



The Observer

SAN BERNARDINO VALLEY AMATEUR ASTRONOMERS

Member of The Astronomical League

<http://sbvaa.org/>



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Since 1958

September, 2017

Meeting:

September 9, 2017

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.,

Jenny's Family
Restaurant
7750 Palm 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

Great American Eclipse Show & Tell



September's club program will be by you, our members. The idea is to share your eclipse experiences. Whether you "went north" or stayed at home, we want you to share your stories, photos, videos -- whatever you have, even just the memory of watching.

While the U.S. will enjoy another total solar eclipse in 2024, it will only be visible in the southern states up through eastern Canada. This year's track won't repeat for another 325 years!

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Calendar of Upcoming Events

Sept. 16, Outreach, Oak Glen

Sept. 22 24, *Star Party, Grand View*

Oct. 7, Club Meeting

Oct. 21, Outreach, White Water

Oct. 28, Outreach, Pioneer Town

Nov. 5, Daylight Savings Time Ends

Nov. 18, Star Party, location TBA

Dec. 2, Annual Club Holiday Party
Shakey's Pizza, Redlands

Dec. 16, Star Party, location TBA

10 Minute Astronomy

Matt Wedel, former SBVAA member and now a contributing editor to *Sky & Telescope* has a very nice website with the above name. The sub-title is "Stargazing for people who think they don't have time for stargazing." Check it out. Just add ".com" to the above title and click.

Matt and his contributors have posted a number of informative articles that will be interesting to the newbie or the old timer alike. Everything from building a Saturn V rocket model out of Legos to restoring a vintage Tasco/Vixen 60mm f/5 scope.

SBVAA was fortunate to enjoy Matt's company for a couple of years before the drive from Covina got to him. But we can still enjoy his "*Binocular Highlights*" each month in *Sky & Tel*.



It's been reported that everyone who attended the club's annual BBQ had a great time. I only wish I had more room for more of Pam's photos. The cake was over the top.

Inside of Supernova Mapped!

From *Astronomy*,

by Megan Ray Nichols



If you are lucky enough to see a supernova, it probably occurred in a different galaxy. The Milky Way has plenty, but they're much harder to see here thanks to the dust, gas, and other astronomical objects blocking our view. They're still the brightest, most exhilarating explosions that occur in our galaxy. A single [supernova](#) can appear brighter than the galaxy it resides in for a period of time, making it the brightest object in the sky after the initial explosion.

While we think we have a good understanding of how supernovae form, we don't have a good grasp of what happens inside them. This is mainly due to the fact that we've never been able to observe one from the inside, or even up close — which is good; you do not want to be inside one because you'd be dead. What we do know is that the largest explosions in the known universe put physics in some weird predicaments. They pop out new elements that make up everything else, including you and me. When you hear someone say that you're made of star stuff, they aren't making that up. The deaths of stars have given us every naturally occurring element in creation. So it's understandable that astronomers want to find out what happens.

Astronomers have continued to observe the changes in a supernova observed in 1987, called SN 1987A, located in the Large Magellanic Cloud. SN 1987A is an optimal candidate to study since it's not yet strongly affected by its surroundings.

Because the telescopes work together at short sub-millimeter wavelengths, they are able to create the highest-resolution images. The inner core of SN 1987A previously eluded astronomers because gas and dust blocked out other methods of observation. ALMA's ability to see these fine details helped astronomers finally see past the obstructions. Then, they created 3-D maps of the elements and molecules found within the collapsed supernova with the data collected. In the last 30 years, SN 1987A had time to cool down and start forming new molecules. Now we have the first results of what kinds of elements form as the result of one of these explosions.

Scientists observed the formation of numerous elements, including carbon, nitrogen, and oxygen, as well as more complex molecules. These were [carbon monoxide, silicon monoxide, and formylium](#). This leads to a whole new way to understand the physics and chemistry of supernovae. Since molecules and elements were created during this supernova, scientists may have to reevaluate their expectations for the stars.

These explosions might be capable of more than we thought.

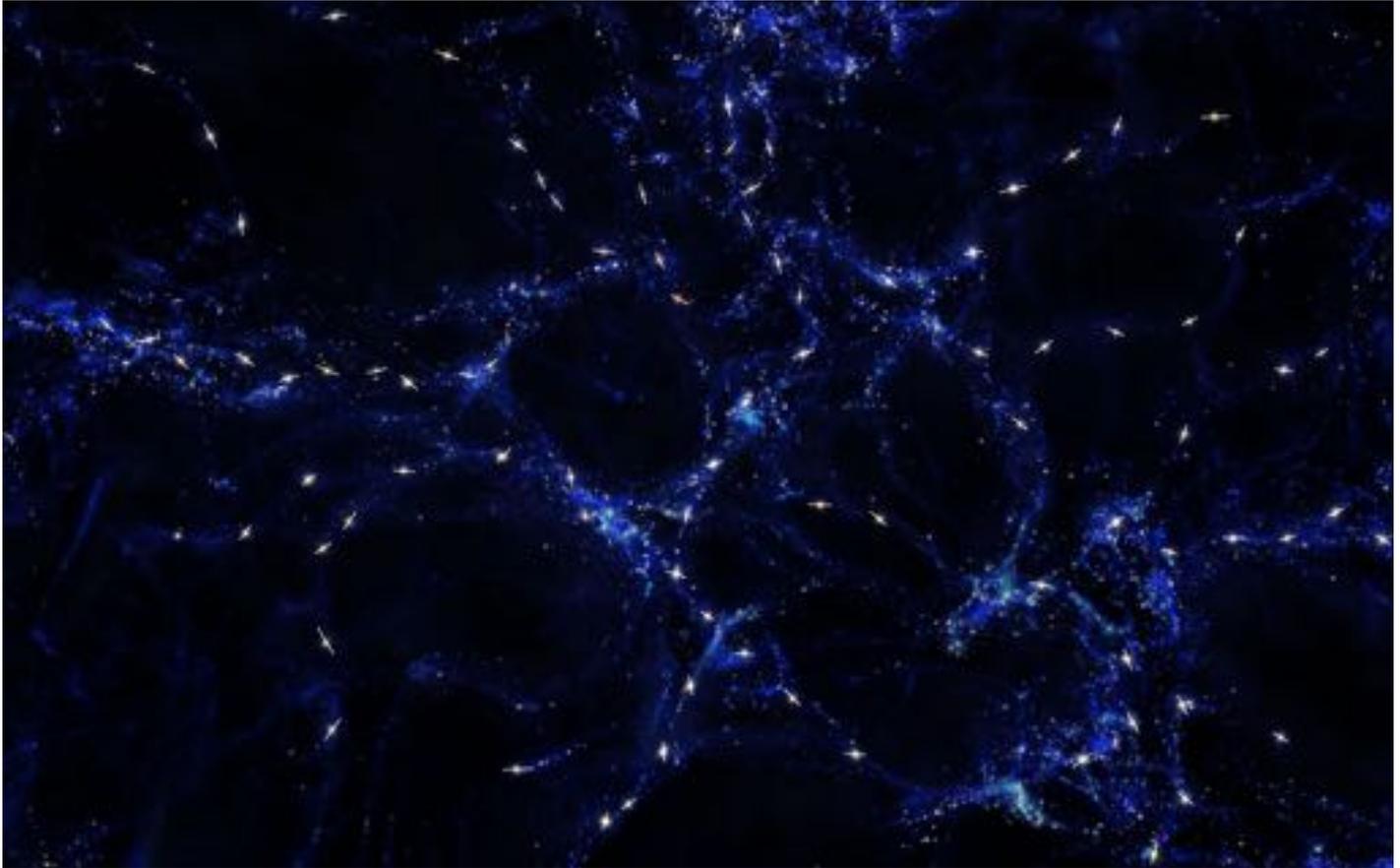
(For more information go to: [Astronomy.com](#))



A Surprising Alignment of Quasars Across The Universe

From: oneminuteastronomer.com

By Brian Ventrudo



Artist's conception of the alignment of quasars over the vast filaments that are home to galaxy clusters spread across billions of light years (credit: European Southern Observatory)

In a remarkable discovery, astronomers using ESO's Very Large Telescope (VLT) in Chile have discovered that quasars separated by billions of light years are aligned parallel to each other, as if they were under the influence of an unseen mechanism that gets them pointing in the same direction. This mechanism seems to be related to the largest-scale structures in the universe, the vast filaments of galaxy clusters that form around voids and bubbles where very few galaxies are found.

Some models of the large-scale structure of the universe predict a degree of alignment. But this study, which is the first to confirm this prediction, shows the effect on a much larger scale. So astronomers have a new puzzle on their hands as they wrestle with what causes the alignment of these energetic galaxies over billions of light years.

Job security for scientists may suffer the whims of funding agencies. But there are always new questions to answer as astronomers observe the universe on its largest scale.

<http://oneminuteastronomer.com>