As your Vice President over the last year, it was part of my job to arrange for our guest speakers to come in to present the wide variety of talks we've had. Thank you for the opportunity to serve the Club in this capacity. I think all of us learned something at every meeting. The speakers we've had inspired our imaginations with talks that made us want to go outside right after the meeting, look up, and test out our new knowledge. Each speaker was interested in amateur astronomy too - just like you. We're very fortunate to have a club with such an active membership that can draw high Caliber speakers.

Please offer any suggestions for 2004 speakers to your new Vice President and speaker coordinator, Doug Drake. Do you have an area of interest that you might want to develop into a presentation? Please talk with Doug to see if it's appropriate for a club meeting, a school talk, or maybe even inclusion in our New Member Handbook. While not every presentation can be done at the Club meetings, he can help you determine the best venue for your hard work.

Have a happy and safe holidays, with clear, steady skies!

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

Greetings everyone! I hope you all had a very happy and safe Thanksgiving holiday. I don't know about you, but I am sure looking forward to our holiday party on December 12th at the Greenhouse Café. I simply love this time of year and this club event is my absolute favorite! The spirit of friendship, the atmosphere, the delicious food, the raffle and the silent auction is so fantastic. It's all good!

Here is a look at what is happening on our community calendar for the month of December:

The Lancaster Museum and Art Gallery will be holding a centennial celebration in honor of the Wright Brothers on Wednesday, December 17th, starting at 10:00 am. Captain Bob Redman will be giving a special demonstration at 10 am. and also at 1 pm. I will be there to offer lunar sample viewing using our club microscope. Starting at 5 pm., our club will be providing night sky viewing to the public. The club is looking for volunteers to come out with their telescopes and/or binoculars. We will be offering views of our beautiful winter sky until 8:30 pm.

We have a fantastic partnership with the City of Lancaster. Please let me know if you can come out and support our shared endeavor.

We will be holding our first committee meeting for the 4<sup>th</sup> Annual Youth Exploring Astronomy Essay Contest on Thursday, December 11th, at 6:30 pm. at my home. We will be brainstorming ideas about topic titles, grade level participation and judging standards. This meeting is open to all interested club members. Mayor Frank Roberts has eagerly accepted our invitation to join us in this creativity process. If you would like to join our team, please let me know.

I would like to welcome Michael Roberson to the 2004 Executive Board as our new Director of Community Development. He comes into this position with enthusiastic energy and many fresh ideas. I cannot wait to see the difference I know that Michael will make within the community. Congratulations, Michael!

As for me... I feel that I am the luckiest person in the world to have had the opportunity to work with such wonderful people. Many of you have blessed my life in ways that I simply cannot express. The satisfaction that comes with sharing the wonders of astronomy with both children and adults is immeasurable. The pleasure of working this position has been all mine. I give heartfelt thanks to each and every one of you for your time and commitment throughout the year. Our growth and recognition within our community for the year 2003 has been a resounding success. THANK YOU, THANK YOU, THANK YOU!

## Doug Drake's *Planet Watch*



### Sun

The Sun will enter the winter solstice, end of movement, on December 21st, which is the beginning of winter for us in the Northern Hemisphere. As of interest, I have measured the solstice by observing where the Sun sets on the horizon on the same day of each succeeding week. I found the sunset to stop moving, solstice, along the horizon, and start moving in the opposite direction in the following weeks.

### Moon

The crescent Moon will be paired with Venus on December 25th- what a Christmas delight.

### Mercury

Mercury will be at greatest elongation, 21 degrees, from the Sun on December 8th. Elongation is the distance from the Sun to the position of Mercury; this line is measured in angle of degrees. We look for the greatest elongation because this marks the time when the planet is highest in the sky when the Sun is on the horizon, sunset or sunrise. Look for Mercury below and to the right of Venus between one half hour and one hour after sunset to the southwest. Venus is the brightest in the southwestern sky after sunset.

### Venus

Venus will be at greatest elongation, 47 degrees, from the Sun on January 10th. This is the time of year in which Venus is the brightest object in the evening sky and we might say, "Star light, star bright, first star I see tonight, I wish I may, I wish I might, have the wish I wish tonight."

### Mars

Mars will become quite small in our amateur telescopes by the end of December, but you should still be able to see Mars as a gibbous, out-of-round, globe. The southern polar cap has virtually disappeared in our amateur telescopes. The southern hemisphere has just gone through summer, causing Mars' southern polar cap to be come small- not by melting water ice as on Earth, but sublimation, evaporation of frozen carbon dioxide. It is interesting to note that the southern polar cap has very little water ice underneath the frozen carbon dioxide, but the northern polar cap has quite a bit of water ice. Now isn't that interesting?

Jupiter

Jupiter can be seen below Leo, the lion, but is seen after midnight for the month of December. Wait until the beginning of next year. Springtime will give us good viewing of Jupiter.

Saturn

Saturn can be seen between Orion, the hunter, and Gemini, the twins. Saturn will be at opposition on December 31st. Opposition is when an outer planet moves to the opposite side of Earth relative to the Sun. Saturn will be the closest to us for this year and will be approximately 8 Astronomical Units (AU) from us; that is, 8 times 93 million miles, the distance between Earth and the Sun.

I hope you all have had the very best of observing throughout this year and the very best to come for next year. May your skies be clear and unlimited.



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Did you know?

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Scientists now believe that the Japanese spacecraft Nozomi, which is headed to Mars and four years late, may entirely miss the red planet and be lost in orbit around sun.

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## Stardust

by Patrick L. Barry and Dr. Tony Phillips

Philosophers have long sought to “see a world in a grain of sand,” as William Blake famously put it. Now scientists are attempting to see the solar system in a grain of dust- comet dust, that is.

If successful, NASA’s Stardust probe will be the first ever to carry matter from a comet back to Earth for examination by scientists. It would also be the first time that any material has been deliberately returned to Earth from beyond the orbit of the Moon.

And one wouldn’t merely wax poetic to say that in those tiny grains of comet dust, one could find clues to the origin of our world and perhaps to the beginning of life itself.

Comets are like frozen time capsules from the time when our solar system formed. Drifting in the cold outer solar system for billions of years, these asteroid-sized “dirty snowballs” have undergone little change relative to the more dynamic planets. Looking at comets is a bit like studying the bowl of leftover batter to understand how a wedding cake came to be.

Indeed, evidence suggests that comets may have played a role in the emergence of life on our planet. The steady bombardment of the young Earth by icy comets over millions of years could have brought the water that made our brown planet blue. And comets contain complex carbon compounds that might be the building blocks for life.

Launched in 1999, Stardust will rendezvous with comet Wild 2 (pronounced “Vilt” after its Swiss discoverer) on January 2, 2004. As it passes through the cloud of gas and dust escaping from the comet, Stardust will use a material called aerogel to capture grains from the comet as they zip by at 13,000 mph. Aerogel is a foam-like solid so tenuous that it’s hardly even there- 99 percent of its volume is just air. The ethereal lightness of aerogel minimizes damage to the grains as they’re caught.

Wild 2 orbited the sun beyond Jupiter until 1974, when it was nudged by Jupiter’s gravity into a Sun-approaching orbit- within reach of probes from Earth. Since then, the comet has passed by the Sun only five times, so its ice and dust ought to be relatively unaltered by solar radiation. Some of this pristine “stuff” will be onboard Stardust when it returns to Earth in 2006- little dusty clues to life’s big mysteries.

To learn more about Stardust, see the mission website at <http://stardust.jpl.nasa.gov>.

Kids can play a fun trivia game about comets at <http://spaceplace.nasa.gov/stardust>.

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

## How Do You Dew?

### A Dew Cap for Your Telescope

by Tom Koonce

With the change of seasons, you may notice dew forming on the front lens or corrector plate of your telescope or binoculars. Have you seen the symptoms? Dim stars become hard to see, bright stars get a halo around them, and your observations come to an end for the evening.

Dew forms when your optics cool to a temperature below the "dew point" where water will condense out of the air onto any surface colder than this temperature. What happens is that while you and your optics are typically looking at cold, black space, the surrounding air is warmed by residual heat of the land around you. Dew condenses out of the surrounding air like the moisture that condenses on the outside of a glass of ice water.

Dew doesn't damage a telescope, but it can sure ruin a night of observing. I'm sure that you know that just wiping the dew off with a soft cloth can scratch your optics, so a better solution is to understand how to prevent its formation in the first place.

A dew cap for a refractor or Schmidt-Cassegrain telescope should be at least 1.5 times longer than the diameter of the front of the telescope. A tough 5/8" piece of closed cell foam, like the kind used for sleeping bag backpacking pads, is ideal, especially the black pads. They're lightweight and durable. This material can be found at most sporting goods stores and is easy to cut cleanly with a utility knife. Take the pad and wrap it around the telescope tube, then add 1-2 inches for room for attachment and cut the pad. Use a full length strip of self-sticking Velcro to secure the dew cap together. If you use a black pad, your new dew cap will have the added benefit of effectively blocking stray light out of the optics.

If you're concerned about vignetting, make your dew cap so that it flares open approximately 3°, which will be sufficient for wide-angle eyepieces.

To store the dew cap, slide it down the telescope tube, which will make it convenient to use and protect the tube from dings.

One nice thing about a Newtonian Reflector is that the entire tube acts as a dew cap. The only way to get rid of dew in this case is to use a small hair dryer to get it off of the main mirror. When not looking at something, point the scope downwards to the horizon so that you're not pointing the optics at cold space.

Dew can also form on eyepieces, but the heat from your face helps to keep it at bay, and at the same time moisture from your breath and eye is making the situation worse! Warming an eyepiece in a pocket for a few moments is usually enough to remove dew and keep it at bay for a while.

By the way, a dew cap is usually the first accessory that an owner of a Schmidt-Cassegrain telescope purchases. But now you can save yourself a lot of money and make one yourself.

Clear Skies!

**Astronomy Links on the Web**

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

(Steve Trotta's website- note the new address)

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

(Tom Varden's website)

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

(Tom Koonce's website)

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

(Getting started in Astronomy...)

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

(The Astronomical League's homepage)

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

(time to go shopping)

[www.exploratorium.edu/auroras/index.html](http://www.exploratorium.edu/auroras/index.html)

(how far south is the aurora extending?)

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

(Hey, that's us! So hop to it!)

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**President:** Terry Pedroza (661) 718-3963 [res1atuo@verizon.net](mailto:res1atuo@verizon.net)

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Don't forget- there will not be a December club meeting. See you at the Christmas party!

### **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 Matthew and Suzanne.

**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 Cathy or Hank.

**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](http://www.telescopes.net)

***Thanks for your generous support!***