



# 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

**December 1:** [Prime Desert Woodlands](#) Moon Walk

**December 8:** Annual Christmas Party at the [Antelope Valley Inn](#)

**December 17:** Board Meeting at [Pedroza Flats](#)

\* 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**

Another year is coming to a close and what a year it has been. I would like to THANK EACH AND EVERY ONE OF YOU for your involvement in the Antelope Valley Astronomy Club. Without you there would be no club.

Jeremy, a heartfelt THANK YOU for all your help, the use of the Planetarium and the insight that you have given through all the years.

2007 Board Members, THANK YOU for your time, effort and input in keeping this club running as smoothly as it has.

2008 Board Members, THANK YOU for taking on the challenge of keeping OUR club running as it should.

Last but not least, THANK YOU Debora for putting up with me and our little group of merriment that has taken so much of my time this last year.

2008 is now upon us and it's time to start thinking ahead, ahead to what you would like to see our club do this next year. If you have ideas please do not hesitate to let the board or myself know what those ideas are.

I hope every one of you has a very merry Christmas and the best of new years.

Happy Holidays,  
Terry

***Vice President  
Shane Barker***

This month we won't be having a speaker due to the club's annual Christmas party. If you have any items for the raffle or silent auction, please contact Debora Pedroza or myself.

Our January speaker will be Mr. Matt Leone who will be speaking about "Are there Dilithium Crystals in the Universe?" Our February speaker will be Mr. Chris Butler, we will be confirming the topic he will be speaking about that month as the date gets closer.

Interesting tid bit:

Mercury is disappearing into the glow of sunrise. You can still try for it early in the week.

Uranus (Magnitude 5.8 in Aquarius) is well placed in the south right after dark, high above Fomalhaut.

See you at the Christmas party.

Shane Barker  
Vice President

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

For our last month for 2007, we have 2 events scheduled. The first is a Moon Walk with Jeremy at Prime Desert Woodlands on Saturday, Dec. 1st, at 6:00pm. We need volunteers with telescopes for this event! Please contact Jeremy if you can help out, as I will be away this week.

Also this month, on Tuesday Dec. 11th, is a school event at Crossroads School, headed by Dick Hague. Meeting time at the school will be at 9:00 am, presentation to start at 9:30am. Dick will be bringing a PST for some outside observing. Please contact Dick Hague for information at "RHague7@aol.com". He can use help with some other activities for the kids!

I would like to thank all those members who have come out to help with our club events this year! The club could not have made them all such a success, if not for the time, enthusiasm, dedication and generosity of its members! To all of you who have been able to come out to support these events, thank you so much for helping me!!

I urge our members to continue to come to our public events and star parties to show your support and love of astronomy! I wish our new Director of Community Development, Karole Barker, much success in the coming year!

Clear Skies!  
Rose M.



## Going My Way?

Not many endeavors require that you plan the mode of transportation before you even know what it is you are transporting. But weighing the physics and economics of getting any sort of cargo to space is a major part of designing a space mission.

It's one of the first issues that NASA's New Millennium Program (NMP) considers when planning a new mission. NMP has the forward-looking job to identify promising new technologies for space exploration. It then helps to mature the technology so it will be available to space missions of the future. If the technology cannot be tested adequately on Earth, the last part of this process is to actually send the technology into space. With carefully documented test results, future mission planners can confidently incorporate the new technology into their designs.

But where to begin? On call from the start, Linda Herrell is the New Millennium Program Architect. Given a list of proposed technologies, she has the job of figuring out the feasibility of wrapping a mission around them.

"We might be considering six or more technologies, anything from solar panels to imagers to masts for solar sails to more intelligent software. Of those, we may choose four. My job is to answer the question—can the selected technology be transported to and operated in space within the constraints of a low-cost technology validation project?"

Along with the list of possible mission payloads (the technologies), Linda also has a list of spacecraft to put them on, as well as a list of launch vehicle parameters. All she has to do is try them out in every possible combination (of which there are thousands) and see what might work.

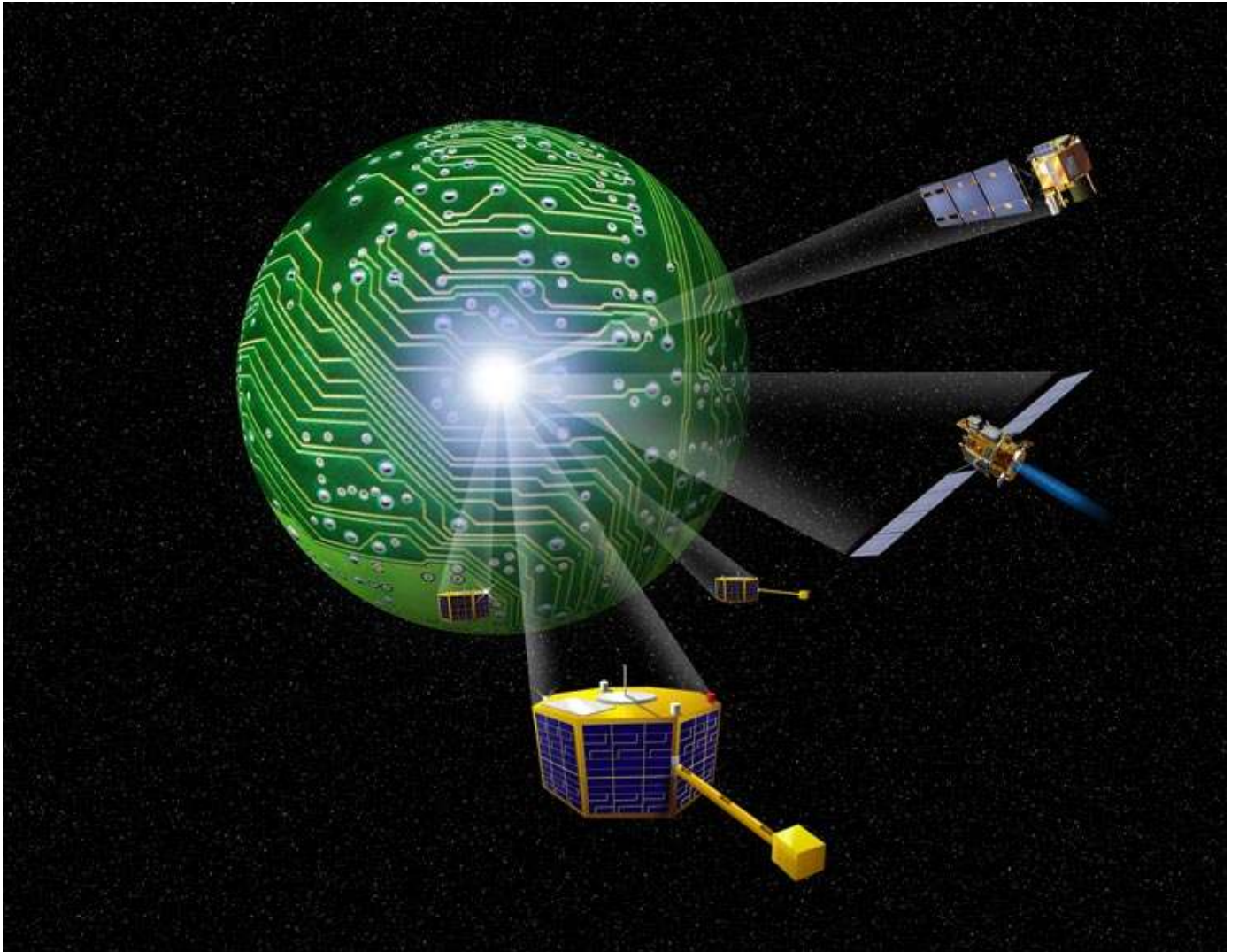
"Fortunately, we have a software tool to help with this analysis," says Linda. When it comes down to it, her job is primarily to figure out how to get the technologies into space.

"Sometimes, it's like figuring out how to get across town when you don't have your own car. You have to get creative."

She keeps a database of all possible options, including riding piggyback on another spacecraft, hitching a ride on a launch vehicle as a secondary payload, or sharing a launch vehicle with other NASA, Department of Defense, or even commercial payloads.

Her assessment is but one of a gazillion factors to be considered in planning a mission, but it is indeed one of the very first "details" that forms the foundation for the rest of the mission.

Find out some of the technologies that NMP has already validated or is considering at [nmp.nasa.gov/TECHNOLOGY/innovative-tech.html](http://nmp.nasa.gov/TECHNOLOGY/innovative-tech.html). Kids will enjoy watching Linda's cartoon alter-ego talk about her job at [spaceplace.nasa.gov/en/kids/live](http://spaceplace.nasa.gov/en/kids/live). This article was written by Diane K. Fisher and provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.



*NASA's New Millennium Program selects breakthrough technologies that will be of the greatest use to future space and Earth science missions and that are perceived to be risky to the first user.*

## *AVAC Observing Challenge*

By Tom Koonce

We'll be observing "Conjunctions" this month. But what are their functions, you might ask? Hooking up words, phrases and clauses? No, this time I mean two or more bright objects separated by very small angular distances in the sky.

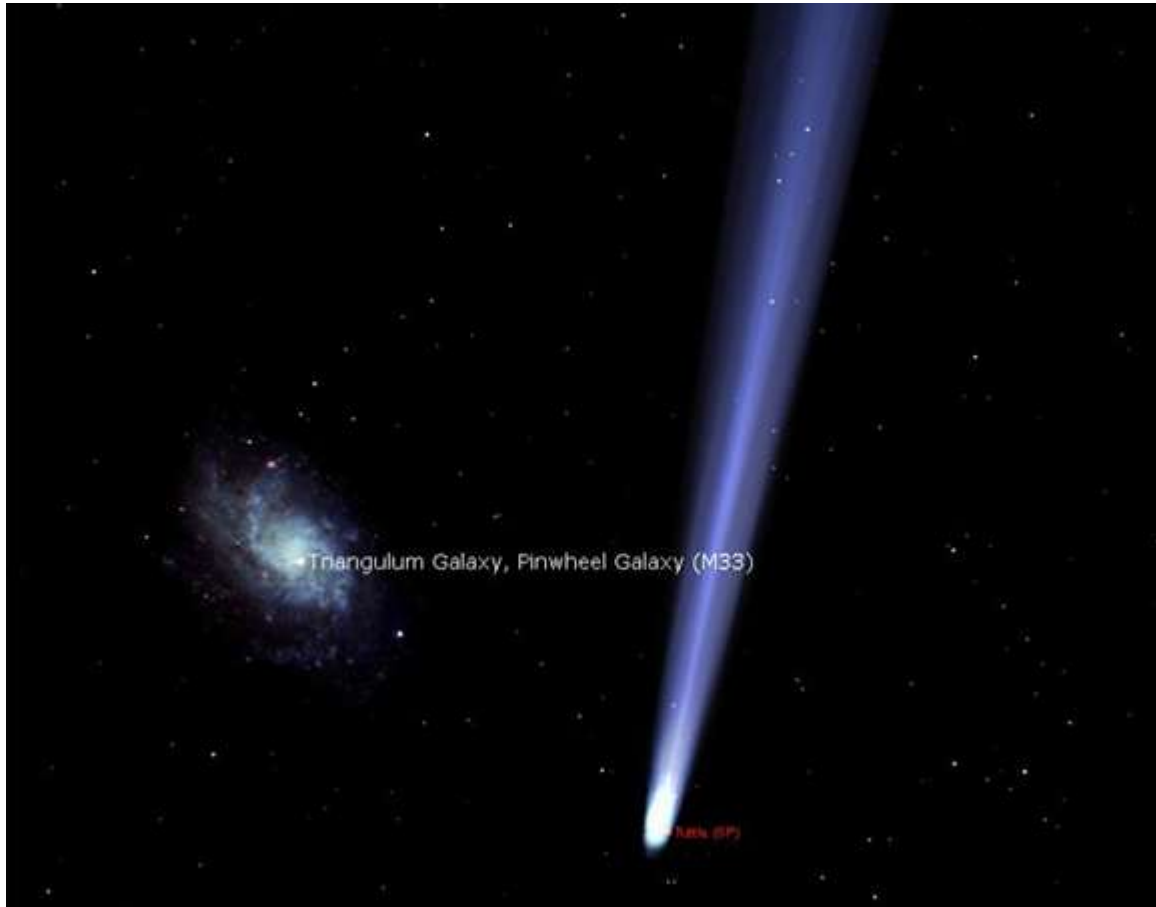
If you've been observing Comet Holmes, then you've noticed its close proximity to a star in Perseus called Mirfak. In fact on November 18, 19 and 20th Comet Holmes was less than two arc-seconds from this bright star and they made for a spectacular sight together.

Early in the morning on December 5, at 6:00 am, the crescent Moon will have a conjunction of sorts with the Moon in the eastern sky. Since they will be 7 degrees apart, it will be obvious, but not necessarily something that will make you say, "Whoa!" Venus will be slightly north of an "old" Moon, three days from "new."

However, as an early Holiday treat, get out your telescope on December 23 at 6:30 pm and watch the full Moon pass just 0.5 degrees from Mars at 6:00 pm and within just 3.5 degrees from the globular cluster M35 all at the same time! This surely deserves a "Whoa!"



Also note that Saturn and the Moon pass within 2.5 degrees at 6:00 am on December 28th. And now for the big finale... As an admitted astro-geek, I look for interesting conjunctions, and 2007 ends with a good one. On December 30, at 8:00 pm, point your telescope up at zenith and watch Comet Tuttle (8P) (magnitude 5.9) pass within 1 degree of M33 the Pinwheel Galaxy (magnitude 7). Under low power you should get both in one field of view, for an unforgettable sight.



(All Images created with Starry Night Pro)

Clear Skies!

- Tom

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

As comets orbit the Sun they leave behind a trail of debris. A meteor shower occurs when Earth passes through this trail. The Leonid Meteor Shower happens as Earth passes through the debris left by comet Temple-Tuttle.

## *News and Headlines*

### **"Teenage" galaxies give hints of early Milky Way**

The young building blocks of galaxies similar to the Milky Way have been spotted for the first time by astronomers, giving a tantalizing glimpse of how our stellar backyard may have formed.

[http://news.yahoo.com/s/nm/20071128/sc\\_nm/galaxies\\_teenage\\_dc;\\_ylt=AhQCZG.FS1zCg27ytkH66fWHgsgF](http://news.yahoo.com/s/nm/20071128/sc_nm/galaxies_teenage_dc;_ylt=AhQCZG.FS1zCg27ytkH66fWHgsgF)

### **Astronauts spacewalk, finish ISS project**

A pair of spacewalking astronauts wired the international space station's newest room on Saturday, crossing the last major task off their to-do list before the next shuttle mission early next month.

[http://news.yahoo.com/s/ap/20071125/ap\\_on\\_sc/space\\_station;\\_ylt=AgrDzI9nvvPGml3nVbLPtfiHgsgF](http://news.yahoo.com/s/ap/20071125/ap_on_sc/space_station;_ylt=AgrDzI9nvvPGml3nVbLPtfiHgsgF)

### **Oddball white dwarfs embody new category of star**

Eight unusual examples of a burned-out celestial object known as a white dwarf detected in our Milky Way galaxy represent a previously unknown category of stars, astronomers said on Wednesday.

[http://news.yahoo.com/s/nm/20071121/us\\_nm/star\\_dwarf\\_dc;\\_ylt=AscZQY.Tg7GSane3t4E8mkKHgsgF](http://news.yahoo.com/s/nm/20071121/us_nm/star_dwarf_dc;_ylt=AscZQY.Tg7GSane3t4E8mkKHgsgF)

### **A Last Look At Comet Holmes**

Comet 17P/Holmes, which dazzled sky watchers with a dramatic outburst that made it visible to the unaided eye, now is fading from sight. However, before it returns to the obscurity from which it came, astronomers at the MMT Observatory took a final look.

<http://www.spaceref.com/news/viewpr.html?pid=24107>

### **New supernovae theory**

A Los Alamos National Laboratory astrophysicist and his colleagues have discovered that a super-bright supernova observed last year might have exhibited an unusual one-two punch.

<http://www.astronomy.com/asy/default.aspx?c=a&id=6223>

### **How Far is the Orion Nebula?**

You'd think astronomers would have all the key stats on the Orion Nebula (Messier 42) by now. Visible to the unaided eye, this deep-sky showpiece was first studied with a spectroscope in 1864 and first photographed in 1880.

<http://www.skyandtelescope.com/news/home/11853711.html>

### **New Planets Forming in the Pleiades**

U.S. astronomers say new planets appear to be forming or have recently formed around a star in the Pleiades star cluster.

<http://www.skyandtelescope.com/news/wires?id=112145610&c=y>

### **Computer Simulation Predicts Voyager 2 Will Reach Major Milestone In Late 2007 or Early 2008**

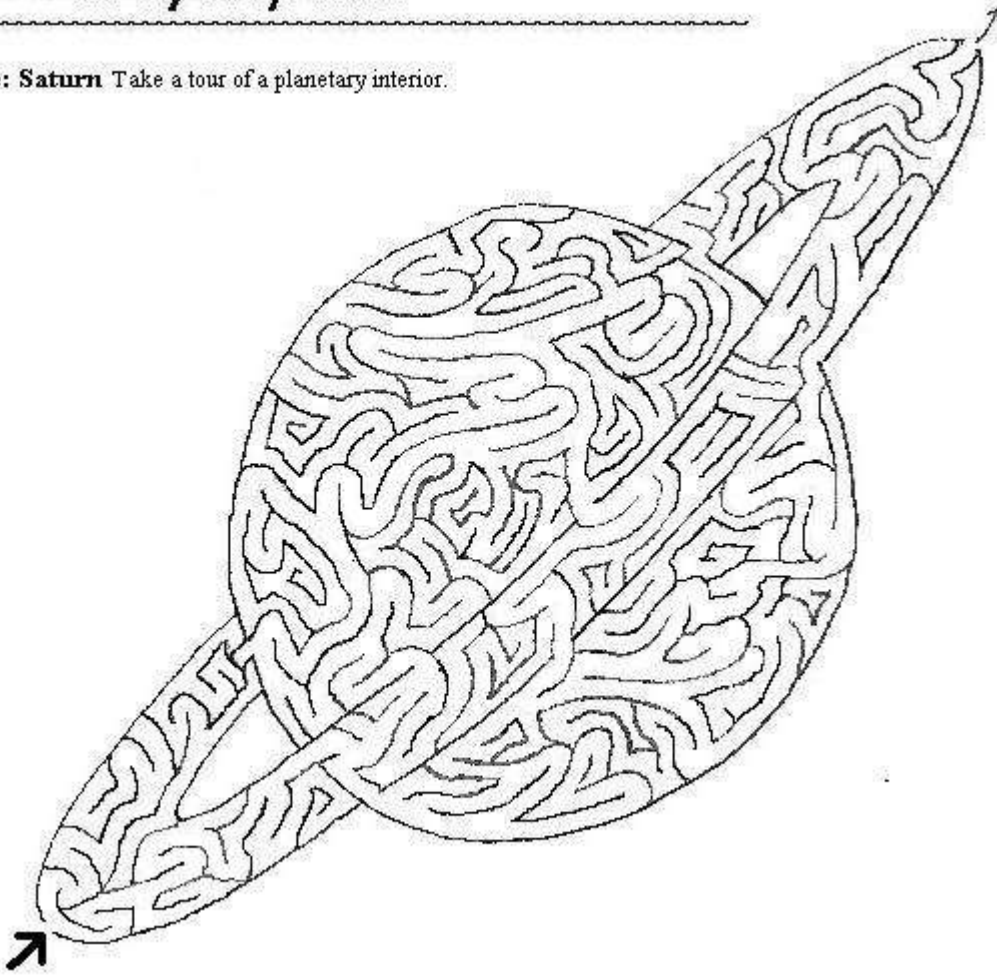
Using a computer model simulation, Haruichi Washimi, a physicist at UC Riverside, has predicted when the interplanetary spacecraft Voyager 2 will cross the "termination shock," the spherical shell around the solar system that marks where the solar wind slows down to subsonic speed.

[http://www.space-travel.com/reports/Computer\\_Simulation\\_Predicts\\_Voyager\\_2\\_Will\\_Reach\\_Major\\_Milestone\\_In\\_Late\\_2007%BFEarly\\_2008\\_999.html](http://www.space-travel.com/reports/Computer_Simulation_Predicts_Voyager_2_Will_Reach_Major_Milestone_In_Late_2007%BFEarly_2008_999.html)

## *For Cloudy Nights.....*

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**Maze: Saturn** Take a tour of a planetary interior.



### **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) 728-0130 [president@avastronomyclub.org](mailto:president@avastronomyclub.org)**Vice-President:**Shane Barker (661) 940-3312 [vice-president@avastronomyclub.org](mailto:vice-president@avastronomyclub.org)**Secretary:**Tom Koonce (661) 943-8200 [secretary@avastronomyclub.org](mailto:secretary@avastronomyclub.org)**Treasurer:**David Abrass [treasurer@avastronomyclub.org](mailto:treasurer@avastronomyclub.org)**Director of Community Development:**Rose Moore (661) 822-4580 [community@avastronomyclub.org](mailto:community@avastronomyclub.org)**Newsletter Editor:**Errol Van Horne (661) 273-7646 [newsletter@avastronomyclub.org](mailto:newsletter@avastronomyclub.org)**Equipment & Library:**Karol Barker (661) 940-3312 [library@avastronomyclub.org](mailto:library@avastronomyclub.org)**Club Historian:**Tom Koonce (661) 943-8200 [history@avastronomyclub.org](mailto:history@avastronomyclub.org)**Webmaster:**Steve Trotta (661) 269-5428 [webmaster@avastronomyclub.org](mailto:webmaster@avastronomyclub.org)**Astronomical League Coordinator:**Steve Trotta (661) 269-5428 [al@avastronomyclub.org](mailto:al@avastronomyclub.org)**Thank you to our sponsors for your generous support!****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.**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**