



# The Observer

SAN BERNARDINO VALLEY AMATEUR ASTRONOMERS

Member of The Astronomical League

<http://sbvaa.org/>



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Since 1958

May, 2017

## Meeting:

May 13, 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.,

★ *New!* ★

**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

### The Old Club Scope

Jamie and Megan have prepared a great Power Point presentation on a “classic” dobsonian reflector. Jamie has spent a great deal of time completely rebuilding the instrument to be a model telescope for Scott Freeman, who now owns the scope.



This scope was originally the “club dob” built back in the 1980’s for member and outreach use. It has now been completely rebuilt and “modernized” while still keeping certain key pieces of the original instrument in place. The history of the scope and its evolution will also be described.

The scope will be on display at the meeting and then set up for observing afterwards.

## SBVAA Officers

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## Calendar of Upcoming Events

May 2, Outreach, Mariposa School

May 4, Outreach, Dunlap School

May 7, Outreach, Pioneer Town

May 13, Club Meeting

June 10, Club Meeting

June 23 - 25 *Grand View Star Party*

July 8, Summer Social at the Sizzler

July 22, Star Party, Oak Glen

August 5, Annual Club BBQ

## Magical Night

By Jim Sommer

Sometimes you can catch a break between weather patterns and have a rare, near perfect night of observing. Our club had scheduled a Star Party for March 25, at the Wildlands Conservancy location in Oak Glen. I had wanted to go but the weather seemed to be a bit chancy at the site so, on a whim, I checked the forecast for Joshua Tree N.P. The 25th showed it also to be "iffy" at J-Tree for that Saturday but clear on Sunday & Monday.

One of the advantages of being retired is the ability to pick and choose any dates you want to go somewhere. I opted for J-Tree. I was hoping for good conditions because I wanted to see how my C6SE would perform under dark skies. (So far I had only used it under urban skies at school outreaches.) Once encamped on the 26th, and after setting up the scope, I walked both loops of the Cottonwood site inviting my fellow campers to come and see the wonders of the night sky -- I think I suddenly became the most popular guy in camp. Both nights combined, I hosted nearly 50 people.

Saturday night was indeed magical. Seeing was about 9/10 with 10/10 transparency. Even the evening temperature was mild requiring only a light vest. The little C6 exceeded all my expectations, especially on M81 & 82 and on Jupiter. On Monday afternoon the wind began to slowly increase. Observing was just "okay" until about 2300 when it really picked up -- 25 mph and gusts to 40+ mph. Lots of dust and atmospheric turbulence. But Saturday night's session made it all worthwhile! Truly magical!

## Earth Day & The Moon

From SSERVI\*

It is no accident that the first Earth Day (1970) occurred a few months after the first Apollo landing (1969). Views of whole Earth hanging in space as a singular home for all humanity were generated by the Apollo 8 crew when they made their pioneering orbit of the Moon and by subsequent lunar missions, including the famous “Earthrise” view of Apollo 11 and the final view from Apollo 17 that NASA often uses to describe Earth as an “isolated ecosystem floating in space.”



Having witnessed the beauty of those views, NASA has continued to capture images from space and created the stunning “Blue Marble” views of our planet.

\*SSERVI is the Solar System Exploration Research Virtual Institute. It is the successor organization to the NASA Lunar Science Institute. SSERVI fosters collaborations within and among competitively selected domestic teams, the broader exploration science community, and multiple international partners.

SSERVI provides scientific, technical and mission-defining analyses for relevant NASA programs, planning and space missions, including:

- The role of the Moon, Near Earth Asteroids (NEAs), Phobos & Deimos in revealing the origin and evolution of the inner Solar System
- Moon, NEA, and Martian moon investigations as windows into planetary differentiation processes
- Near-Earth asteroid characterization (including NEAs that are potential human destinations)
- Lunar structure and composition
- Regolith of Target Body(s)
- Dust and plasma interactions on Target Body(s)
- Volatiles (in its broad sense) and other potential resources on Target Body(s)
- Innovative observations that will advance our understanding of the fundamental physical laws, composition, and origins of the Universe



Learn more about SSERVI and its work by checking in at its website:

<https://sservi.nasa.gov/overview/>

## Diabolical Distraction!

Your editor recently received an e-mail from the folks at Astronomy Magazine offering the puzzle below. Just one look was all it took to consider what fiendish mind would come up with a puzzle like this. The Tarantula Nebula in 550 pieces?! What a “mind bender” it would be!

### ASTRONOMY EXCLUSIVE Star Cluster JIGSAW PUZZLE



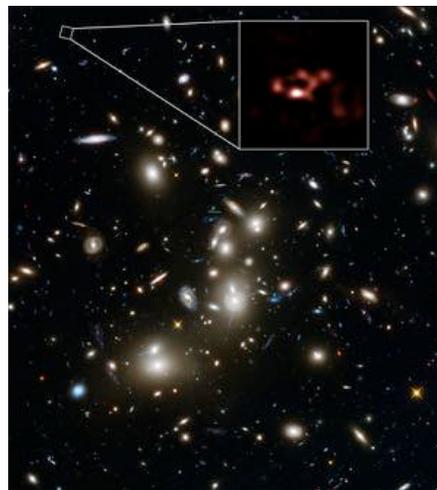
Stargazers and jigsaw lovers alike will enjoy completing this beautiful puzzle. The **high-resolution image** — one of the most stunning space images of 2016 — shows the rich, swirling colors of the **Tarantula Nebula and dazzling stars of open star cluster R136**, located in a satellite galaxy to our Milky Way. The finished **18" x 24" puzzle** is perfect for framing and hanging in a classroom or office.

## Origins of Star Dust

by Alison Klesman for Astronomy Magazine

Astronomers have spotted dust from some of the universe’s earliest supernovae, which are responsible for the elements in our Sun and solar system today. Discovered by ALMA (Atacama Large Millimeter/submillimeter Array) the galaxy is called A2744\_YD4, and it’s the most distant galaxy ever found by ALMA. It sits at a redshift of 8.38, which is associated

with a time when the universe was just 600 million years old.



A2744\_YD4 is full of dust. In the [press release](#) accompanying the announcement, Laporte explained that “the detection of so much dust indicates early supernovae must have already polluted this galaxy.” Supernovae are the end result of massive stars, which blow away much of their interiors explosively as they die. Among the material blown away is dust, which is made up of elements such as aluminum, silicon, and carbon, and is spread across galaxies by these explosions. This dust is an integral component of today’s stars (like our Sun) and the planets surrounding them. In the very early universe, however, this dust was scarce, simply because the process of its creation and dispersion via supernovae hadn’t had much time to complete.

But in A2744\_YD4, this process has apparently had enough time to progress. A2744\_YD4 produces stars at a rate of 20 solar masses per year, which is a full 20 times the rate of our Milky Way’s comparatively paltry star formation rate of 1 solar mass per year. Based upon this rate, the group estimated that only about 200 million years were needed to form the dust seen in A2744\_YD4.

*(For the full story, see Astronomy Magazine, online issues, March 8, 2017)*

