



Desert Sky Observer

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NEWSLETTER OF THE ANTELOPE VALLEY ASTRONOMY CLUB, INC
P.O. BOX 8545, LANCASTER, CALIFORNIA 93539-8545
*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

- September 07:** Full Moon
- September 08:** Monthly Club Meeting*
- September 14:** Last Quarter Moon
- September 15:** Board Meeting
- September 16:** Aerospace Walk of Honor
- September 22:** New Moon
- September 23:** Dark Star Party at Mt. Pinos
- September 30:** First Quarter Moon

* 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 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

Doug Drake

Here we are you and I, living as history is being made in science. Yes indeed, we are witnessing today's history as it happens, just like when man first stepped on the Moon. This time however, we are witnessing change that enhances our understanding of our solar system and the planets within it. If you haven't guessed I'm talking about Pluto and many of other objects in the outer parts of our solar system.

Pluto was a planet but is now defined as a "dwarf planet," as of August 24, 2006 by the Astronomical Union (IAU) meeting in Prague. I know, I know, we would like Pluto to be a full grown planet and not a dwarf, but new understanding brings wisdom of change.

I remember when I was at school and studying astronomy, it was an alchemy elective in those days, to study the possibility of vegetation on Mars and this explained the seasonal changes Mars underwent throughout a Martin year. Astronomer views and concepts of planets were derived from the tools they had which were Earth bound telescopes; i.e., no satellites, no planetary spacecraft and no space telescope. Of course we now know that the seasonal changes are cause by the enormous winds that move the Martin dust and sand to cover and uncover darker material. So the moral of my story is that as we change through time so does our knowledge and concepts change. Since Pluto has been classified as a dwarf planet we now only have 8 recognized planets (i.e. Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune.) I have attached a couple of pictures that might interest you.

Pluto has only been reclassified and has not gone to the dogs.

Your Pres, Doug

***Vice President
Richard Hague***

Our speaker this month will be Nagin Cox of JPL. Her topics will be the Mars Exploration Rovers and the Kepler program. We haven't heard much about the Rovers lately, but they're still going like the Energizer Bunny and Nagin will update us on them. The Kepler program is designed to locate extra-solar planets, some of which could be Earth size and in a stars 'life zone'.

At JPL, Nagin Cox has worked on NASA's Galileo mission to Jupiter before switching to Mars missions and then Kepler. She holds engineering and psychology degrees from Cornell University, Ithaca, N.Y., and a master's degree in space operations systems engineering from the Air Force Institute of Technology, Wright-Patterson Air Force Base, Ohio. Prior to joining JPL in 1993, she served as a U.S. Air Force Captain at the U.S. Space Command in Cheyenne Mountain, Colorado Springs, CO and at Wright-Patterson AFB doing F-16 Aircrew Training.

As we all know extra-solar planets have come in for lots of publicity lately. You can find information on how this search is going and what is in the future by going to "planetquest.jpl.gov" on the web. The latest count to this date is 193. These are all, so far, larger planets but the efforts with new programs (Kepler, SIM, etc.) are to find smaller (Earth size) rocky planets within the life zones of their stars. The obvious hope is the search for possible life. Down the road not too far will be instruments which should be able to analyze actual atmospheres of candidate planets for oxygen, methane, carbon dioxide, etc, all possible life indicators.

Be sure to make this meeting, it is certain be a good one.

Dick Hague

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

The fall season is coming and we have several events scheduled. A number of members have already signed up, but we always welcome more, so if you would like to join us at these events please let one of the board members know, or sign up at the next meetings!

First is the Aerospace Walk of Honor, Saturday, Sept. 16th. Set up starts at 1pm, and the event is from 5pm to 10pm. We will be setting up telescopes to view the Sun, and later in the evening, hopefully, some nighttime celestial objects.

Other events: Palmdale Fall Festival is Saturday and Sunday, Oct. 14th and 15th; Jeremy has arranged with Prime Desert Woodlands, a nature walk followed by observing on Saturday, Oct. 21st, starting at 6:45pm; We will also be having a public star party at the Poppy Reserve on Saturday, Nov. 18th. More information is coming. Another tentative event is a star party for the students at Vista San Gabriel School.

Don't forget a talk by David Levy at the Planetarium, Thursday and Friday, Sept. 14th and 15th at 7pm!

Clear skies to all!
Rose

News and Headlines

Pluto no longer a planet, say astronomers

Leading astronomers declared Thursday that Pluto is no longer a planet under historic new guidelines that downsize the solar system from nine planets to eight.

<http://www.cnn.com/2006/TECH/space/08/24/pluto.ap/index.html>

Mars Reconnaissance Orbiter Successfully Concludes Aerobraking

Nearly six months after it entered orbit, Mars Reconnaissance Orbiter has concluded its aerobraking phase. The spacecraft had been dipping in and out of the red planet's atmosphere to adjust its orbit. On August 30, 2006, during its 445th orbit, the spacecraft fired its intermediate thrusters to raise the low point of its orbit and stop dipping into the atmosphere.

<http://www.spaceref.com/news/viewsr.rss.spacewire.html?pid=21902>

Astronomers Offer Proof of 'Dark Matter'

Astronomers say they have found the best evidence to date for "dark matter," that mysterious invisible substance that is believed to account for the bulk of the universe's mass.

<http://www.cbsnews.com/stories/2006/08/21/ap/tech/mainD8JL30I80.shtml>

High Altitude Clouds on Mars

ESA scientists have discovered some extremely high altitude clouds on Mars - between 80 and 100 km (50 to 62 miles) high.

<http://www.universetoday.com/2006/08/28/high-altitude-clouds-on-mars/>

Supernova caught in its exploding act

Teams of international scientists have used observations from NASA's Swift satellite and other telescopes to witness the evolution of a cosmic blast into a stellar explosion or supernova.

<http://www.cnn.com/2006/TECH/space/08/31/space.star.reut/index.html>

NASA names new moon spaceships Orion

The U.S. spaceships that NASA wants to build to carry astronauts back to the moon will be called Orion, an agency official said on Wednesday.

http://news.yahoo.com/s/nm/20060823/sc_nm/space_moonship_dc

Did the Earth Flip Over in the Past?

Scientists have found evidence that the Earth might have flipped over in the past, completely shifting the orientation of its poles.

<http://www.universetoday.com/2006/08/31/did-the-earth-flip-over-in-the-past/>

NASA selects crew, cargo launch partners

NASA is making an unprecedented investment in commercial space transportation services with the hope of creating a competitive market for supply flights to the International Space Station (ISS).

<http://spaceflightnow.com/news/n0608/18cots/>



Deadly Planets

By Patrick L. Barry and Dr. Tony Phillips

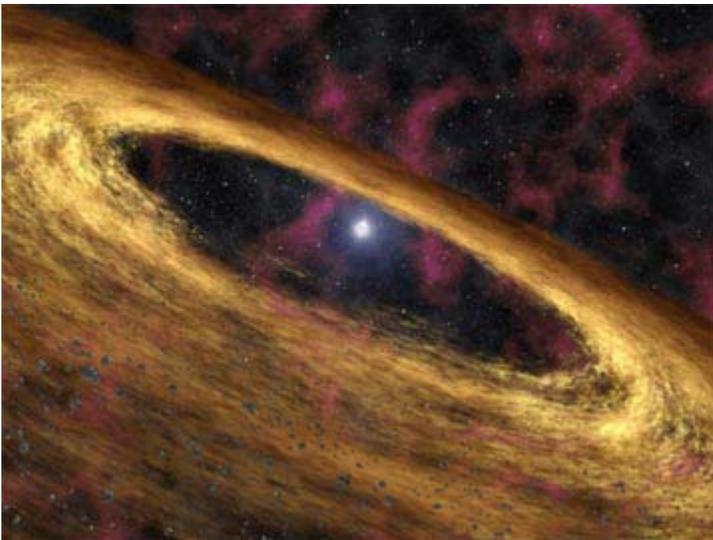
About 900 light years from here, there's a rocky planet not much bigger than Earth. It goes around its star once every hundred days, a trifle fast, but not too different from a standard Earth-year. At least two and possibly three other planets circle the same star, forming a complete solar system.

Interested? Don't be. Going there would be the last thing you ever do.

The star is a pulsar, PSR 1257+12, the seething-hot core of a supernova that exploded millions of years ago. Its planets are bathed not in gentle, life-giving sunshine but instead a blistering torrent of X-rays and high-energy particles.

"It would be like trying to live next to Chernobyl," says Charles Beichman, a scientist at JPL and director of the Michelson Science Center at Caltech.

Our own sun emits small amounts of pulsar-like X-rays and high energy particles, but the amount of such radiation coming from a pulsar is "orders of magnitude more," he says. Even for a planet orbiting as far out as the Earth, this radiation could blow away the planet's atmosphere, and even vaporize sand right off the planet's surface.



Artist's concept of a pulsar and surrounding disk of rubble called a "fallback" disk, out of which new planets could form.

Astronomer Alex Wolszczan discovered planets around PSR 1257+12 in the 1990s using Puerto Rico's giant Arecibo radio telescope. At first, no one believed worlds could form around pulsars—it was too bizarre. Supernovas were supposed to destroy planets, not create them. Where did these worlds come from?

NASA's Spitzer Space Telescope may have found the solution. Last year, a group of astronomers led by Depto Chakrabarty of MIT pointed the infrared telescope toward pulsar 4U 0142+61. Data revealed a disk of gas and dust surrounding the central star, probably wreckage from the supernova. It was just the sort of disk that could coalesce to form planets!

As deadly as pulsar planets are, they might also be hauntingly beautiful. The vaporized matter rising from the planets' surfaces could be ionized by the incoming radiation, creating colorful auroras across the sky. And though the pulsar would only appear as a tiny dot in the sky (the pulsar itself is only 20-40 km across), it would be enshrouded in a hazy glow of light emitted by radiation particles as they curve in the pulsar's strong magnetic field.

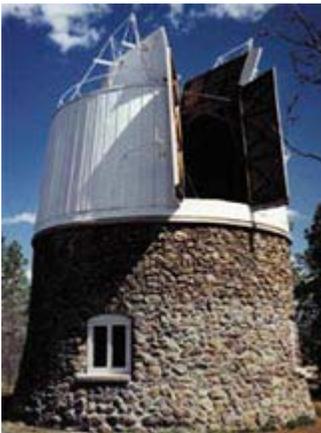
Wasted beauty? Maybe. Beichman points out the positive: "It's an awful place to try and form planets, but if you can do it there, you can do it anywhere."

More news and images from Spitzer can be found at <http://www.spitzer.caltech.edu/> . In addition, The Space Place Web site features a cartoon talk show episode starring Michelle Thaller, a scientist on Spitzer. Go to <http://spaceplace.nasa.gov/en/kids/live/> for a great place to introduce kids to infrared and the joys of astronomy.

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

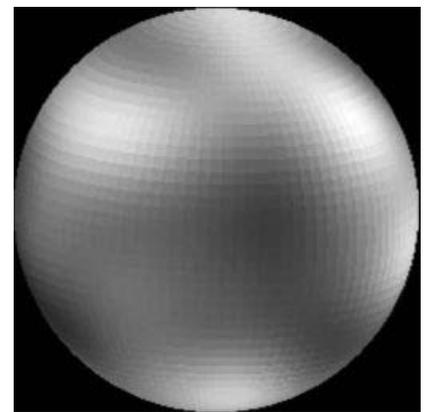
Did you know ? ? ?

In Roman mythology, Pluto (Greek equivalent Hades) is the god of the underworld. The planet received this name perhaps because it's so far from the Sun that it is in perpetual darkness. Pluto's satellite, Charon, is named for the mythological figure who ferried the dead across the River Styx into Hades.



The Pluto Dome

The observation dome at the Lowell Observatory that houses the 13 inch Lawrence Abbott telescope, known today as the "Pluto Discovery Telescope." Working from this dome Clyde Tombaugh discovered Pluto in the winter of 1930.



A global view of Pluto as calculated from many Hubble telescope photos throughout its rotation.

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://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)

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 "hi" to Matt and Sue.

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

Telguide: A supper guide to use with your star chart. www.actonaastro.com

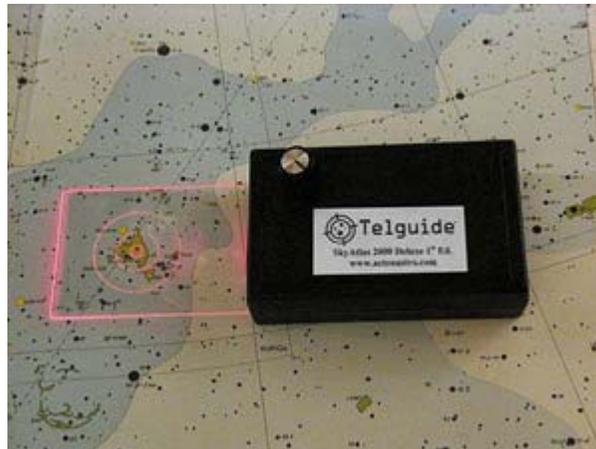
Astro-Tom: Tom is dedicated to amateur astronomy. www.astro-tom.com

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



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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.actonaastro.com>



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