



The Observer

SAN BERNARDINO VALLEY AMATEUR ASTRONOMERS

Member of The Astronomical League

<http://sbvaa.org/>



Volume #61, Issue 12

Since 1958

December 2019

Meeting:

December 7, 2019

Location:

Shakey's Pizza
836 W. Colton Ave.
Redlands, CA

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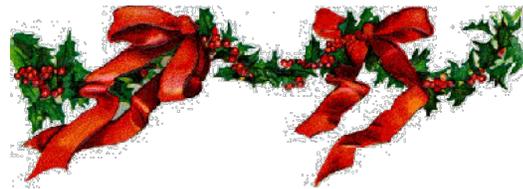
Program

Annual Holiday Party Members & Families

Saturday, December 7th

between 3 and 5:00 pm.

Shakey's Pizza
836 W. Colton Ave.
Redlands, CA 92373
909-793-5993



There will also be a **Gift exchange**. For those wishing to participate please bring a nice wrapped gift..... 'value not to exceed \$15.00, unless of course you're feeling some extra holiday spirit in which case the sky's the limit



SBVAA Officers

President: Jamie Countryman

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Treasurer: Fidel Hernandez 909-864-0615

Secretary - Educational Outreach: Chris Clarke
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Club Website: SBVAA.org



Calendar of Upcoming Events

Dec. 28, Star Party, Pioneer Town

Jan. 11, Club Meeting

Jan. 25, Star Party, Pioneer Town

Feb. 1, Outreach, S.B. County Museum

Feb. 4, Outreach, Wildwood School,
Yucaipa

Feb. 8, Club Meeting

Feb. 22, Star Party, Pioneer Town

Mar. 7, Club Meeting

Mar. 28, Outreach, Whitewater

Apr. 4, Club Meeting

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2020 Calendars

Fidel has a supply of Astronomy Magazine's 2020 calendars for sale — discounted from what you can buy them for elsewhere. See Fidel before or after the meeting. These make great gifts for the astro-minded person or for anyone who enjoys the beauty and wonder of the universe.



Club dues will be \$40 for an individual or family membership beginning in January. The change was voted on in a club meeting several months ago.

SBVAA has never been a “wealthy” club — at least in terms of money. However, various club expenses have increased and a little extra cash in the kitty may help us to bring in a guest speaker now and then.

Club Members What Do You Want?

For the last decade at least, your club's meetings have consisted of "business" (star party/outreach reports, calendar updates & treasurer reports) and an astro-educational video generally followed by some casual observing. While many of the videos were excellent a number of you said you were tired of watching them. So that brings up the question of — *"what do you want in the way of programs?"* Being a club of limited resources, we can't bring in big-name speakers like Neal deGrasse Tyson or Alex Filippenko. The videos, however, did make it possible to learn from them, albeit via e-media.

So let's hear it from you. What do you want? E-mail your ideas to Jamie, Chris or your newsletter editor via the URLs shown above. We three plus Tom, Fidel et al. want to keep our club relevant, active and exciting. BUT... we need to know what you want in the way of programs.

Speak up... it's your club.

Wisdom Is Where You Find It

Sometimes you find it on a tee-shirt. So, gentle reader, I offer the following for a little holiday humor.

"Never trust an atom — they make up everything"

"The universe is comprised of protons, neutrons, electrons and morons"

"Statistics means never having to say you're certain"

"Only two things are infinite, the universe and human stupidity, and I'm not sure about the former"

"Bacteria: It's the only culture some people have"

"Math illiteracy affects 7 out of every 5 people"

"When did my wild oats turn into shredded wheat?"

First Direct Measurement of Water Vapor in Europa's Atmosphere

(Astronomy Mag. on line, Nov. 18, 2019)

Recent studies have turned up indirect evidence that erupting plumes inject water vapor into the moon's atmosphere. Studies in the past decade have even spotted signs of hydrogen and oxygen in Europa's atmosphere, but not water vapor directly.

In the new study, researchers used a telescope at the Keck Observatory in Hawaii to search Europa for specific infrared wavelengths of light that water vapor would emit. They observed the moon on 17 different dates from February 2016 to May 2017. Their instruments didn't pick up signs of water vapor on 16 of those nights. But on April 26, 2016, they measured a large amount — roughly 2,000 metric tons — of water vapor.

overall, the measurements imply that the typical amount of water vapor in Europa's atmosphere is probably less than previously thought. This also means that the standout April 2016 measurement likely came from a one-time event, like a water plume. Upcoming space missions, like Europa Clipper and JUICE (JUPiter ICy moons Explorer), will get a closer look at the moon.

Mercury Transit Captured

Our own Star Party Co-ordinator, Tom Lawson, used his “rig” we saw at the last club meeting to capture several photos of tiny Mercury across the face of the Sun. Thanks for sharing Tom!

