



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

November 14: Club Meeting @ the Sage

November 17: Executive Board Meeting @ [the Pedroza's](#) (6:30)

November 29: Dark Sky Star Party @ [Saddleback Butte](#)

* 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**

I want to thank all of the Antelope Valley Astronomy club members for their faith and support, as I have been president. Without all of you this club would not be what it is today. This is a members club and I have had the distinct honor of being at the helm. Thank you all.

Now... I would like to congratulate the incoming Board for 2009; As President, Don Bryden; Vice President, Rose Moore; Secretary, Deb Basham; Treasurer, Tom Koonce and as Director of Community Development, Karole Barker. Congrats all, you will all have a blast as AVAC Board members!

Our annual Christmas party is coming up and we need your RSVP's and moneys ASAP. We need to have a very accurate count to the AV Inn by the 20th of November, so please get those in. We are also looking for raffle and opportunity drawing donations; they need NOT be astronomy related. The cost is \$25.00 per person. We will be in the Spring room at the Antelope Valley Inn on December 13 from 6:00 pm until 11:00 pm. Dress will be business/casual. You know how much fun we had last year, well this year is going to be even better!

Have a happy holiday season and I'll see you at the meeting,
Terry

Vice President
Debora Pedroza

Our club and its members will be hosting a very special evening on Friday, November 14 at 7pm for the public and all students, community wide. We will be holding an "Astronomy Faire" along with the official kick-off for the 9th Annual Youth Exploring Astronomy Essay Contest. We are also hoping to unveil the newly renovated planetarium to all who are eager to see it.

Please note: there will not be a **business** meeting conducted. We will be offering stations as outlined below. We, as a club, are hoping to get the word out to more community members about our organization and let them know about all the fun and diverse things we have to offer. During our recent run at the Palmdale Fall Festival, we discovered that there are still a lot of folks who didn't even know there was an astronomy club in the Antelope Valley. Amazing!

Be sure to come and lend your enthusiasm for this special event.

November 14, 2009 AVAC Meeting Program

Telescopes	Bill Riedhart
Library	Karole Barker
Mirror Making	Matt Leone
Meteorites, Roswell	Jeff Reichman
Astro Imaging	Terry Pedroza
Observing Programs	Tom Koonce
Essay Contest Kickoff	Debora Pedroza
Night Sky Network (Astro Dudes)	Dick Hague
Club Trailer	Darrell Bennett

I will be accepting donations for the Holiday Party Raffle and Silent Auction from now until Dec. 5th. Anything goes! Be sure to reserve your seat for this fun and festive event. Take good care.

Director of Community Development
Karole Barker

We had a great turn out for the Prime Desert Woodlands on Saturday September 27th; we had 125 people including club members. We just had our Prime Desert Woodland event this month, on Saturday, October 25th. I will have more details next month on the turn out we had for the event. We do have an upcoming event at Prime Desert Woodlands on Saturday November 22nd, at 6:00 p.m., and we still need volunteers to bring out scopes that night. Please let me know if you can make it.

We had an awesome turn out for the "Palmdale Festival" this year. I would like to thank all of the club members who were able to volunteer at the event.

We have our Annual Christmas Party coming up on Saturday, December 13th. If you have any items for the silent auction or raffle, please feel free to contact me or Debora Pedroza. If you have any question, please give me a call at 661-940-3312 or e-mail me directly.

Clear skies,
 Karole

Ask Astro-Tom:

Q: *“I’m 49 and I have less than \$200 to spend on amateur astronomy and I’d like to get the best possible observing experience for my kids and me. Ideally I’d like whatever I get to be portable so I can take it up in the mountains to look at the stars when we go camping. Also, it gets really cold in the winter here. What do you suggest?”*

A: Thanks for the information about your weather. Any information about where, when and how you plan on using astronomy equipment will help focusing in on the right advice for you as an individual. With cold winter weather, you're going to want something EASY to bring in and out of the house if the weather gets like the Arctic! This implies either a Dobsonian telescope of 6 inches to 10 inches in aperture, binoculars on a tripod, a 60-80mm short tube refractor telescope that you can leave set up on its mount and just carry out, or for about \$150-\$200 it might be possible to get a used, small Schmidt-Cassegrain electronic telescope like an ETX-90EC. All of these are stable instruments and will produce good views of the night sky but with varying amounts of resolution and light gathering ability. You'll have to hunt for deals, but I have, at one time or another, owned each one of these scopes and paid less than \$175 for each!

Being 49, you can actually get away with 10 X 50 binoculars (5mm exit pupil) and not lose any light at all. There are many options in this range of binoculars. Check Meade, Celestron, Vixen, Nikon, Canon, and others. Younger observers have pupils that open up further and may want the light gathering ability and 6.5 mm exit pupil of a pair of 12 X 80 binoculars. Binoculars have a fixed amount of magnification. The first number of "10 X 50" means that they magnify ten times. The second number means that the big lens on the front is 50mm across. Heavy binoculars are hard for kids to hold steady for any length of time and you may need a tripod.

A telescope can vary its magnification by utilizing different eyepieces. If a telescope has a focal length of 1000 mm, a 25 mm eyepiece (standard) will produce a magnification of 1000 divided by 25 = 40 times (40X). Most planetary observation is done at about 90X, and galaxies/nebulae/star cluster are best seen at 40-50X. Telescopes produce spectacular narrower-field, higher magnification views than binoculars and you can use them for astrophotography, but they aren't as portable as binoculars. Personally, I own and regularly use both because they are complimentary. I got my binoculars first and learned my way around the constellations and then tackled stellar details with a telescope, but you can learn the sky either way.

A Dobsonian telescope is really easy to set up and to use. You just point it like you would a cannon, moving it with your hands and look through the eyepiece. Very simple and straightforward to leave set up and to carry outside if your back is OK. Most importantly, "Dob" telescopes will give you the biggest mirror aperture for the dollar and you'll be able to see the most detail on the Moon, rings of Saturn, galaxies, nebulae and star clusters. Remember: *"Aperture Rules The Night"* ...The more light collected and fed into your eye, the more you will be able to see. A 10" mirror collecting light is better than an 8" which is better than a 6" mirror. Good used brands include Meade, Celestron, Orion, Discovery, and others. You can even make your own. Local astronomy clubs may sell very good Dobs with a finder scope occasionally at the Annual Picnic if you're still looking at that time.

You said that you want to take the scope head up in the mountains. For maximum portability, I'd recommend seeing if you can find a used Meade ETX-80 Backpack Observatory (\$299 retail). This is an 80mm "Goto" refractor that comes with a 9mm and 26 mm eyepiece set, a tripod and a backpack which allows you to scroll through an electronic menu of objects, push a button and the telescope moves itself to "Go To" the object automatically. Another option is a Meade ETX-90EC, which is a 90mm Schmidt-Cassegrain telescope that has more aperture and much longer focal length for more power to see details. I have several telescopes, but one that I end up using frequently is the ETX-125EC which is similar to the ETX-90EC, but with a larger aperture, that I find is very portable and fun to look through.

When there are big events like RTMC, PATS and other gatherings of amateur astronomers you should go to them and ask around for a good deal. I'd suggest that you pass out a flyer to people saying that you're new in astronomy interested in buying one of these scopes (above) for \$150 and list your phone number. Often times with the info that you are brand new in the hobby and have a great interest in astronomy, one of the old time amateur astronomers may have just what you're looking for sitting in a corner and might be willing to sell it to you at your price.... you never know. I've gotten a couple of my best scopes just by putting out the word that I was interested in a certain type of scope and have gotten calls.

Clear Skies!
Astro-Tom.com



The Chemical Weather Report

“Sunny tomorrow with highs in the mid-70s. There’s going to be some carbon monoxide blowing in from forest fires, and all that sunshine is predicted to bring a surge in ground-level ozone by afternoon. Old and young people and anyone with lung conditions are advised to stay indoors between 3 and 5 p.m.”

Whoever heard of a weather report like that?

Get used to it. Weather reports of the future are going to tell you a lot more about the atmosphere than just how warm and rainy it is. In the same way that satellite observations of Earth revolutionized basic weather forecasting in the 1970s and 80s, satellite tracking of air pollution is about to revolutionize the forecasting of air quality. Such forecasts could help people plan around high levels of ground-level ozone—a dangerous lung irritant—just as they now plan around bad storms.

“The phrase that people have used is chemical weather forecasting,” says Kevin Bowman of NASA’s Jet Propulsion Laboratory. Bowman is a senior member of the technical staff for the Tropospheric Emission Spectrometer, one of four scientific sensors on NASA’s Aura satellite.

Aura and other NASA satellites track pollution in the same way that astronomers know the chemical composition of stars and distant planetary atmospheres: using spectrometry. By breaking the light from a planet or star into its spectrum of colors, scientists can read off the atmosphere’s gases by looking at the “fingerprint” of wavelengths absorbed or emitted by those chemicals. From Earth orbit, pollution-watching satellites use this trick to measure trace gases such as carbon monoxide, nitrogen oxide, and ozone.

However, as Bowman explains, “Polar sun-synchronous satellites such as Aura are limited at best to two overpasses per day.” A recent report by the National Research Council recommends putting a pollution-watching satellite into geosynchronous orbit—a special very high-altitude orbit above the equator in which satellites make only one orbit per day, thus seeming to hover over the same spot on the equator below. There, this new satellite, called GEOCAPE (Geostationary Coastal and Air Pollution Events), would give scientists a continuous eye in the sky, allowing them to predict daily pollution levels just as meteorologists predict storms.

“NASA is beginning to investigate what it would take to build an instrument like this,” Bowman says. Such a chemical weather satellite could be in orbit as soon as 2013, according to the NRC report. Weather forecasts might never be the same.

Learn more about the Tropospheric Emission Spectrometer at tes.jpl.nasa.gov.

Kids can learn some elementary smog chemistry while making “Gummy Greenhouse Gases” out of gumdrops at spaceplace.nasa.gov/en/kids/tes/gumdrops.

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

Photos



Mt. Pinos





Palmdale
Fall Festival



News and Headlines

Our Vanishing Night

If humans were truly at home under the light of the moon and stars, we would go in darkness happily, the midnight world as visible to us as it is to the vast number of nocturnal species on this planet. Instead, we are diurnal creatures, with eyes adapted to living in the sun's light.

<http://ngm.nationalgeographic.com/2008/11/light-pollution/klinkenborg-text>

Possible Host to Resident Solar System

Dana Backman, of the SETI Institute in Mountain View, California is the lead author of a report to be published next year in The Astrophysical Journal on the possible discovery of the presence of three planets circulating Epsilon Eridani, one of the nine closest stars to our planet.

<http://www.astronomytoday.com/blog/epsilon-eridani-host-resident-solar-system/>

Astrophysicist Stephen Hawking Retires From Post

Cosmologist Stephen Hawking will retire from his prestigious post at Cambridge University next year, but intends to continue his exploration of time and space. Hawking, 66, is Lucasian Professor of Mathematics, a title once held by the great 18th century physicist Isaac Newton.

<http://dsc.discovery.com/news/2008/10/24/hawking-retires.html>

Stowaways Revealed on New Horizons Spacecraft

The New Horizons spacecraft has now spent over 1,000 days wending its way to Pluto and the Kuiper Belt. To celebrate the milestone, the New Horizons team decided to reveal the secret stowaways on board the spacecraft. Nine objects (can you guess why there are nine?!) were attached and sent along on the ten-year journey to the outer reaches of our solar system.

<http://www.universetoday.com/2008/10/27/stowaways-revealed-on-new-horizons-spacecraft/#more-20155>

Where Have All the Gamma Ray Bursts Gone?

As if gamma-ray bursts (GRBs) weren't mysterious enough, there's something else to add to the bag of confusion. GRB events are missing from the furthest reaches of the Universe. Right around the time when there should be a lot of GRBs, during the "star forming epoch" (when stars were just beginning to evolve after the Big Bang), there appears to be none. Zero.

<http://www.universetoday.com/2008/10/23/where-have-all-the-gamma-ray-bursts-gone/>

Satellite directly sees 'Sun-quakes'

Listening to the Sun through a technique similar to seismology opened a new era for understanding the Sun's interior. The French Space Agency's (CNES) and the European Space Agency's (ESA) CONvection ROTation and planetary Transits (COROT) satellite applied this technique to three stars, directly probing the interiors of stars other than the Sun for the first time.

<http://www.astronomy.com/asy/default.aspx?c=a&id=7550>

A Light Take On The Gravity-Time Relationship

Let's talk about tiptoeing right next to a black hole. Not that you could do that, because the nearest one we know of, near the center of our galaxy, is impossible to get to. Even if you could travel at the speed of light, you wouldn't be able to reach it in your lifetime.

<http://www.npr.org/templates/story/story.php?storyId=96095009&ft=1&f=1026>

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.

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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.astro-tom.com>

High Desert Broadcasting: General Manager, Vicky Connors (661) 947-3107; they assist us in advertising our Club.

ActonAstro: Club Web space provided by <http://www.actonastro.com>

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