
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
The A.V.A.C. is a Sustaining Member of The Astronomical League*



Up-Coming Events

November 2: Dark Star Party, [Saddleback Butte](#)

November 4: New Moon

November 8: **Monthly Club Meeting***

November 11: First Quarter Moon

November 16: Meteor Party, [Poppy Reserve](#) Leonid Meteor Shower

November 19: Full Moon

November 27: Last Quarter Moon

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 20th 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

I would like to congratulate and welcome Tom Koonce, Luann Shoomliansky, Mike Presswood and Debora Pedroza to the 2003 Executive Board of the Antelope Valley Astronomy Club. I'm sure they will all do an excellent job for our club.

We are hoping to have in place by the November meeting a youth committee that will advise the Executive Board on the pulse of what our youth would like to see in the astronomy club. This committee will have one member who will act as the liaison to the Executive Board. I would like to thank Tom Shafer for this great idea! Any youth interested please contact me at 718-3963 as soon as possible.

The annual AVAC Holiday Party is coming up December 14, 2002, at the Lancaster Greenhouse Café from 6:00pm till 9:00pm. Please mark your calendars. This was a lot of fun last year and promises to be again. Hope to see you there.

Dir. of Community Development*Debora Pedroza*

Autumn is here and we are halfway through the incredibly busy month of October. The Fall Festival was a huge success in many ways. We introduced our club to a large number of excited people who had no idea our club even existed. We did outstanding on our raffle (\$493.00) and made more than a dozen contacts to assist us in our upcoming third annual Youth Exploring Astronomy Essay Contest.

A huge THANK YOU to all the club members who put in their time, ideas, donated equipment...and for some- stamina. A little dust and clouds did not stop us.

Coming up next on our calendar of events is helping S.A.G.E. Planetarium launch their new educational program involving the use of the telescope in Australia. Friday, October 25, is the S.A.G.E. Planetarium [Open House](#) at 6:30pm. Their V.I.P. night is Wednesday, November 6, at 7pm. For both of these events, the club needs volunteers to bring out 'scopes and set up a star party at the planetarium.

Saturday, October 26, is our "Ghoulish Galaxies Halloween Star Party" at the Prime Desert Woodlands at 6:30pm. This event has been widely publicized by the City of Lancaster so come in costume, bring your 'scope or just yourself and let's have a ghoulish party! Earlier I mentioned our upcoming essay contest. In early November, I would like to set up a committee to help me begin the roll-out of this contest. This is a very rewarding project and no task is too small. In regards to all of the events mentioned above, please e-mail me if you can help the club in any way. I must say... you continue to astound me with your commitment.

Congratulations to the new board members of 2003! Until next time...take good care.

Doug Drake's *Planet Watch*

Venus has disappeared as our evening star and now becomes our morning star. I guess that's why Venus is said to be feminine because she can't make up her mind if she wants to be a morning or evening star. Oh well (it's a joke, ladies; please don't hurt me). She will rise higher and higher each morning as you view sunrise this month. Saturn is still an after-midnight object in the southeast. Saturn's shadow, on the backside of the ring, is slowly disappearing as Saturn goes into opposition. Uranus can still be seen in the Capricorn constellation; I'll bring info to the next star party so that you can find it. By the way, I'll have your Mars Exploration Certificates ready for you at our November meeting.

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Our speaker at the November club meeting will be Don Weiss. He will talk about how satellites navigate by using the stars.

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Doug Drake lets a young man view the sun at Super Science Saturday at Joe Walker Middle School.



At the Palmdale Fall Festival, a youngster ponders the image of the sun on the "SunSpotter"



Club President Terry Pedroza looks on as the kids line up to view the Sun at the Palmdale Fall Festival.



Club Vice President Matt Leone enjoys his ice cream cone almost as much as the Festival-goers enjoy seeing the sunspots.

How Far Away is the Sun?

Tom Koonce

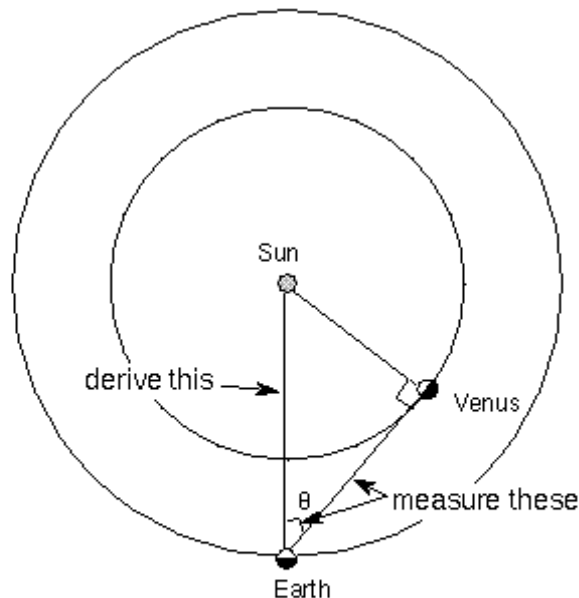
My last talk to the AVAC was about how astronomers determined the size and shape of our galaxy and how they measure distances to other stars using the “parallax method” (and eventually other methods using the star’s light spectrum).

Unfortunately, these methods do little to help us find out the exact distance to our very own star, the Sun. Surprisingly, to get the distance to the sun, astronomers first had to determine the exact distance to Venus!

With the invention of radar, scientists were able to measure the distance to Venus very precisely. By timing how long it took the radar beam to travel at the speed of light to Venus and back, the total distance to the object can be determined from the equation:

$$\text{Distance} = (\text{Speed of Light}) \times (\text{Total Time})/2$$

The reason the total time is divided by two is to get just the distance from the Earth to the object.



Measuring the angle θ between Venus and the Sun and the distance between Earth and Venus enables us to find the distance between the Earth and the Sun using trigonometry.

$$\text{Earth-Sun Distance} = (\cos \theta \times \text{Earth-Venus Distance})$$

Using trigonometry, astronomers now know that the “Astronomical Unit” = 92,955,820.5 miles (149,597,892 kilometers). This incredible degree of accuracy is possible because the speed of light is known very precisely and extremely accurate clocks are used to time the radar reflection. Radar can’t be used to determine the distance to the Sun directly because the Sun doesn’t have a solid surface to reflect the radar efficiently.

Ref: Strobel’s Astronomy Notes, May 2001.



From Brobdingnag to Lilliput: My Travels Through 30 Years of the Space Program

By Diane K. Fisher

In the early 70s, as a minor character in the Apollo Program, I worked in the Vehicle Assembly Building at KSC. Stepping into the VAB, I felt like the incredible shrinking woman. The space inside accommodated six 45-story office towers with vast open spaces to spare. In the vertical spaces between the office towers, the 363-foot high Saturn V's were assembled.

From my third floor office in one tower, I often delivered documents to higher floors in other towers. Between riding the stomach-dropping glass elevators and dashing across to other towers on narrow, open catwalks at the 28th or 44th floor levels, I soon over-came my fear of heights.

On these excursions, I would see the Saturn V's come together in the 500-foot high bays. After hundreds of engineers and technicians had toiled around the clock for months, the morning of high-bay rollout would arrive. Slowly, the Crawler Transporter would bear forth the Mobile Launch Platform and the majestic Saturn V rocket. The morning sun reflecting off its gleaming white form would take my breath away.

The last Apollo mission was 30 years ago. As the Apollo program ended, some thought human missions to the Moon, Mars, and beyond would continue apace. Though they didn't continue, the Apollo program remains a single, large step in our technological evolution as a species. It is a great tribute to the intelligence, ingenuity, and dedication of the people responsible for the Apollo missions that they were so successful and the disasters so few. NASA's program today continues to build on the technological and managerial legacy bequeathed us by Apollo.

And just where are we now? Among its other tasks, the International Space Station is teaching people to live in space for long periods. Robotic space missions are studying issues like land use and global warming and discovering the wonders of the universe, its history, and our place in it. With humanity's many other pressing needs, such quests must be done efficiently.

Part of NASA's mission is to develop the technologies to do cost-effectively what has never been done before at all. NASA's New Millennium Program develops and validates new technologies for space. Missions such as Deep Space 1 and Earth Observing 1 carry and test multiple new technologies (such as ion propulsion and advanced imaging instruments) previously untried in space. And, unlike the Saturn V, the ultimate gas-guzzling muscle car of the 70s, the new technologies must be the "zero emission" vehicles of the 21st century- small, efficient, and capable beyond anything done before.

Many of the New Millennium technologies are described for adults at nmp.nasa.gov and for children at The Space Place, spaceplace.nasa.gov.

Diane K. Fisher is the developer and writer for The Space Place web site. This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.



The Saturn V and Mobile Launch Platform are carried to the launch pad on the Crawler Transporter. Notice the tiny humans below the platform.

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If you want to sell astronomical equipment through the DSO, please contact Brian Peterson with a description of the items.

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Did you know? ?

Jupiter's moon Gannymede and Saturn's moon Titan are both larger than the planet Mercury.

? ? ?

* * For Sale * *

Starry Night Backyard program
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asking \$40.00 o.b.o.
Call Al Shoomliansky at 945-8900

* * * * *

Got something you want to see in the *Desert Sky Observer*? Whether it's a website, a type of story, or astronomy jokes, send an e-mail to Brian Peterson at cybrpete@sbcglobal.net and he'll be happy to consider your request.

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.avac.av.org/>

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

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

President: Terry Pedroza (661) 718-3963 reslatuo@verizon.net
Vice-President: Matt Leone (661) 948-1521 als@antelecom.net
Secretary: Brian Peterson (661) 273-1693 cybrpete@sbcglobal.net
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Astronomical League & Club Historian

Tom Koonce (661) 943-8200 takoonce@aol.com

Webmaster of Club Site

Steve Trotta (661) 269-5428 sstrott@prodigy.net

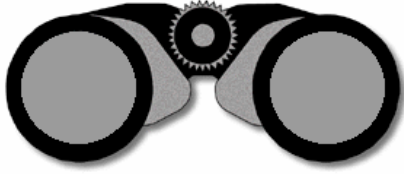
Our Sponsors

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 or Paul.

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.

Thanks for your generous support!

A Look Ahead...**December Calendar**

December 14: Annual Christmas Party, Greenhouse Café in Lancaster

January '03 Calendar

January 4: Dark Star Party, Saddleback Butte

January 10: Club Meeting at S.A.G.E. Planetarium