



Desert Sky Observer

Volume 34

Antelope Valley Astronomy Club Newsletter

July 2014

Up-Coming Events

- July 09** Club Board Meeting
- July 11** Club Meeting
- July 19** Prime Desert Moon Walk
- July 26** Dark Sky Star Party TBA

* 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*



President
Frank Moore

Hello AVAC members,

I hope everyone had a great Summer Solstice on June 21. Just think, the longest day of the year has passed and we're now on the downhill slide toward winter with our days getting shorter. For us astronomers, that should be a good thing. A lot of us celebrated the Solstice with a Public Star Party at the Antelope Valley California Poppy Reserve. Rose had been working on getting this event together for some time and it finally came together too late to make mention of it in last month's Desert Sky Observer. We had a great turnout of both AVAC members and astronomers as well as members of the public looking for a view through our telescopes. California State Parks had the visitor's center open for several hours and it was generally a fun time.

Unfortunately, and as it seems has been the case for many of our events this year, the weather did not cooperate. The wind was blowing when we arrived and started to set up and what initially were just a few clouds on the horizon turned into an overcast covering much of the sky. Fortunately, we had a few bright planets in the form of Jupiter, Saturn, and Mars which we could show through the gaps in the clouds till a clearing sky, and diminishing winds, finally made it possible to view and share deep sky objects.

We had an interesting mix of telescope shapes and sizes with at least five Schmidt Cassegrains of various sizes and mount types and a whole army of dobsonian reflectors from 6" to 24". Matt Leone's 24" DOB was the big kid on the block and it was sucking those photons out of the sky much to the delight of the public. As for the public, they were curious, engaged, entertained, full of questions, and I think we showed and taught them a lot. I think we really fulfilled our charter to bring the beauty of the night sky to the families of the Antelope Valley.

Other June events included our annual repair and cleaning day at Two Goats Observatory on June 14 followed by our monthly event at Prime Desert Woodland the same night. Many dirty mirrors, corrector

Plates, and eyepieces left the repair day sparkling clean. Many members went to a multiple night Star Party at the Chuchupate observing site near Frazier Park starting on June 26 and continuing through the weekend. Since Rose and I were unable to attend I'll let those who were there give you a report.

Coming up in July is a Prime Desert Woodland event on the 19th and a Dark Sky Star Party on the 26th with a location yet to be determined. I encourage all members, with a big telescope, a little telescope, or no telescope at all to come out to all of our events for the friendship, fellowship, and to see the wonders of the night sky.

Remember, our annual "Star-B-Que", Picnic and Star Party, is at Brite Lake near Tehachapi on Saturday August 23 into the morning of Sunday August 24. Put it on your calendars and don't miss this awesome event Turn off some lights and enjoy the dark.

Frank



Vice President

Rose Moore

Our club summer picnic, Star-b-que, is coming up on Saturday, August 23rd, starting at 4pm. The place is at Brite Lake, Tehachapi. Map and directions will be available on the website. There will be a silent auction and raffle. Sign up sheets for the potluck will be available at the July and August meetings. Please sign up for a dish, or something on the list, and make sure you and any guest(s) are on the main list. This will also give us a head count as to how many members and guest(s) will be coming and we can plan accordingly for the meat and drinks. Afterwards there will be a public star party, so bring your telescopes, or come enjoy looking through other member's scopes!

Our speaker for July will be Diana Darus from JPL. The topic will be 'Roaming the Planet Mars with Unmanned Rovers'. Diana is an Avionics Systems Engineer at JPL. Diana is currently working on the SMAP Earth Mission, and also on the Mars 2020 mission. If you'd like to make a speaker donation, please see our Club Treasurer Virginia before the meeting or at the break after the presentation.

We have Chris Butler returning to speak in September. We are in the process of trying to get Wally Pacholka, Astrophotographer, to come to our August or November meeting, and I'll keep you posted. Thank you to all that have been supporting our public outreach in the last month or two!

Clear skies,

Rose



Director of Community Development

Don Bryden

Ahhh, August! The Perseids meteor shower, the club picnic and a last star party before it's back to school! Except it's not August, it's July. Hmmmm, still we'll be heading up to Chuchuate or Pinos for the dark sky star party and be sure to check out Rose's article above for info on the club meeting and our guest speaker Diana Darus, from JPL. We also have a nice outreach opportunity as the Prime Desert Moonwalk will be during a last quarter moon on the 19th at 8:30pm. Jeremy will lead another walk and the warm nights are sure to bring out a large crowd once again so come on the walk or set your scope up and share the views! In fact, due to a Cub Scout outreach we did last year at Lake Castaic we met Diana, this month's speaker, and talked her into talking to the club.

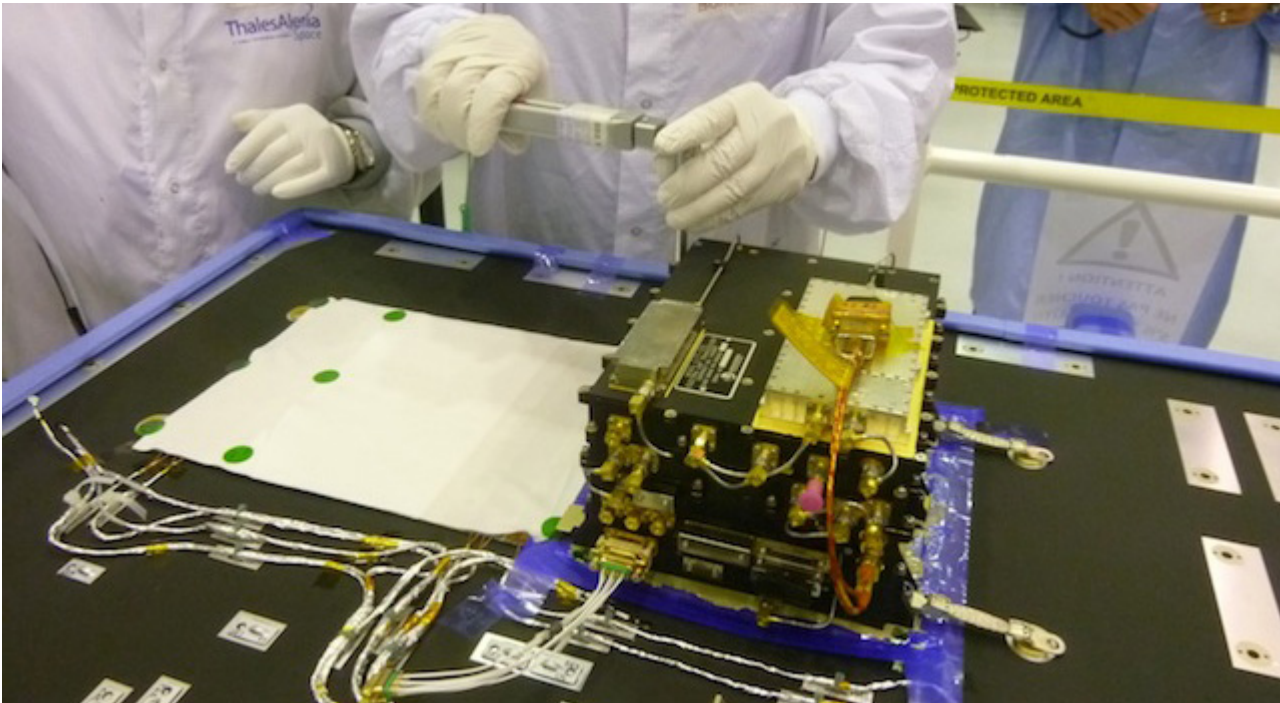
So, as I mentioned, we'll be up at Chuchupate or Pinos later this month. Let me say a few words in praise of Chuchupate. We had a nice turn out for the June star party up there and for the most part everyone seemed to like it. Bob Kemp and I rode up on Thursday and once again were clouded out (no hail, though). Friday night we were joined by Matt and Sue Leone as well as Inga Nagel, Bob Ayers and Glenn with a few others from the Local Group. You may recall how windy it was that weekend but up there – not a problem! It was clear skies and less than five knots of wind.

Another nice feature of Chuchupate is the great views to the horizon. In fact, just for a few minutes, in a notch in the far hills, Omega Centauri made a brief appearance. You won't get that at Mt. Pinos with all those pine trees! Matt had the LoonyScope working and showing some great views as he worked through Brent Watson's "Overlooked Objects". Bob K was working on the Messier list and had his choice of scopes for viewing with three (count 'em, three!) scopes set up – a 12" Telekit, a 10" Meade Lightbridge and the 16" Orion. With my Footscope and Matt's 24" it was "Land of the Dobs"!

Matt stayed until Monday but said the only drawback was that it gets a bit lonely. Mt. Pinos does have a lot more campers for sure! Still, Chuchupate is closer, with better views and skies that are at least as steady if not just as dark as Pinos. Well, either way, I hope to see everyone out under the stars!

News Headlines

NASA Radio Delivered for Europe's 2016 Mars Orbiter



The European Space Agency's ExoMars Trace Gas Orbiter, being assembled in France for a 2016 launch, will carry two Electra UHF relay radios provided by NASA.

Credit: NASA/JPL-Caltech/ESA/TAS

July 02, 2014

The first of two NASA Electra radios that will fly aboard the European Space Agency's next mission to Mars has been delivered for installation onto the ESA ExoMars Trace Gas Orbiter (TGO).

The TGO is being assembled at Thales Alenia Space, in Cannes, France, for a 2016 launch opportunity. It will study the Martian atmosphere for the presence of methane and other gases that may be present in small concentrations. It will also deploy the ESA Schiaparelli Mars landing demonstration craft and provide communications support for ESA ExoMars Rover and a Russian Lander planned for launch in 2018.

Twin Electra ultra-high frequency (UHF) radios on the TGO will provide communication links with robots on the Martian surface -- rovers or landers. Relay of information from Mars-surface craft to Mars orbiters, then from Mars orbit to Earth, enables receiving much more data from the surface missions than would otherwise be possible.

"We are fortifying our partnership with Europe to strengthen the Mars relay network together," said Phillip Barela of NASA's Jet Propulsion Laboratory, Pasadena, California, project manager for NASA's participation in ExoMars.

The Electra radio design from JPL includes special features for relay use between an orbiter and a rover or stationary lander. For example, it can actively adjust the data rate during a communication session -- slower when the orbiter is near the horizon from the surface robot's perspective, faster when it is overhead.

NASA's Curiosity Mars rover and Mars Reconnaissance Orbiter already use Electra technology for relay of data. A NASA orbiter currently on the way to Mars, the Mars Atmosphere and Volatile Evolution (MAVEN) spacecraft, also carries an Electra radio. Plans call for the TGO to use its Electra radios for communication with ESA's 2018 ExoMars Rover and Russia's Lander as well as with NASA's 2016 Mars lander and 2020 Mars rover. The first Electra radio for the TGO was delivered June 17, 2014. The second is on track for delivery in September.

The planned orbit for the TGO is an advantageous one for providing relay duty. It is similar to the Mars Reconnaissance Orbiter's at about 250 miles (400 kilometers) in altitude and nearly circular in shape. The mission will make use of Earth-based radio antenna networks operated by ESA, NASA and Russia.

JPL, a division of the California Institute of Technology in Pasadena, manages NASA's role in the ESA ExoMars program for the NASA Science Mission Directorate, Washington.

For more about the ExoMars Trace Gas Orbiter, visit: <http://exploration.esa.int/mars/46475-trace-gas-orbiter/>

Astrophoto of The Month



Courtesy: Don Bryden
Two Goats Observatory

July Sky Data

First Qtr
Jul 4

Full
Jul 12

Last Qtr
Jul 19

New
Jul 26

Best time for deep sky observing this month:
July 21 through July 31



Sandstone Target 'Windjana' May Be Next Martian Drilling...

NASA's Curiosity Mars rover has driven within robotic-arm's reach of the sandstone slab at the center of this view.



Sun and Moon Rise and Set

Date	Moonrise	Moonset	Sunrise	Sunset
7/01/2014	09:46	22:47	05:45	20:09
7/05/2014	13:25	00:23	05:47	20:09
7/10/2014	18:29	04:01	05:50	20:08
7/15/2014	22:31	09:40	05:52	20:06
7/20/2014	01:06	14:55	05:55	20:03
7/25/2014	05:01	19:03	05:59	20:00
7/31/2014	10:22	20:25	06:04	19:56

Planet Data

Jul 01

	Rise	Transit	Set	Mag
Mercury	08:13	13:19	18:48	-0.6
Venus	03:44	10:48	17:52	-4.3
Mars	13:40	19:21	01:05	1.3
Jupiter	07:05	14:08	21:14	-1.9
Saturn	15:52	21:13	02:38	1.1

Jul 15

	Rise	Transit	Set	Mag
Mercury	04:25	11:31	20:36	2.4
Venus	03:54	11:04	18:16	-4.4
Mars	13:15	18:49	12:26	1.3
Jupiter	06:24	13:27	20:30	-1.9
Saturn	14:56	20:17	01:42	1.0

Jul 31

	Rise	Transit	Set	Mag
Mercury	05:27	10:40	15:54	0.6
Venus	04:15	14:59	18:36	-4.5
Mars	12:53	18:18	23:42	1.3
Jupiter	05:39	12:39	19:40	-1.9
Saturn	13:54	19:14	00:39	0.9

Planet, Sun, and Moon data calculated for local time at Lancaster, CA

A.V.A.C. Information

Membership in the Antelope Valley Astronomy Club is open to any individual or family.

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 publication of the Astronomical League.
- The A.V.A.C. Membership Manual.
- To borrow club equipment, books, videos and other items.

AVAC

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Visit the Antelope Valley Astronomy Club website at www.avastronomyclub.org/

The Antelope Valley Astronomy Club, Inc. is a 501(c)(3) Non-Profit Corporation.

The A.V.A.C. is a Sustaining Member of The Astronomical League and the International Dark-Sky Association.

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