



# Desert Sky Observer

Volume 28 Issue 3

March 2008



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

**March 8:** Messier Marathon @ [Pedroza Flats](#)

**March 14:** Club Meeting\*

**March 17:** Board Meeting @ [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**

What do you think the Antelope Valley Astronomy Club is? Let me offer some thoughts from my perspective as your club president. The Antelope Valley Astronomy Club is a group of like-minded individuals who get together for the fellowship and opportunity to share their love of astronomy and the night sky. The Antelope Valley Astronomy Club is however, much more and serves a very special place in the educational fabric of the high desert.

We are also a community service organization. We lend our expertise and time to the community. We teach, we tempt, we excite all those in the community willing to accept our challenge to enjoy and appreciate the heavens above. We are sought out by many organizations to speak to their members, to open their minds and pique their interests in the celestial wonders so many take for granted. We have had winners of our essay contest go on to follow their love of astronomy and the related sciences entering advanced fields of study. We have had many community members join our club after they accepted our challenge to enjoy and appreciate the heavens above, and this is how our little club stays in existence and does not wither and fade away.

This is where the question of balance comes in. There have been many members that have felt that the balance had gone to far toward the community side with fellowship suffering as a result. Yet there are others that feel we need to do even more in the community. I feel that without community involvement our club would diminish to a handful of members and perhaps eventually, cease to exist. We need to find a happy medium, to obtain new members without burning our existing members out. This is why I am asking for YOUR input. Please let the Executive Board know where you stand on the issue of balance. After all this is YOUR club, not the Executive Board's. We are only here to guide the club along its path in the manner that YOU our members' desire. So please help us do just that by letting us (the Executive Board) know where YOU our club members feel we should lead our club.

Clear Skies,  
Terry

***Vice President  
Debora Pedroza***

Club members who were present at the February monthly club meeting received another spectacular presentation from artist and amateur astronomer Chris Butler. He has transformed his slideshow, "Our Little Corner of the Galaxy- Cycles of Fire" into an animated version, which he narrated with his quick humor and endless imagination. Thank you, Chris, for another amazing presentation.

Our club will be learning about a fairly new venture called "Astronomers Without Borders" at our March club meeting. Our speaker will be Mike Simmons- writer, photographer and amateur astronomer who has contributed to publications including Scientific American, Astronomy and Sky and Telescope magazines. He has served as the founding president of the Mount Wilson Observatory Association and has been on the board of trustees ever since. Astronomers Without Borders is his new passion and it should be a thrill to watch him speak about it. This is a worldwide effort to unite astronomy and space enthusiasts from all around the world. Be sure to attend and see how we can all make a difference.

The Youth Exploring Astronomy Essay Contest is in its final two weeks and we will begin the judging process. First we screen the essays, meaning we weed out obvious internet copies or outlandish or inappropriate theme writing. Volunteers from our club usually do this process and thoroughly enjoy the reading. If you would like to participate this year let me know. We are also in the selection process for our semi-final and final judges. I have recently become aware of two prestigious gentlemen through the press. They are retired astronaut Vance Brand and former aerospace worker Edward Nagle. Does anyone know how to contact either of these fellows? I think they would be great!

See you at the club meeting. Until then- take good care.

***Director of Community Development  
Karole Barker***

The month of March has a couple of events for our club, starting with our club Messier Marathon at Pedroza Flats on Saturday, March 8th @ 5pm thru Sunday, March 9th @ 6am and a Full Moon Walk with Jeremy at Prime Desert Woodlands on Saturday March 29th, at 6:00pm. We need volunteers to help out and bring scopes or other items of interest for the public.

In April we will be at the Poppy Festival on April 19th & 20th here in Lancaster. We will need volunteers for each day at the festival.

In May one of the big events is the Riverside Telescope Makers Conference on May 23-26 at Camp Oakes in Big Bear, CA. Last year was a blast. Another big event for our club is Mt. Wilson, which is on Saturday June 28th. Please come out to support our club.

Clear Skies,  
Karole



## Invisible Spiral Arms

by Patrick Barry

At one time or another, we've all stared at beautiful images of spiral galaxies, daydreaming about the billions of stars and countless worlds they contain. What mysteries—and even life forms—must lurk within those vast disks?

Now consider this: many of the galaxies you've seen are actually much larger than they appear. NASA's Galaxy Evolution Explorer, a space telescope that “sees” invisible, ultraviolet light, has revealed that roughly 20 percent of nearby galaxies have spiral arms that extend far beyond the galaxies' apparent edges. Some of these galaxies are more than three times larger than they appear in images taken by ordinary visible-light telescopes.

“Astronomers have been observing some of these galaxies for many, many years, and all that time, there was a whole side to these galaxies that they simply couldn't see,” says Patrick Morrissey, an astronomer at Caltech in Pasadena, California, who collaborates at JPL.

The extended arms of these galaxies are too dim in visible light for most telescopes to detect, but they emit a greater amount of UV light. Also, the cosmic background is much darker at UV wavelengths than it is for visible light. “Because the sky is essentially black in the UV, far-UV enables you to see these very faint arms around the outsides of galaxies,” Morrissey explains.

These “invisible arms” are made of mostly young stars shining brightly at UV wavelengths. Why UV? Because the stars are so hot. Young stars burn their nuclear fuel with impetuous speed, making them hotter and bluer than older, cooler stars such as the sun. (Think of a candle: blue flames are hotter than red ones.) Ultraviolet is a sort of “ultra-blue” that reveals the youngest, hottest stars of all.

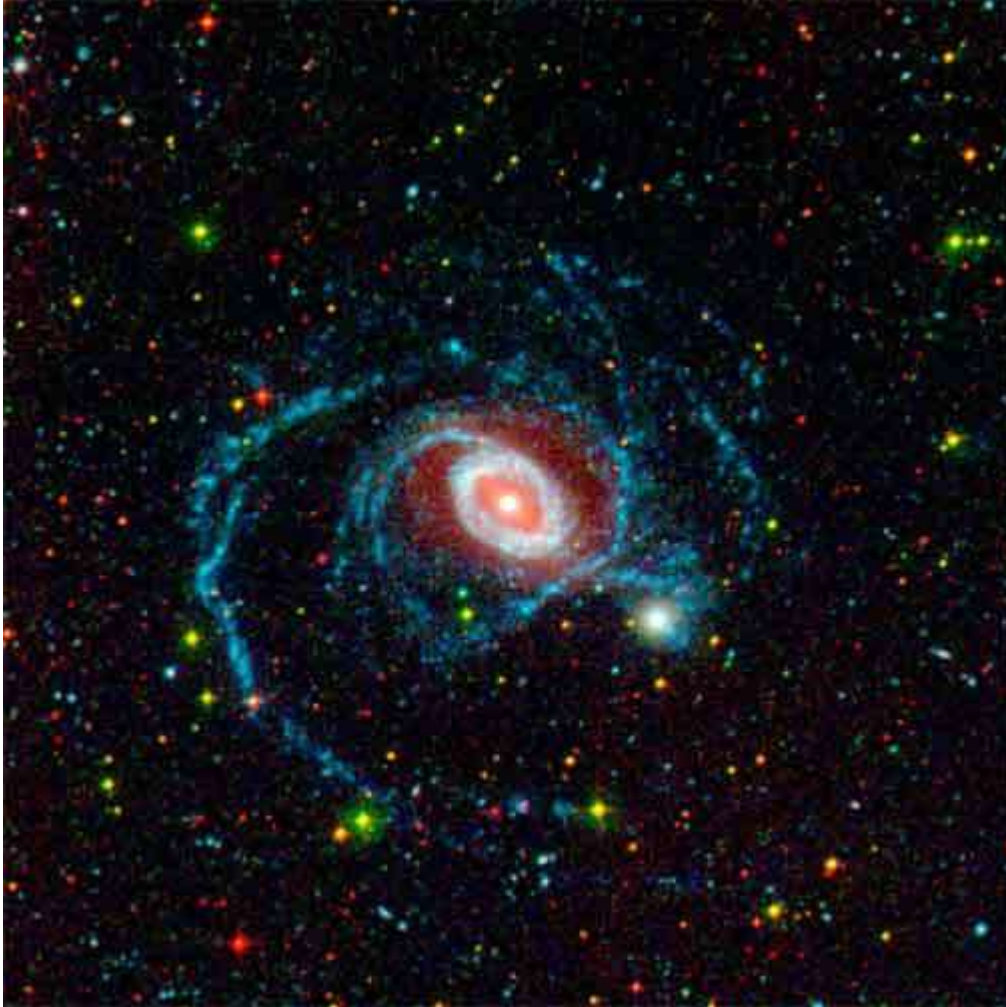
“That's the basic idea behind the Galaxy Evolution Explorer in the first place. By observing the UV glow of young stars, we can see where star formation is active,” Morrissey says.

The discovery of these extended arms provides fresh clues for scientists about how some galaxies form and evolve, a hot question right now in astronomy. For example, a burst of star formation so far from the galaxies' denser centers may have started because of the gravity of neighboring galaxies that passed too close. But in many cases, the neighboring galaxies have not themselves sprouted extended arms, an observation that remains to be explained. The Galaxy Evolution Explorer reveals one mystery after another!

“How much else is out there that we don't know about?” Morrissey asks. “It makes you wonder.”

Spread the wonder by seeing for yourself some of these UV images at [www.galex.caltech.edu](http://www.galex.caltech.edu). Also, Chris Martin, principle scientist for Galaxy Evolution Explorer—or rather his cartoon alter-ego—gives kids a great introduction to ultraviolet astronomy at [spaceplace.nasa.gov/en/kids/live#martin](http://spaceplace.nasa.gov/en/kids/live#martin).

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



In this [image](#) of galaxy NGC 1512, red represents its visible light appearance, the glow coming from older stars, while the bluish-white ring and the long, blue spiral arms show the galaxy as the Galaxy Evolution Explorer sees it in ultraviolet, tracing primarily younger stars. (Credit: NASA/JPL-Caltech/DSS/GALEX).



Galaxy NGC 1512 is represented in [both images](#). The visible light image on the left shows the glow of older stars, while the Galaxy Evolution Explorer ultraviolet image on the right shows the ring and long, spiral arms, tracing primarily younger stars. (Credit: NASA/JPL-Caltech/DSS/GALEX).

## *AVAC Observing Challenge*

By Tom Koonce

March 8 is our Messier Marathon!!

The clock is winding down... There are just days left to practice for the March 8 Messier Marathon. In preparation, you've probably laid out your astronomy items and cleaned them, organized your equipment and made sure that you've replaced batteries wherever required. You have your warm clothes, snacks, folding chair and table, deep-sky object confirmation books, locator charts and your observing log is ready to go. But you may be thinking that there are probably some other accessories that you're going to need... and you're right. Here's a prioritized list of the BEST last minute accessories to purchase to make your observing experience during the Messier Marathon a memorable one.

### Item 1

A good low power, wide-field eyepiece. Most of the Messier objects are best seen at a magnification of 40X to 100X, so surprisingly, you'll not need higher power! To find the magnification of the eyepieces you may already have, just divide the focal length (in millimeters) of your telescope by the focal length of the eyepiece (in millimeters). For example, the 8 inch Celestron Schmidt-Cassegrain has a focal length of 2000 mm. If I use a 40 mm eyepiece, the magnification is  $(2000/40) = 50X$ . For this particular telescope I won't need anything more powerful than a 20 mm eyepiece to see all of the Messier Objects. You'll want an eyepiece with an apparent field of view of at least 68 degrees. These are frequently referred to in the advertising as "wide-field" eyepieces. You can purchase great used eyepieces at <http://www.astromart.com> at a fraction of their original cost or new eyepieces from our sponsor Woodland Hills Telescope, Orion Telescopes and Binoculars (<http://www.oriontelescopes.com>) and elsewhere. You can spend, literally, as much money on an eyepiece as a new telescope, but I recommend concentrating on getting either a Plossl or Super-Plossl design as a minimum. For this article I will recommend you earmark at least \$100 for a 1.25" 20 mm - 40 mm eyepiece. If you can find a TeleVue eyepiece within this range, you won't be sorry.

### Item 2

A Telrad Finder Scope. Accept no substitutions! They cost \$37 brand new, and half that, used. This is a "must have" finder scope on your telescope for any serious amateur. Period. All of the finder charts for the Messier Marathon have Telrad circles as reference. All of the reference confirmation books have... Telrad circles as reference. All of your fellow observers will be providing you assistance in terms of... Telrad circles. The Telrad easily attaches to the top of your scope, is easy to calibrate, and easy to look through. Gotta have one! Check out Woodland Hills Telescope or <http://www.amazon.com/Telrad-Finder-Sight/dp/B0000ALKAN>. To make finding objects even easier, get a Telguide (<http://www.actonastro.com>) that matches your star atlas and you'll be able to locate deep-sky objects in a snap.

### Item 3

An Oxygen III Nebula Filter. Buy one to match your eyepiece collection, but at least match your premium eyepiece that you'll use most of the time during the marathon. They will come in 1.25" and 2" sizes to match the eyepiece barrel diameter of the eyepiece they screw into. The filter is used to increase the contrast between nebulas and the background sky. You will want this filter during your observations of the Owl, Ring, Swan, Trifid and many other nebulas. It won't help on galaxies however, since galaxies emit light on all wavelengths. Get a good one with at least a 90% transmission rating in Ionized Oxygen (O III) at 496 nm and 501 nm. You can expect to pay as little as \$50 for a good used 1.25" filter and up to \$200 for a new top-of-the-line 2" filter. The filters screw into the bottom of your eyepiece. Check the stores and websites mentioned in Item 1.

Item 4

“Finder Charts of The Messier Objects”, by Brent Watson. Volumes 1 and 2. Every Messier object has its own finder chart with a Telrad circle on it, the object is described in detail, with type, magnitude, angular size and actual diameter. Every page is heavy-duty laminated for use under dew-laden skies. A must have. The set is \$35.99 at <http://www.sky-spot.com/messier.html> or you can buy it at Woodland Hills Telescope, using your \$30 off discount coupon you got with your Club membership. Also, please remember that the Club has a free set you can borrow in the Club library.

Item 5

Body / Hand Warming Packs. Get a few extra packs, they’re only 99 cents at the sporting good stores and WalMart. It stinks to be so cold you can’t think. Get the body warmer packs instead of the toe or hand warmers. Put one in your front shirt pocket and one in your back pocket and just smile as the night gets colder and colder...

				
<p><b>Item 1 -</b> Wide-field Eyepiece</p>	<p><b>Item 2 -</b> Telrad</p>	<p><b>Item 3 -</b> Oxygen III Nebula Filter</p>	<p><b>Item 4 -</b> Messier Object Finder Charts</p>	<p><b>Item 5 -</b> Body Warmer Packs</p>

For reference, an entire Messier Marathon guide can be found at:  
[http://www.astro-tom.com/messier/messier\\_objects.htm](http://www.astro-tom.com/messier/messier_objects.htm)

Clear Skies!  
 - Tom

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

Charles Messier discovered the Crab Nebula while searching for “the comet of 1758” and labeled it M1 on his charts. By 1764, Messier had accumulated a number of “false comets” and began to make a list of them “so that astronomers would not confuse these same nebulae with comets just beginning to shine.” In seven months Messier had cataloged 40 objects. Since then, the list he started has become the most popular list of items that amateur astronomers enjoy viewing. How ironic is it that the list that was started so people wouldn’t view the items has become the list everyone tries to view.

## *News and Headlines*

### **Space shuttle Endeavour cleared for March 11 launch**

NASA managers on Friday cleared the U.S. space shuttle Endeavour for liftoff on March 11 on the first of three flights to deliver a huge Japanese research complex to the International Space Station.

[http://news.yahoo.com/s/nm/20080301/sc\\_nm/space\\_shuttle\\_dc](http://news.yahoo.com/s/nm/20080301/sc_nm/space_shuttle_dc)

### **Moon Covers Venus on Wednesday**

The thin waning crescent Moon occults (covers) Venus during daylight on March 5, 2008, for central and western North America and Mexico. The bright little planet will disappear behind the Moon's bright edge (which may be invisible in the blue sky) and will reappear from behind the Moon's dark edge.

<http://www.skyandtelescope.com/observing/home/16079237.html>

### **Study casts doubt on water on Mars surface**

It made a big splash when scientists announced in 2006 that images from a NASA spacecraft indicated water apparently had flowed on the surface of Mars in the past decade but new research casts doubt on that finding.

[http://news.yahoo.com/s/nm/20080229/sc\\_nm/mars\\_water\\_dc](http://news.yahoo.com/s/nm/20080229/sc_nm/mars_water_dc)

### **US Experiment Takes The Lead In The Competitive Race To Find Dark Matter**

Scientists of the Cryogenic Dark Matter Search (CDMS) experiment, including researchers from the California Institute of Technology, today announced that they have regained the lead in the worldwide race by a number of different research groups to find the particles that make up dark matter.

[http://www.spacedaily.com/reports/US\\_Experiment\\_Takes\\_The\\_Lead\\_In\\_The\\_Competitive\\_Race\\_To\\_Find\\_Dark\\_Matter\\_999.html](http://www.spacedaily.com/reports/US_Experiment_Takes_The_Lead_In_The_Competitive_Race_To_Find_Dark_Matter_999.html)

### **Opportunity Proceeds With Caution On Sandy Slopes**

After recovering from a stall in Joint 1, which controls the compass orientation of the shoulder on the rover's robotic arm, Opportunity is proceeding carefully to its next target, an exposure of layered rocks known as "Gilbert."

[http://www.marsdaily.com/reports/Opportunity\\_Proceeds\\_With\\_Caution\\_On\\_Sandy\\_Slopes\\_999.html](http://www.marsdaily.com/reports/Opportunity_Proceeds_With_Caution_On_Sandy_Slopes_999.html)

### **NASA Views Landing Site Through Eyes Of Future Moon Crew**

NASA has obtained the highest resolution terrain mapping to date of the moon's rugged south polar region, with a resolution to 20 meters (66 feet) per pixel.

[http://www.moondaily.com/reports/NASA\\_Views\\_Landing\\_Site\\_Through\\_Eyes\\_Of\\_Future\\_Moon\\_Crew\\_999.html](http://www.moondaily.com/reports/NASA_Views_Landing_Site_Through_Eyes_Of_Future_Moon_Crew_999.html)

### **Chasing a Supernova Progenitor**

For the first time ever, astronomers may have found the progenitor of a Type Ia supernova. Or, frustratingly, maybe not.

<http://www.skyandtelescope.com/news/15875852.html>

### **Preparing for Phoenix**

Three Mars spacecraft are adjusting their orbits to be over the right place at the right time to listen to NASA's Phoenix Mars Lander as it enters the Martian atmosphere on May 25.

<http://www.astronomy.com/asy/default.aspx?c=a&id=6678>

***For Sale***

In addition to listing items for sale or wanted in the DSO, members can now list them on the clubs website at [http://www.avastronomyclub.org/for\\_sale/](http://www.avastronomyclub.org/for_sale/). Only members can post ads, but anyone can respond to them.

Meade Series 4000 2X Barlow, for 1.25" eyepieces. Mint condition. Includes set screw, one cap and original box. \$45 negotiable. (Originally sold for \$120) [Click for Photo](#). Call Tom, 661-943-8200

Celestron multi-coated 32mm Erfle 1.25" eyepiece. Excellent condition, no marks on barrel, threaded for filters, extremely sharp views of Moon and deep sky. Made in Japan, not China. Includes caps. \$40 negotiable. [Click for Photo](#). Call Tom, 661-943-8200

Mint condition. Multi-coated 25mm Plossl, Series 500, from Hands-on-Optics. 1.25" barrel, threaded for filters. Great "star party" eyepiece. Rubber eye guard. \$15 negotiable. [Click for Photo](#). Call Tom, 661-943-8200

Mint condition. Multi-coated Japanese "mystery eyepiece" with variable diopter adjustment. Equivalent to approximately 15mm? I bought this from a well-known amateur astronomer on top of Mt. Pinos. He told me I'd be amazed by its sharpness (and I was – it's very, very good!) 1.25" spotless barrel, threaded for filters. A great lunar and planetary eyepiece. Rubber eye guard. \$20 negotiable, but I'll give you a money back guarantee if not happy with this little jewel. [Click for Photo](#). Call Tom, 661-943-8200

Relatively New Celestron Binocular Viewer Asking price: \$150.00 Bought it brand new a year ago for \$ 220.00. Seldom used. Comes with its own case. If interested, contact Duane at [duanium2003@yahoo.com](mailto:duanium2003@yahoo.com)

**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:**Debora Pedroza (661) 728-0130 [vice-president@avastronomyclub.org](mailto:vice-president@avastronomyclub.org)**Secretary:**Tom Varden [secretary@avastronomyclub.org](mailto:secretary@avastronomyclub.org)**Treasurer:**Tom Koonce (661) 943-8200 [treasurer@avastronomyclub.org](mailto:treasurer@avastronomyclub.org)**Director of Community Development:**Karole Barker (661) 940-3312 [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.**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**