



Desert Sky Observer

Volume 25 Issue 3

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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, 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
Darksky Association.*



Up-Coming Events

March 3: Last Quarter Moon

March 10: New Moon

March 10: Cole Middle School Star Party, 6-8pm.

March 11: **Monthly Club Meeting***

March 12: Messier Marathon, [Saddleback Butte](#)

March 14: Littlerock School Assembly, 1-2:30pm

March 17: First Quarter Moon

March 25: Full 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*

Hello club members! I hope you are faring well during this record-breaking winter season. As much as we need all this rain, it is definitely time to open the curtain of clouds and let our stars and night objects take the stage and perform their magic. The winter sky can be so breathtaking.

As we enter March, I would like to remind everyone that membership dues need to be paid for the 2005 calendar year. Many of you may have overlooked your renewals due to the holidays and weather. You can handle your dues at the club meeting on Friday, March 11th, or mail a check to the club P.O. Box. Member participation is a must for the success of our club.

The Antelope Valley Astronomy Club, thanks to you, our members, continues to make great strides within the community. Our feet are firmly being planted with a reputation that marks itself with both enthusiasm and professionalism. We love astronomy and people around us know it. Our club website is state of the art and our Club newsletter is an award winner. Our Youth Exploring Astronomy Essay Contest is in its fifth year and running strong. Our star parties are infectious fun. As a club we DO make things happen. Having said all this- and rightfully so- all members are encouraged to step up to the plate and take on something new within the club. Join an observing group, volunteer to read essays, volunteer for one or two hours at a school, help welcome new members, attend one or two board meetings or be a raffle host at the Poppy Festival. Whatever! Every one of us is unique and special. Together we will continue to share and have fun, create new memories and witness new milestones.

All ideas and suggestions are welcome. This is **our club**. Thank you.
Here's to clear skies soon. Take good care.



*Vice
President
Mindy
Peterson*

As we move into March, hopefully we will encounter clear skies for our annual Messier Marathon taking place on March 12th at Saddleback Butte State Park. It is a fun-filled time for all of those competitive Messier seekers in the Club. Our speaker for the March 11th meeting will be Bob Redman, a.k.a. "Captain Bob." Bob is an aerospace education specialist who brings the high-tech world of space exploration up close and personal for school-aged children as well as adults. Bob's interest in aerospace was sparked by his father's 30-year career at NASA Dryden. It was a time of historic breakthroughs in modern aviation. Later, while working as a tour guide at the Smithsonian Institution in Washington, D.C., Bob began to see the educational possibilities of teaching young people about the history of aerospace. He later became a contributing writer and photographer for *Countdown Magazine*, a national aerospace publication dedicated to the activities of the Space Shuttle. This is a great opportunity to bring your children as Captain Bob will entertain even the young ones in our Club. He will be speaking on robotics, general astronomy, and space exploration.

On February 25th, Debora Pedroza and I were privileged to attend the Antelope Valley Board of Trade Outlook Conference. For those of you who didn't know, the keynote speakers were Burt Rutan, Michael Melvill and Brian Binnie, famous for SpaceShipOne. It was a fantastic opportunity to hear first hand about the adventures of SpaceShipOne. This was the first time that the three have been on stage together since they won the X-Prize. Burt spoke about space travel for you and me. He envisions that it will be the "little guy" who pioneers space travel for civilians, not big government. Burt also announced that SpaceShipOne will hang between the Wright Brothers' plane and the *Spirit of St. Louis* at the Smithsonian in Washington, D.C. Isn't it wonderful that the Antelope Valley has such talented folks?! Michael Melvill and Brian Binnie were the first two people to receive their astronaut wings as civilian pilots. They talked about how the test flights progressed and how it felt the first time each one hit the rocket switch. They also provided great videos of the flights. It is an experience that I will certainly not forget.

In the coming months, I am planning a few surprises for our monthly meeting speakers. Stay tuned!



*Director of
Community
Development
Terry Pedroza*

Okay, I'm not sure who it is, but whoever has been doing the rain dance please cease and desist. It seems that all it has been doing for the last three months is raining. With the Messier Marathon coming up we need some time to practice and maybe even do a Marathon... Messier that is. And the County needs some time to get the roads back together.

Our calendar is rapidly filling up and I have had to turn people down for events. So far this month we are doing events at Cole Middle School on March 10th and the Littlerock School Assembly on March 14th. We still could use some help with these events if you can spare the time. The Cole Middle School event is in the evening and they would like to have us give a talk, if possible. I will not be available that night, so we are looking for someone to give that talk. Any takers? The assembly at Littlerock school also involves a talk and daytime star party. We will need someone to do that talk and folks to help with the star party. The Littlerock School Assembly is from 1:00pm until 2:30pm. These are great events for the kids involved and I hope you will take the time to be a part of one of them.

Don't forget to mark your calendar for these and other events coming up. One major upcoming event is RTMC in May. Start saving your money now.

The AVAC would like to welcome this year's newest Club sponsor:



Rich Harper's Planet WatchMercury

If you've never seen Mercury, this month is a good month to give it a try, with the best chance being during the early evening between the 5th and 15th. On March 1st, Mercury sets at 6:51pm. and lies 13 degrees east of the sun. On the Tenth, Mercury increases its separation from the sun to 18 degrees, setting at 7:23pm. By the Twentieth, Mercury is again moving closer to the sun, setting at 7:10pm and lying 14 degrees from the sun. By the Thirtieth, Mercury will be hidden by the sun's glare again. Use a red or orange filter to reduce the effects of atmospheric turbulence. Mercury will vary in angular size between 5.6 and 9.4 seconds of arc, changing phase between nearly full, to a thin crescent, and back. A day-old moon will pass about seven degrees north of Mercury on the 11th.

Venus

Venus is not well positioned for viewing this month. On the 1st, Venus lies just 7 degrees west of the sun, rising at 6:07am. It continues to narrow the gap with the sun all month long.

Mars

At mid-month, Mars lies in Sagittarius, near the Sagittarius/Capricorn border. Mars is currently about 90% illuminated, and subtends a mere 5.4 arcseconds. We do, however, have a favorable opposition this November for our favorite planet. On March 19th, Mars will lie about 1/2 degree north of M75 in Sagittarius, and the pair should provide a pleasing view or astrophotography target (hint, hint).

Jupiter

In mid-March, Jupiter will rise around 7:30pm. and will be favorably positioned for viewing a couple of hours later. Jupiter is very bright, shining at magnitude -2.4, as well as large, at 43.6". Just before dawn on the 26th, Jupiter and the full moon, lying two degrees apart, can be seen just before they set together in the west.

Saturn

Saturn lies in Gemini, rising about 12:40pm. Saturn will be well positioned for viewing all night. The moon will pass about 6 degrees north of Saturn on the 19th.

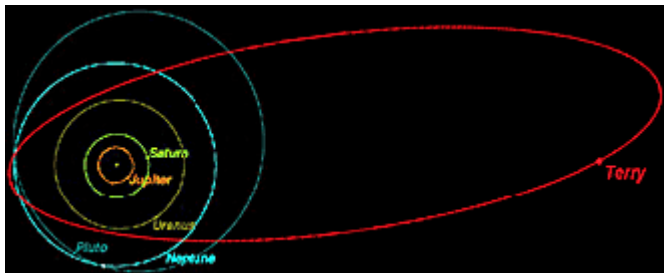
Uranus

Uranus will be visible in the pre-dawn sky in Aquarius. At magnitude 5.9, you might be able to find it naked-eye if the transparency is good and you are at a dark-sky site. Uranus shows a disk a mere 3.4 arcseconds across.

Neptune

Hovering around magnitude 8, Neptune will require binoculars or a telescope to view. Currently in Capricorn, Neptune can be located about 2/3rds of the way along a line drawn from M30 to M73 in the pre-dawn sky.

The Eccentric Orbit



of Terry Babineaux

I like to believe that other forms of life exist in the universe. Should they ever come to visit, I wouldn't refer to them as "extraterrestrials," nor would I ask to look under the hood of their "flying saucers." Though these terms are popular amongst the government conspiracy crowd, the visitors would most likely find the ethnocentricity of these remarks offensive.

Were he alive today, William of Occam would need a pair of very busy scissorhands to snip through the baloney spread by the conspiracy theorists. One of my favorites concerns gigantic carvings found in South America. Since the full extent of these artworks can only be seen from high above, the conspiracy theorists would argue that these structures must therefore be landing fields or navigation aids prepared by aliens for use by their spacecraft. However, just about every schoolchild is familiar with the system of laying out grids to enlarge an image. Occam's razor would suggest that the same was done here, probably to appease skeptical gods glaring down from above.

This isn't to say that things don't take on a different perspective when seen from a distance. I've often wondered what the universe would look like were it possible to step outside of it and examine its features from a great distance. Of course, I am not the first to ponder this: I recall many science fiction stories in which the protagonist expands or shrinks, watching stars, planets and galaxies turn into molecules of a larger structure or finding atoms to be planetary systems in a much smaller universe.

I've always found that from the vantage point of Earth, many distant objects in our galaxy take on a strange organic quality. For example, a photograph of the Triffid Nebula taken by the Hubble Space Telescope looks to me like a gigantic horned minotaur marauding through space (<http://hubblesite.org/newscenter/newsdesk/archive/releases/1999/42/>). Two years ago, the variable star V838 Monocerotis brightened to near-nova levels. A series of photos taken over the next several months by the Hubble revealed the light wave (called a "light echo") from the star illuminating and bouncing off widening portions of the surrounding dust clouds (<http://heritage.stsci.edu/2005/02/big.html>). So far away and so large are these clouds that we can literally watch light traveling through them. But at least as fascinating is the oddly organic nature of the structures revealed by the light echo. In these photos, the overall effect resembles the carcass of a decaying beast. When stars run out of energy and begin casting off clouds of gas and debris, they are said to be "dying." In the case of V838 Monocerotis, the carcass image is disturbingly apropos.

When viewed from a different bent, there may indeed be a very tiny grain of truth to theories offered by the UFO/extraterrestrial crowd. From a great distance, objects do take on a different demeanor and may ultimately reveal bits of a greater scheme we can't even begin to imagine the extent of. Perhaps the universe is itself another form of life.



A Different Angle on Climate Change

by Patrick L. Barry

Look toward the horizon in almost any major city, and you'll clearly see the gray-brown layer of smog and air pollution. Yet when you look straight up, the sky can appear perfectly blue; you might think there's no smog at all.

The smog is overhead as well, but it's much harder to see. Why is there such a difference?

It comes down to viewing angles: A vertical line straight up through the atmosphere crosses much less air than a line angled toward the horizon. Less air means less smog, so the sky overhead looks blue. On the other hand, when you look toward the horizon, you're looking through a lot more air. The smog is easier to see.

A one-of-a-kind sensor aboard NASA's Terra satellite capitalizes on this angle effect to get a better view of how clouds and air pollutants scatter and absorb sunlight. By doing so, this sensor- called the Multi-angle Imaging SpectroRadiometer (MISR for short)- is helping scientists fill in a major piece of the climate change puzzle.

Most satellite instruments look only straight down at the Earth. Layers of airborne particles (called aerosols) and smog are harder to see with this vertical view, and clouds often appear only as two-dimensional sheets of white. Clouds and aerosols both can reflect incoming sunlight back out to space, thus cooling the planet. But they can also absorb sunlight and trap heat rising from below, thus helping warm the planet.

What is the net effect? MISR helps scientists figure this out by looking at the atmosphere at several angles- nine to be exact. Its nine cameras fan out across a range of angles from steeply looking forward (70.5 degrees from vertical), to straight down, to the same steep angle backwards. As the Terra satellite passes over a region, the cameras successively view the region at nine different angles.

From these data, scientists can construct a three-dimensional picture of the cloud cover, revealing much more about cloud dynamics than a flat image alone. They can also see light bouncing off aerosol pollution from nine different directions, thus getting a fuller picture of how aerosols scatter sunlight. And they can even spot thin layers of heat-trapping air pollutants that might go unnoticed by other satellites.

All this information comes just from looking at the atmosphere from a different angle.

Find out more about the Stardust mission at <http://stardust.jpl.nasa.gov>. Kids can read about comets, play the "Tails of Wonder" game about comets, and hear a rhyming story about aerogel at <http://spaceplace.nasa.gov/en/kids/stardust/>.

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

Speaker Donation Policy



The AVAC wishes to continue to bring in quality speakers to Club meetings. In order to show our appreciation to such speakers, we collect voluntary donations from members in attendance. However, it is awkward- particularly for the speakers- for us to ask for donations in their presence. Therefore, in the future we will keep an envelope at the front desk in the Planetarium lobby, which is manned by the Club Treasurer. We ask that you personally give your donations to the Club Treasurer because we need to know the source of the donations for our records. You may still ask that your donation be treated as anonymous, if you wish. If you would like to receive a receipt, please let Treasurer David Abrass or any other Club Officer know. Be aware that your contribution is expressly for the speakers at the Club Meetings and will not be collected on behalf of the school district.

Please consider making a small donation for each speaker. Even merely paying for the speaker's gasoline or a meal is a gesture which will help ensure that guest speakers understand that they are appreciated.

Did you know? ? ?

Wind speeds of 270 mph have been measured on Saturn's moon Titan.

? ? ?

Help Needed from Club Members

If you would like to help judge the Youth Exploring Astronomy Essay Contest submissions, please contact Brian Peterson (contact info found later in this newsletter). He will be needing several Club members to help narrow down the potential winners before having local "celebrity" judges make the final choices.

Submit your "Astrophoto of the Month" to the following address by the 20th of each month:
newsletter@avastronomyclub.org



Astro-tom.com is dedicated to amateur astronomy



Simple Astrophotography (well, sort of)

by Rich Harper

Having taken star-trail photos and having mounted my camera on my EQ mount to take long time-exposures of Milky Way star fields, I decided to try my hand at prime-focus astrophotography. I didn't want to have to buy any additional equipment (i.e., a CCD camera costing more than a down payment on a house), and I was willing to keep exposures short to simplify tracking.

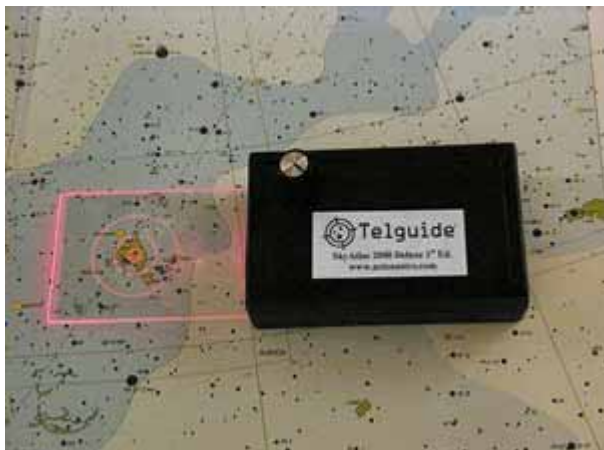
Short exposures require three things: fast film, fast optics, and good, transparent skies. Not just any fast film will do, however. It must have good reciprocity characteristics, and reasonable grain. Fast optics were a bit of a problem. Fast telephoto lenses are very expensive. So I decided to use my f/6.8 Ranger as my lens. An Orion ShortTube 80 would work as well, I'd think, though it would be faster, at f/5. Good, transparent skies are relatively easy to find here in the desert.

After digging around on the Internet, I chose to use Ilford HP5 Plus black and white film. It has a speed of 400, acceptable grain, and good reciprocity characteristics. An easy way to define reciprocity is this: films tend to slow down with long exposures. Films with good reciprocity characteristics slow down less, films with bad reciprocity characteristics slow down more. Keeping that in mind, 1000 speed film isn't necessarily better than 400 speed film in this case because many 1000 speed films have lousy reciprocity. Over a five or ten minute exposure, they will effectively be slower than 400 speed HP5 Plus. Reportedly, another good film is Kodak Elite Chrome 200, though I haven't had a chance to try it yet. It has superb reciprocity characteristics, and very fine grain. It is a slide film, so you can't process it at home, but I plan on scanning astrophotos into my computer anyway. Both HP5 Plus and Elite Chrome have very high sensitivity to H-alpha light, so they will do a very good job of recording emission nebulae. Some films are blind to H-alpha, and won't record a thing.

I mounted my Ranger on a dovetail plate and fitted it to my Vixen mount. The Vixen's tracking is accurate enough, with a good polar alignment, that I can shoot ten minute exposures with no auto or manual guiding. Trip the shutter, walk away, and come back when ten minutes are up. Ten minutes is about the limit for an exposure because much beyond that the sky glow starts to fog the film.

Accurate focusing is always a problem with astrophotography. It is very hard to focus stars on a 35mm camera's focusing screen. To get around this, I bought an extra lens cap from the local camera store. I drilled three 3/4" holes in it, equally spaced around the lens cap. When the cap is in place, you simply focus on the plain part of the focusing screen, avoiding the split-prism center and microprism ring focusing aids used for daylight photography. I chose Vega and Sirius for focusing. When out of focus, each star provides three images. When in focus, they merge into one. Remove the cap, and you are done. Slew over to your target, and take your first exposure.

My next experiment will be to take a number of short exposures and to stack them in the computer. It should be possible this way to build up a composite of several short exposures that are equivalent to one long exposure.



The *Telguide*.

Our own Steve Trotta has invented the Telguide to aid you in your galactic hunts. For more information on how a Telguide can help you, [click here](#).



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A.V.A.C. Board Members

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Webmaster of Club Site:

Steve Trotta (661) 269-5428 webmaster@avastronomyclub.org

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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.

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.

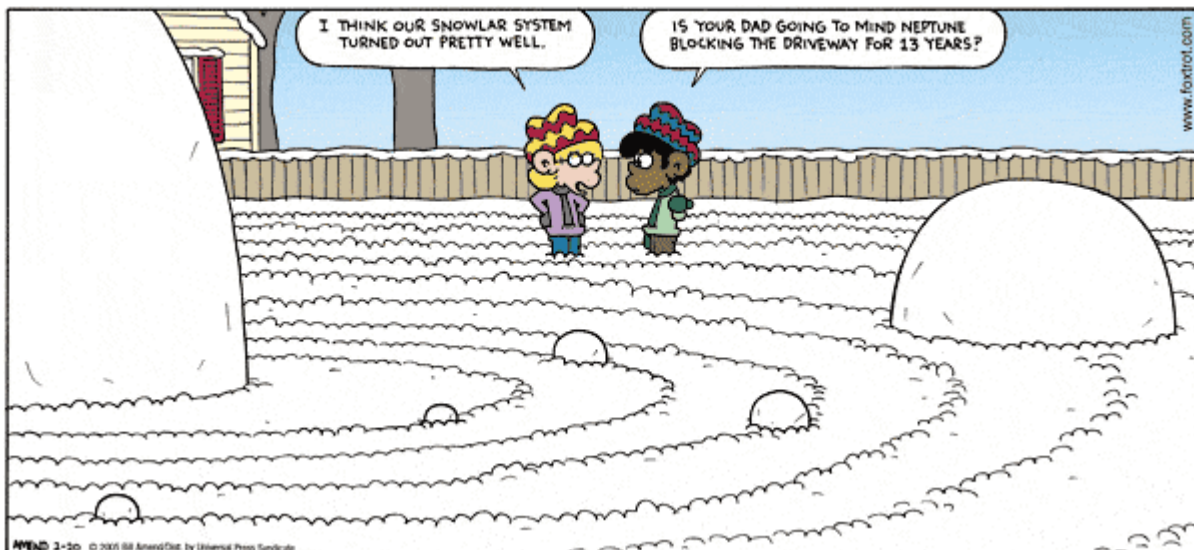
QNET: 1529 E. Palmdale Blvd., Suite 200. (661) 538-2028. As an Internet provider, they are kind enough to provide us with a free website.

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

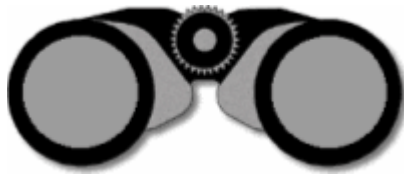
Woodland Hills Camera: 5348 Topanga Canyon Blvd., Woodland Hills. 888-427-8766.

www.telescopes.net

Thank you to our sponsors for your generous support!



A Look Ahead...



Upcoming Star Parties

March 12 Dark Star Party- Messier Marathon, [Saddleback Butte State Park](#)

Astronomy Links on the Web

<http://www.astropaws.com>

(Terry Babineaux's astrophotos)

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

(Steve Trotta's website)

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

(Tom Varden's website)

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

(Tom Koonce's website)

<http://saturn.jpl.nasa.gov/multimedia/images/latest/index.cfm>

(the latest Saturn pics from Cassini)

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

(The Astronomical League site)

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

(Pic of the Day)

www.avastronomyclub.org/

(that be us)