



Desert Sky Observer

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ANTELOPE VALLEY
ASTRONOMY CLUB, INC.

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
Dark-Sky Association.*



Up-Coming Events

- November 2: New Moon
November 9: First Quarter
November 11: **Monthly Club Meeting***
November 12: Mars Star Party, [Poppy Reserve](#)
November 16: Full Moon
November 23: Last Quarter Moon
November 25: [Mt. Wilson](#) trip

* 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

My sincere thanks to each and every club member who came to support our annual business meeting and participated in the election of our new Executive Board club officers for the year 2006. Our new board includes both previous board members and new members, bringing in both experience and fresh talent and ideas- a winning combination. Congratulations to Doug Drake (President), Richard Hague (Vice President), Larry Oschner (Secretary), Steve Trotta (Treasurer) and to Rose Moore as Community Development Director! Our club will be in good hands. Thanks to you all.

The club would also like to recognize the following club members who gave us their knowledge, insight and humor during our "Meet the Experts" panel presentation that was wonderfully emceed by Brian Peterson. We appreciate every one of you guys: Tom Koonce, Tom Varden, Bill Reidhart and Jeremy Amarant.

The holidays are just weeks away and it is time to plan for our annual Holiday Party. The club has confirmed reservations for Eduardo's Restaurant on Saturday, December 3rd at 6:00 pm. The cost is \$20.00 per person and you can reserve your ticket(s) from this point on with our club treasurer, David Abrass. We are still looking for items to be donated for our raffle and silent auction. In the years past we have had loads of fun winning all kinds of different items. Of course, we always love astronomy items, but you can also donate Christmas items, jewelry, books, clothing...anything! This is one of the best club events of the year so reserve your seats now and mark your calendars!

In closing this month, I want to personally say thank you to all of you who came by to see me in the hospital, sent cards and flowers and for the many phone calls that my husband and I received. I am doing much better and I feel like the most blessed person on earth. THANK YOU. Until next time, take good care.



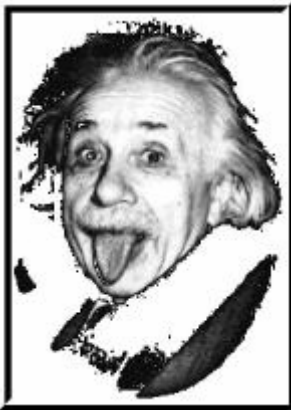
*Vice
President
Mindy
Peterson*

Our featured speaker for our November 11th meeting is David F. Coppedge, Team Lead System Administrator, Cassini Mission to Saturn. Mr. Coppedge will share the thrill and the latest and greatest hits of the Cassini mission. His presentation highlights the surprising discoveries at Saturn, shows the human side of space exploration, and climaxes with news from the dramatic landing of the Huygens Probe on Titan on January 14, 2005.

David F. Coppedge (B.S. physics, Cal State Northridge) is the team lead system administrator for the Cassini Mission to Saturn and Titan at the Jet Propulsion Laboratory. A member of the Cassini team since before launch in October, 1997, Dave has witnessed the entire mission. He frequently interacts with the planetary scientists and attends the science briefings as new discoveries come in. An occasional tour guide and speaker (and star party leader), Dave enjoys sharing the thrill of discovery with audiences.

We are quickly approaching the end of 2005 and our annual Christmas Party on December 3rd at Eduardo's in Palmdale. We have a much larger room than last year, which will afford us ample space to conduct our silent auction and opportunity drawings. The night promises to be one of fun, and knowing our group, lots of laughter.

Be sure you join our Club out at the Poppy Reserve on November 12th for an exciting evening of viewing the Red Planet, Mars. If past years have been any indication, we should have a huge public turnout.



*Director of
Community
Development
Terry Pedroza*

The end of 2005 is rapidly approaching, as is the end of my term. This has been a good year for the AVAC. We have actually had to turn down requests for community involvement due to the sheer quantity. That said, here is what we have left for 2005.

On the evening of November 12th we have the Mars star party at the Poppy Reserve. We will need as many members as we can get to man scopes and talk to the public. If you can help please let me know. We are also having the kick off for the 2006 YEA essay contest that evening.

November 19th brings Joe Walker's Super Science Saturday from 9:00 am until 12:30 pm. We will need three or so scopes and the folks to man those and the booth. If you can help please let me know. This event is where Deb had the inspiration for the YEA essay contest so many years ago.

The last event that I have scheduled for 2005 is the half-night at Mount Wilson observatory. This is scheduled for Friday the 25th of November and should be an absolute gas! For those who are planning to attend, the price is \$30.00 per person and needs to be received by the club no later than the day of the event. Please get your reservation in ASAP.

Rich Harper's Planet WatchMercury:

Mercury begins the month of November in Scorpius, will close on the sun on the 24th, and will become a morning star by the end of the month. However, Mercury will pass through the heart of Scorpius this month. On the fourth and fifth, it will lie about one degree south of the globular cluster M80. On the seventh, it will lie about two degrees north of the globular M4. From the eleventh to the sixteenth, Mercury will appear almost stationary in the sky and will begin closing with the sun, becoming more difficult to view as it nears the sun's glare. Just after sunset on the 21st, it will appear about one degree north of M80.

Venus:

Venus lies in Ophiuchus, near the Sagittarius border. Lying about 45 degrees west of the sun, you'll have nearly three hours to observe after sunset. Venus will pass through the center of the teapot from the sixth through the sixteenth, passing a few degrees south of M8, M20, M21, M22, M28.

Mars:

The Red Planet is now just past opposition and lies high in the sky in Aries. On the 14th, the moon will pass a few degrees north of Mars. On the first, Mars will shine at magnitude -2.3, and will have an angular size of 20 arc seconds. By the end of the month, Mars will have faded to -1.6 and will show an angular diameter of nearly 17 arc seconds, still plenty large all month long for continued detailed observations.

Jupiter:

The gas giant is a fairly bright morning star in Virgo, with an apparent magnitude of -1.7. Jupiter will lie eight degrees from the sun on the first, but by the time Mercury is hidden in the sun's glare on the 24th, Jupiter will be over 25 degrees away from the sun and will be observable in the morning sky before dawn.

Saturn:

Saturn is in Cancer, a few degrees from M44 in the morning sky. Saturn rises at around 11:00 pm., so will not be well placed for observing until a few hours before dawn.

Uranus:

Uranus lies in Aquarius, and should be an easy target in binoculars, at magnitude 5.8. Uranus sets right around 1:00 am. Uranus will lie close to the moon on the ninth.

Neptune:

Neptune sets fairly early this month, about 11:00 pm. Neptune can be found a few degrees south of M72 and M73 in Capricorn. On the 8th, the planet will be five degrees north of the Moon.

Pluto:

Pluto is extremely faint, at magnitude 14. It lies well above the ecliptic, and four degrees north of M9. Unfortunately, Pluto is passing across the Milky Way background, and will prove very difficult to pick out from faint background stars. Later in the month, dusk will interfere with any possible viewing.



Improbable Bulls-Eye

by Trudy E. Bell

When a massive star reaches the end of its life, it can explode into a supernova rivaling the brilliance of an entire galaxy. What's left of the star fades in weeks, but its outer layers expand through space as a turbulent cloud of gases. Astronomers see beautiful remnants from past supernovas all around the sky, one of the most famous being the Crab Nebula in Taurus.

When a star throws off nine-tenths of its mass in a supernova, however, it also throws off nine-tenths of its gravitational field. Astronomers see the light from supernovas. Can they also somehow sense the sudden and dramatic change in the exploding star's *gravitational field*?

Yes, they believe they can. According to Einstein's general theory of relativity, changes in the star's gravitational field should propagate outward, just like light- indeed, at the speed of light.

Those propagating changes would be a gravitational wave.

Einstein said what we feel as a gravitational field arises from the fact that huge masses curve space and time. The more massive an object, the more it bends the three dimensions of space and the fourth dimension of time. And if a massive object's gravitational field changes suddenly- say, when a star explodes- it should kink or wrinkle the very geometry of space-time. Moreover, that wrinkle should propagate outward like ripples radiating outward in a pond from a thrown stone.

The frequency and timing of gravitational waves should reveal what's happening deep inside a supernova, in contrast to light, which is radiated from the surface. Thus, gravitational waves allow astronomers to peer inside the universe's most violent events- like doctors peer at patients' internal organs using CAT scans. The technique is not limited to supernovas: colliding neutron stars, black holes and other exotic objects may be revealed, too.

NASA and the European Space Agency are now building prototype equipment for the first space experiment to measure gravitational waves: the Laser Interferometer Space Antenna, or LISA.

LISA will look for patterns of compression and stretching in space-time that signal the passage of a gravitational wave. Three small spacecraft will fly in a triangular formation behind the Earth, each beaming a laser at the other two, continuously measuring their mutual separation. Although the three craft will be 5 million kilometers apart, they will monitor their separation to one *billionth* of a centimeter, smaller than an atom's diameter, which is the kind of precision needed to sense these elusive waves.

LISA is slated for launch around 2015.

To learn more about LISA, go to <http://lisa.jpl.nasa.gov>. Kids can learn about LISA and do a gravitational wave interactive crossword at <http://spaceplace.nasa.gov/en/kids/lisaxword/lisaxword.shtml>.

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

Pre-Observing Websites



by Tom Koonce

With work and family, my observing opportunities are far more limited these days, so I find myself doing a bit more planning before I head out for an evening with the scopes. With 5-10 minutes of Internet browsing I have found that I can enjoy the time I do have.

First I check the weather at my observing site by clicking on [Clear Sky Clock](http://www.cleardarksky.com/) (<http://www.cleardarksky.com/>). This site tells me many things like predicted temperature, wind, cloud cover, and seeing- all as a function of time so I can decide if going out early is of value or if waiting to 9 pm. will get me onsite and setup for great conditions around midnight.

Then I check for bright satellite passes, Iridium flashes, or space station passes at [Heavens Above](http://www.heavens-above.com/) (<http://www.heavens-above.com/>). Why? Just because I think it's cool to see these, and events like an Iridium Flash or a space station pass always impresses the general public if they happen to be around.

Next I look at my Desert Sky Observer that you get free with your AVAC membership. The monthly celestial calendar is a great reference!

Then I consider the phase of the moon and rise/set times. Even though I have a passion for deep sky objects, I love looking at the Moon, too. In its first or third quarter, you can see a great deal of relief and details.

And I look at [Abram's Skywatcher's Diary](http://www.pa.msu.edu/abrams/SkyWatchersDiary/Diary.html) (<http://www.pa.msu.edu/abrams/SkyWatchersDiary/Diary.html>) for any interesting celestial events. This calendar is always good for sharing information about planetary conjunctions and meteor shower info.

And if I'm serious about logging in specific objects, I start up Starry Night Pro and plan my evening's objects to any level of detail that I need. [Starry Night Software](http://www.starrynight.com) (<http://www.starrynight.com>)

I hope this helps you with your next observing session!

Did you know? ? ?

The Leonid meteor shower returns on November 16th.

? ? ?

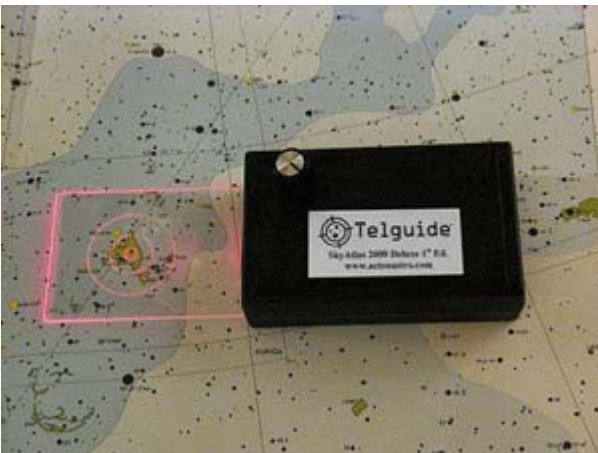


Astro-tom.com is dedicated to amateur astronomy

Astrophoto of the Month

M51, by Matt Taylor; 100 one-minute exposures and 50 thirty-second exposures with a Meade 12-inch and F/3.3 reducer.

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



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](#).



A.V.A.C. Board Members

President:

Debora Pedroza (661) 718-3963 president@avastronomyclub.org

Vice-President:

Mindy Peterson (661) 273-1693 vice-president@avastronomyclub.org

Secretary:

Larry Ochsner (661) 274-9006 secretary@avastronomyclub.org

Treasurer & Astronomical League Coordinator:

David Abrass treasurer@avastronomyclub.org

Director of Community Development & Club Librarian:

Terry Pedroza (661) 718-3963 community@avastronomyclub.org

Newsletter Editor:

Brian Peterson (661) 273-1693 newsletter@avastronomyclub.org

Club Historian:

Tom Koonce (661) 943-8200 Takoonce@aol.com

Webmaster of Club Site:

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

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.

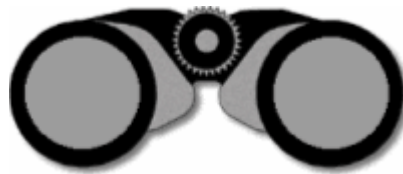
- Family membership at \$30.00 per year.
- Individual membership at \$25.00 per year.
- Junior membership at \$15.00 per year.

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 Look Ahead...



Upcoming Events

December 3: Annual Christmas Party

Astronomy Links on the Web

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

(International Dark-Sky Association)

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

(Tom Koonce's website)

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

(Tom Varden's website)

<http://www.astropaws.com>

(Terry Babineaux's astrophotos)

<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)

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.

ONET: 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!