The Observer

SAN BERNARDINO VALLEY AMATEUR ASTRONOMERS
Member of The Astronomical League
http://sbvaa.org/

Volume #58, Issue 9 **Since 1958** **September, 2016**

Meeting:

September 17, 2016

Location:

First Christian Church
2102 E. Foothill Dr.
San Bernardino, CA

7:00 p.m.

Pre-meeting Dinner,
5:00 to 6:30 p.m.,

Pepper Steak Restaurant
26589 Highland Ave.
Highland, CA

After the meeting telescopes will be set up for viewing and members will be available to answer questions. Bring your telescope to observe with us.

No telescope is too humble, and beginners are always made welcome!

Program

Viewing the Milky Way

This month we welcome our own Mike Ratcliff as our program speaker. The following are Mike's own words about his presentation.

"As a long-time observer of deep sky objects (open clusters, globular clusters, galaxies, nebulae, Messier list) I wanted to learn more about the Milky Way itself and what it is that we are actually seeing when we are looking at our galaxy This was inspired by 3 articles in Sky and Telescope Magazine by Craig Crossen.

Presented first is an overview of the Milky Way structure and major spiral arms. Then how a few of the major star clouds, dark lanes, and deep sky objects that are visible to us fit into the picture. Plus one (surprising to me) local Milky Way structure that I had not heard of. Finally a few hints on where to observe and what instruments are favored. And just a note, there is no super dim, nearly impossible stuff. Everything is observable with just your eyes, binoculars, or small telescopes, assuming reasonably dark skies such as Oak Glen or Johnson Valley."

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Calendar of Upcoming Events

Sept 3, Outreach/Star Party, Pioneer Town

Sept 23, Outreach, Smiley School, Redlands

Sept 30 - Oct 2, Grandview

Oct 15, Club Meeting

Oct 30, Star Party (location TBA)

Nov 12, Club Meeting

Nov 26, Star Party (location TBA)

Dec 3, Annual Holiday Get-together
(details TBA)

Other star parties, outreaches and events for 2016, TBA

2016 Night Sky Festival
Joshua Tree National Park

October 28 - 30, 2016

We're now two months out from our 2016 Night Sky Festival, and I wanted to check in with you to see if you were interested in coming out to set up some telescopes. We can reserve campsites for any volunteer astronomers down at the Cottonwood Campground. Let me know if you're interested. Hopefully the weather will be better for us this year!

Best regards,

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Beth Hudick
Park Ranger, Interpretation
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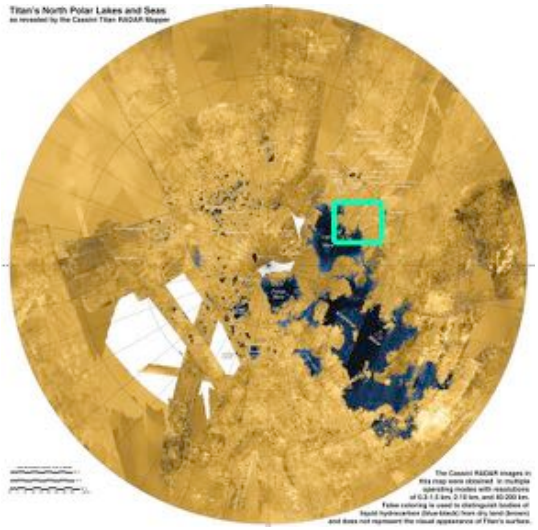
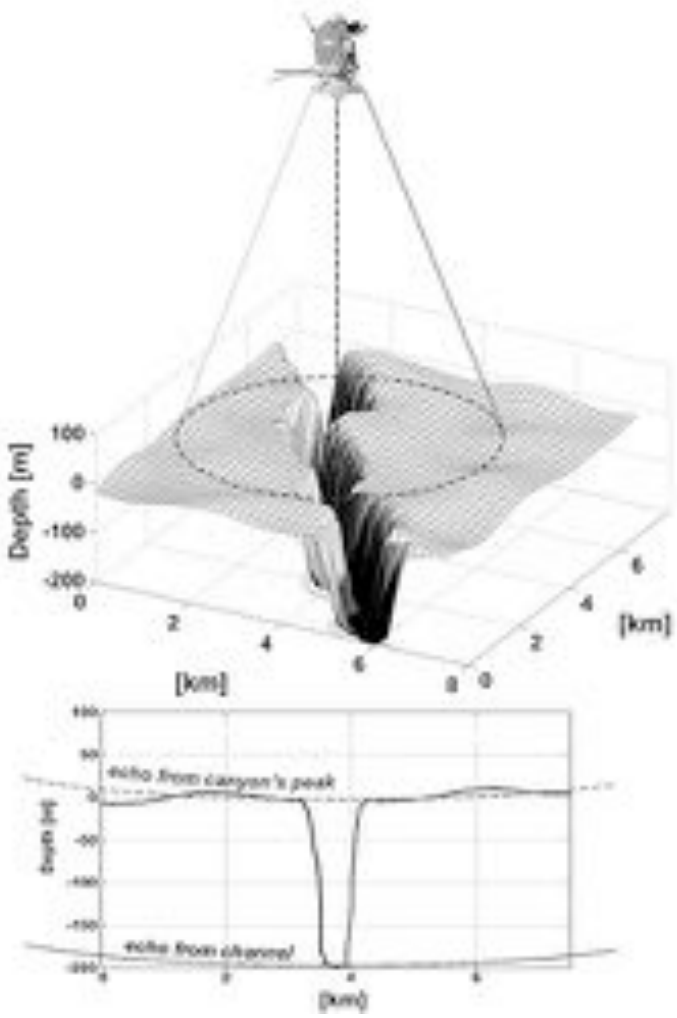
Liquid Filled Canyons on Titan

The Saturnian moon Titan looks a lot like Earth. Seas, deltas, dunes — even hints of fog and rain. Except, it's so cold on Titan that water is rock-hard ice; the liquid here is made of hydrocarbons, particularly methane.

Planetary scientists know that the seas on Titan are filled with methane, ethane, and perhaps other, similar compounds. They've also seen sinuous, river-looking channels that extend for hundreds of kilometers across the moon. One drainage network in particular, Vid Flumina, connects to Titan's second largest sea, Ligeia Mare. Its channels look dark in radar images, leading researchers to suspect they're filled with liquid. But scientists hadn't proved that was the case.



Valerio Poggiali (University of Rome) and colleagues have now done just that. Using radar images from NASA's Cassini spacecraft, which arrived in Saturn's neighborhood in 2004, the team did soundings of the features' depths. The scientists found that the wiggly dark lines are in fact deep, steep-sided canyons, plunging up to 570 meters (1,870 feet) down. For comparison, the Freedom Tower in New York City rises 1,776 feet into the sky (if you count the beacon on top). To reveal the canyon's depths, Cassini's radar altimeter pinged the moon's surface and the signals echoed back, enabling scientists to map Titan's terrain.



V. Poggiali / Geophysical Research Letters (DOI: 10.1002/2016GL069679)

The observations also caught reflections off smooth, presumably liquid surfaces at the bottom of the canyons. (I say presumably, but the flatness required is on the millimeter scale, so that's pretty surely a liquid surface.) How deep that liquid is remains unknown.

The result is the first direct detection of liquid-filled channels on Titan, the team reports August 9th in *Geophysical Research Letters*.

(*You can read more about the discovery in JPL's press release, or the release from the American Geophysical Union.*)

Club Star Party, Wildlands Conservancy, Oak Glen, August 6, 2016

We had a small turn out, about a dozen, but a good time was had by all.

Chris & our intrepid staff photographer Robin. Many of our candid pics are her work. A big thanks to her!