



# *Desert Sky Observer*

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NEWSLETTER OF THE ANTELOPE VALLEY ASTRONOMY CLUB, INC  
P.O. BOX 8545, LANCASTER, CALIFORNIA 93539-8545  
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Visit the Antelope Valley Astronomy Club website at [www.avastronomyclub.org/](http://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**

June 1: XCOR Tour

June 8: Club meeting

June 9-16: [Grand Canyon Star Party](#)

June 16: [Beginners Class](#)

June 16: New Moon Walk @ [Prime Desert Woodlands](#)

\* 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 20<sup>th</sup> 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**

And now for the \$64.00 question...why do we need a Board of Trustees? In a word, continuity, we need a body to keep OUR club moving forward year after year. In the past I have seen many good projects get started and then get lost in the shuffle as a new Executive Board gets its momentum going at the start of a new year.

I see our club at a turning point where we can either become a major force in the astronomical and science communities of the Antelope Valley or we can fall back and get lost in the hustle and bustle of the Valley. Some folks think that we should stay a small club and not get any larger than we are; myself I think that we can grow AND still keep that small club feeling with the large club assets if we do it right. I feel that the only way to do it right is to keep that continuity that I have talked about by instituting a Board of Trustees.

I ask you; do you want our club to have an observing site with an observatory, warm room and toilet facilities? Do you want to see the club with world-class equipment for our members to use? Do you want to see professional looking and sounding community outreach? I say yes to these questions and I feel that without a Board of Trustees these goals will take MUCH longer to reach. Please join the Executive Board and myself in planning and instituting a Board of Trustees.

After talking to several club members recently about our monthly meeting, we will be trying something new this month. We will start the meeting with the Pledge, welcome our visitors, have our Director of Community Development talk about the last month's events and all the fun that we had. Then we will have the "Scope for the Month", a detailed calendar for the coming month and possibly show photos of the last month's events or member's astrophotos. I will then talk about the benefits of membership in the AVAC

and lead us into our first break. After the break will begin what has traditionally been the second half of our meeting with our speaker and Jeremy's planetarium show, a second short break and then our business meeting last.

I know that this sounds like a lot but I think that we can do it and still be out of the planetarium by 9:00 as in the past. Please let me know how you liked it afterwards and give me any comments that you may have so that we can make our meetings more interesting and fun for all. Thank you for considering this enhancement for our club

Terry Pedroza, President

### ***Vice President Shane Barker***

This month we have a "Mystery" guest speaker. This speaker is so special you'll have to wait for the meeting to find out what the topic is for the night as well as the speaker. Are you in suspense yet? I know I can't wait to find out! Are you puzzled that I don't even know who is speaking? Mmmm! It will be an interesting night. See ya at the next meeting.

Interesting tid bits:

- Watch the big bright Moon pass through Scorpius and under Jupiter as May turns to June.
- Friday, June 1 Mercury is at greatest elongation, 23° east of the Sun in evening twilight.

Shane Barker, Vice President

### ***Director of Community Development Rose Moore***

First, I would like to thank all the members who have helped out at all the club events for the months of April and May. We have had a very busy spring! Your participation and enthusiasm makes these events a success!

On June 1st we have our first summer event for club members at XCOR in Mojave. There will be a tour of XCOR and then a star party. Any members who would like to attend, please notify me or Jeff Riechmann. We will need members to bring out telescopes for the star party. June 16th is a New Moon Walk and Public Star Party with Jeremy at Prime Desert Woodlands starting at 8:30pm. We need members with telescopes for this event. We will be getting a new list of upcoming dates for Prime Desert Woodlands from Jeremy soon. We have some tentative upcoming events still in the initial planning stages and information on those will be coming soon.

Clear skies, Rose M.

***RTMC 2007***

By Tom Koonce

What a fantastic event this year! 21 AVAC members attended the Riverside Telescope Maker's Conference and Astronomy Expo (RTMC) at Camp Oakes in Big Bear over the Memorial Day Weekend. The three days of fun are centered on all things astronomy related. There was a huge swap meet each day, followed by vendor sales from EVERY company involved with astronomy. There were 71 companies represented this year that were showing off their latest products, and several products that haven't even been released yet. (If you've seen Celestron's "SkyScout," wait until you see Meade's "MySky" unit. Wow! And you won't believe TeleVue's new "Ethos" series of eyepieces with a tack-sharp 100 degree field of view! Both products are coming out in 4-5 months!!)

The fun started off with Darrell Bennett winning a \$300 spotting scope. Later he also won a \$100 grab bag door prize. There were so many door prizes this year it was hard to keep track, but Karole Barker was the big winner this year, taking home \$800 worth of prizes including a spotting scope and a Meade DSI Pro camera with filters. Shane wasn't complaining. We were having Karole and Darrell touch our door prize tickets to see if some of this luck would rub off. It must have, because Tom and Heather Varden got a \$75 gift certificate, I got a \$50 digital camera mount for the telescope, and Steve and Kate Trotta and the boys came home with at least \$100 in grab bag prizes. Are you keeping track? The 21 members who attended came home with \$1425 in prizes! You really need to mark this event on your calendar for next year and come join in the fun!

The event isn't just about the free stuff. (OK it was, but there were other activities!) There was an ongoing series of talks at the Meade tent with door prizes awarded at the end of each talk. There were lectures about Community Outreach, Dark Matter, the history of the telescope, CCD imaging, and what equipment you should have as an absolute beginner. There were events for everyone at every level. There was a star party each night where we got to look through all of the new telescopes like Meade's 20" RCX on their new MAX mount, Al Nagler's 127 mm IS refractor with the new Ethos eyepiece for a stunning view of the Ring Nebula.

But did I mention how much free stuff was there? Celestron was handing out hats and very nice hand warmers, I got a mug, pin and Frisbee from Palomar, Meade was handing out carrying bags, pins and patches. I got discounts from nearly every booth. Terry Pedroza got the biggest discount this year though. Maybe it was because he made the largest purchase of our group when he got the incredible Takahashi Temma 2 mount from our Club's sponsor Woodland Hills Camera. It is gorgeous – a work of art really. Not just Terry, but many of our members spread out their spare cash at the event. Bill and Jennifer Riedhart, Mary Andrus and Milt Sawyer, Clint and Debbie, Doug Drake, Darrell and Nick Bennett, Steve and Kate Trotta, Shane and Karole Barker, Tom and Heather (soon to be) Varden, and myself all managed to buy items that we have been saving all year to get. If you have ever even thought of a certain astronomy-related product, it was for sale or trade at RTMC. The Rule of RTMC was once again confirmed: You Can Never Bring Enough Cash to RTMC. Please make your plans to come next year and hang out with us!

*RTMC 2007 Photos*

To see full size images, and more photos from RTMC, visit our [photo gallery](#).



Darrell is the first winner of the weekend, winning a Kestrel Spotting scope from Meade.



Terry and Steve listening to "Astrophotography: What have I gotten in to".



The whole gang waiting for the door prize drawings.



Darrell wins again, this time a grab bag with all kinds of goodies.



Tom wins a \$75 gift certificate. I can't remember who from but I'm sure Tom does.



Mike won a grab bag with a large Geode and a T-shirt.



Not to be out done by his brother, Chris won a grab bag with a planisphere, red flashlight, and a shirt.



The few diehards that stuck around for Sunday's raffle.



It paid off for Tom, he won a digital camera mount.



## The Ions of Dawn

by Patrick L. Barry

This summer, NASA will launch a probe bound for two unexplored worlds in our solar system's asteroid belt—giant asteroids Ceres and Vesta. The probe, called Dawn, will orbit first one body and then the other in a never-before-attempted maneuver.

It has never been attempted, in part, because this mission would be virtually impossible with conventional propulsion. “Even if we were just going to go to Vesta, we would need one of the largest rockets that the U.S. has to carry all that propellant,” says Marc Rayman, Project System Engineer for Dawn at JPL. Traveling to both worlds in one mission would require an even bigger rocket.

This is a trip that calls for the *unconventional*. “We’re using ion propulsion,” says Rayman.

The ion engines for the Dawn spacecraft proved themselves aboard an earlier, experimental mission known as Deep Space 1 (DS1). Because ion propulsion is a relatively new technology that’s very different from conventional rockets, it was a perfect candidate for DS1, a part of NASA's New Millennium Program, which flight-tests new technologies so that missions such as Dawn can use those technologies reliably.

“The fact that those same engines are now making the Dawn mission possible shows that New Millennium accomplished what it set out to,” Rayman says.

Ion engines work on a principle different from conventional rockets. A normal rocket engine burns a chemical fuel to produce thrust. An ion engine doesn't burn anything; a strong electric field in the engine propels charged atoms such as xenon to very high speed. The thrust produced is tiny—roughly equivalent to the weight of a piece of paper—but over time, it can generate as much speed as a conventional rocket while using only about 1/10 as much propellant.

And Dawn will need lots of propulsion. It must first climb into Vesta's orbit, which is tilted about 7 degrees from the plane of the solar system. After studying Vesta, it will have to escape its gravity and maneuver to insert itself in an orbit around Ceres—the first spacecraft to orbit two distant bodies. Dawn's up-close views of these worlds will help scientists understand the early solar system.

“They're remnants from the time the planets were being formed,” Rayman says. “They have preserved a record of the conditions at the dawn of the solar system.”

Find out about other New Millennium Program validated technologies and how they are being used in science missions at <http://nmp/TECHNOLOGY/infusion.html> . While you’re there, you can also download “Professor Starr’s Dream Trip,” a storybook for grown-ups about how ion propulsion enabled a scientist’s dream of visiting the asteroids come true. A simpler children’s version is available at <http://spaceplace.nasa.gov/en/kids/nmp/starr>.



Artist's rendering of Dawn spacecraft, with asteroids. Largest are Vesta and Ceres. Credits: Dawn spacecraft—Orbital Sciences Corporation; background art—William K. Hartmann, courtesy UCLA.

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

## ***Did you know ? ? ?***

The largest asteroid, Ceres, was the first one to be discovered, more than 200 years ago by Sicilian astronomer Father Giuseppe Piazzi in 1801. Piazzi was searching for suspected planets in a large gap between the orbits of Mars and Jupiter. From recent infrared images using the Keck Telescope in Hawaii, astronomers created a 3D model of Ceres revealing a textured surface with physical properties that are still not fully understood.

*From Lowell Observatory [StarTales](#)*

## *News and Headlines*

### **NASA Spitzer nets thousands of galaxies in a giant cluster**

In just a short amount of time, NASA's Spitzer Space Telescope has bagged more than a thousand previously unknown dwarf galaxies in a giant cluster of galaxies.

<http://www.spaceref.com/news/viewpr.rss.spacewire.html?pid=22728>

### **Planet-hunters find bonanza of new solar systems**

Planet-seekers who have spotted 28 new planets orbiting other stars in the past year say Earth's solar system is far from unique and there could be billions of habitable planets.

<http://www.cnn.com/2007/TECH/space/05/29/space.exoplanets.reut/index.html>

### **Saturn's rings are dense clumps**

Saturn's rings may look smooth and even when viewed through a telescope but they are in fact made up of clumps of particles and may be much denser than realized, scientists said on Tuesday.

<http://www.cnn.com/2007/TECH/space/05/24/saturn.rings.reut/index.html>

### **Strong evidence of wet past on Mars**

The Mars rover Spirit has uncovered the strongest evidence yet that the planet used to be wetter than previously thought, scientists reported Monday.

<http://www.cnn.com/2007/TECH/space/05/22/mars.rovers.ap/index.html>

### **Screaming CMEs Warn of Radiation Storms**

A CME (Coronal Mass Ejection) is a solar body slam to our high-tech civilization. CMEs begin when the sun launches a billion tons of electrically conducting gas (plasma) into space at millions of miles per hour.

<http://www.spaceref.com/news/viewpr.html?pid=22726>

### **Progress Being Made On Next US Man-Rated Spacecraft**

NASA this week wrapped up six months of system requirements reviews for the Orion spacecraft, the Ares launch vehicles and other support systems, bringing together the Constellation Program's list of basic capability needs.

[http://www.space-travel.com/reports/Progress\\_Being\\_Made\\_On\\_Next\\_US\\_Man\\_Rated\\_Spacecraft\\_999.html](http://www.space-travel.com/reports/Progress_Being_Made_On_Next_US_Man_Rated_Spacecraft_999.html)

### **Matters Beyond Beyond**

One of the major cosmological mysteries of the past century -- and that's saying something, given the basic nature and purpose of cosmology -- has been the question of "dark matter". Our awareness of this mysterious stuff goes all the back to 1933, although it took us some time to appreciate just how strange it must be.

[http://www.spaceblogger.com/reports/Matters\\_Beyond\\_Beyond\\_999.html](http://www.spaceblogger.com/reports/Matters_Beyond_Beyond_999.html)

### **Forecasting Earth-Like Worlds**

Missions like COROT, KEPLER, and DARWIN mean we should know much more about the abundance of Earth-like exoplanets in the coming decades.

[http://www.spacedaily.com/reports/Forecasting\\_Earth\\_Like\\_Worlds\\_999.html](http://www.spacedaily.com/reports/Forecasting_Earth_Like_Worlds_999.html)

**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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## *Astronomy Links on the Web*

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

(International Dark-Sky Association)

<http://obs.nineplanets.org/obs/obslist.html>

(If you are going to build an observatory, check out this site of ideas)

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

(Tom Koonce's website)

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

(Tom Varden's website)

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

(Steve Trotta's website)

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

(the latest Saturn pics from Cassini)

<http://astronomy-mall.com/>

(shop 'til you go broke)

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**Woodland Hills Camera:** 5348 Topanga Canyon Blvd., Woodland Hills. 888-427-8766. [www.telescopes.net](http://www.telescopes.net)

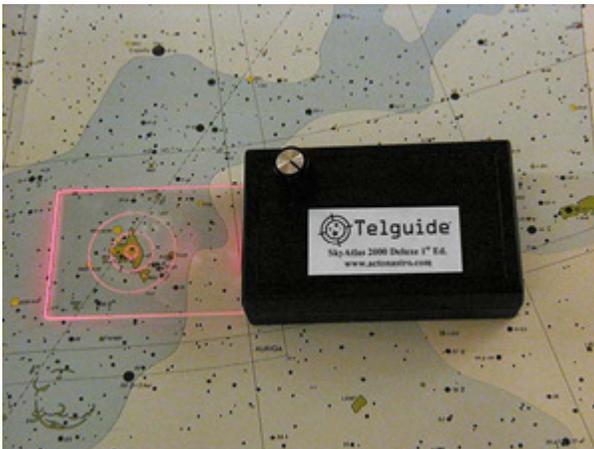
**Astro-tom.com:** Tom is dedicated to amateur astronomy. <http://www.astro-tom.com>

**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>

## *Al's Vacuum and Sewing*

### WOODLAND HILLS *Camera*



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