# An Array of Telescopes

As a nonprofit organization, SVO is growing stronger and more capable year by year. Generous local residents have gifted a number of fine telescopes to us, empowering our night sky interpreters to awaken the sense of awe. Some of these are in use today for our star parties and educational events, while others are quite large and will be put into continuous service at our observatory facility when it is constructed (more on that below!). Among the very first of these gifts was a 4" Orion refractor on an equatorial tripod mount donated by Ed Sheridan, and an Alt-Az fork-mounted 12" LX200 Schmidt-Cassegrain made by the Meade Corporation and gifted to SVO by Mr. and Mrs. Jack Tillinghast. Jack's telescope with its robust tripod mount is also suitable for use as a pier-mounted scope. As we approach the end of the year, we wish to express our gratitude to all those who have provided SVO with these precious observing instruments, enabling us to further enhance memorable night sky experiences for all whom we serve!

SVO recently received a large telescope suitable for permanent installation on a concrete pier inside its future observatory. The 14-inch fork mounted Schmidt-Cassegrain telescope made by Celestron was originally purchased for Southern Utah University's Ashcroft Observatory in Cedar City where for decades it provided students, community members, youth groups and visitors with views of the heavens not available anywhere else in Southwest Utah. Students enrolled in SUU's physics and astronomy programs got hands-on experience with the telescope at Ashcroft. Recently, when SUU purchased their new telescope for the observatory, the original instrument was replaced and has now found a new home at Stellar Vista Observatory where it will remain on permanent loan.



*SVO's 14-inch fork-mounted Celestron Schmidt-Cassegrain telescope on permanent loan from Southern Utah University. Photo by Michael McKeon, SVO.*

Also this year, a 12-inch SkyWatcher Flextube 300P was donated by local resident and business owner Rob Pearman. An animal lover, Rob named the telescope "Neptune" after one of his favorite pet cats. "I hope this telescope sparks curiosity and wonder in everyone who looks through the eyepiece," says Rob. Neptune is currently in use for star parties and other educational events. A photo of Rob's telescope in action is in our star party roundup article below.

Just a year ago, SVO was graciously gifted the largest portable telescope in our collection from the estate of John Mosley, formerly program director at the Griffith Observatory in Los Angeles, CA. In his closing years as a professional astronomy interpreter, John was an esteemed member of SVO's Advisory Committee and author of our much loved series of weekly sky reports. His 18-inch Dobsonian Starmaster is capable of rendering extraordinary views of the most distant galaxies and nebulae.



*SVO's 18-inch Starmaster. Photo by Michael McKeon, SVO.*

Once these and other fine telescopes in its collection can be put into service, SVO will have exceptional capabilities to reveal a wider range of deep sky objects in startling detail; ones far beyond the reach of the small and medium sized instruments currently employed. Our growing community of night sky enthusiasts will surely be delighted!

## Geminid Meteor Shower Lights Up the December 13 Star Party

The December 13, 2025 star party was amazing! Not only did we get crystal clear skies, but the Geminid Meteor Shower provided plenty of entertainment. Approximately 25 people gathered at the Jackson Flat Reservoir to view the Geminid Meteor Shower, Saturn, the Andromeda Galaxy and other celestial objects through SVO's telescopes. Three telescopes provided views, including "Neptune", the 12-inch SkyWatcher mentioned above.



*Local and visiting stargazers on December 13 with "Neptune". Photo by Eric Sims, SVO.*

## Share your star photos with us!

We love taking photos of the night sky, and we know you do too! If you have a great star or night sky photo that you would like to share with our audience, we would love to include it in our monthly newsletter. Please send your photos to info@stellarvistaobservatory. along with your name and the object(s) in the photo.

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## Construction Updates

### New Grant Awards Total $50,000!

In November 2025 assistance with financing the installation of utility electric power to SVO's observatory site at Jackson Flat Reservoir came through the Kane County Economic Opportunity Board, with $25,000 being awarded to SVO by a unanimous vote of the Kane County Commission. An additional $25,000 was awarded to SVO's observatory project by the Board of Directors at Garkane Energy. The combined total of $50,000 will help offset the full estimate of nearly $70,000 for the new electric service. These commitments of support followed well-received informational presentations by SVO outlining the scope of the observatory project and its myriad educational benefits for communities across southern Utah and the Arizona Strip.

Even with the fabulous support from Kane County and Garkane Energy, **SVO still needs to raise $19,000 additional dollars to bring electricity to Kanab's future observatory site.** This is where you can make a real difference! Please consider an end-of-year donation to support this urgent need. Gifts of any size will be welcomed by check or via the SVO website at: Donate | Stellar Vista Observatory

### Building Permit Update

An additional layer of engineering required for the issuance of a building permit by the City of Kanab has been undertaken. Once completed, and with its building and health department permits secured, SVO will be positioned to seek bids for construction of its new astronomical observatory. Such an exciting and unique development project for the residents of Kane County, steadily drawing closer to a groundbreaking!

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## What is the Geminid Meteor Shower?

*-Ella Elman, SVO*

If you had the opportunity to look up at the night sky over the past week, you would have been treated to a plethora of shooting stars, sometimes several each minute, courtesy of the Geminid meteor shower. The Geminid shower occurs in December each year, typically peaking around December 13th and 14th. It is known for being one of the most active with an hourly rate between 100 and 160 meteors under optimal conditions. The shower is active from about Thanksgiving to Christmas.

This got me wondering about the mechanics of this event. How is it that we have this reliable meteor shower each year and where do the particles hitting our atmosphere come from?

Meteor showers occur when Earth's orbit intersects debris left by comets or asteroids. In this case, every December, Earth crosses the debris trail of asteroid 3200 Phaethon. Comets and some asteroids shed dust and small rocks as they orbit the Sun. That debris spreads out along the Sun's orbit and forms a thin meteoroid stream, which remains gravitationally stable for centuries or millennia. Earth's orbit intersects that stream at a predictable point in its yearly revolution around our sun.

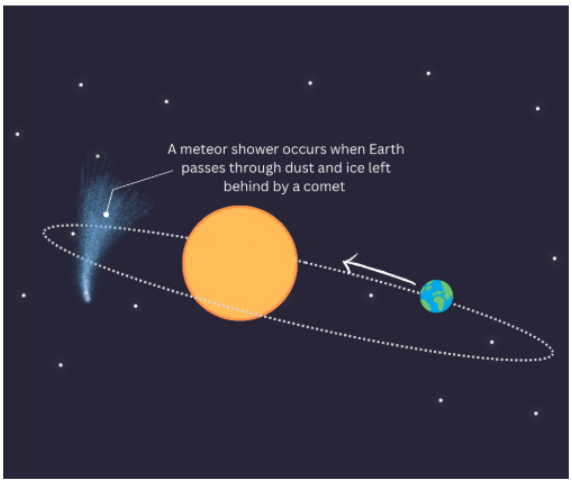

*Illustration: A meteor shower occurs when Earth passes through dust and ice left behind by a comet, or occasionally an asteroid. Graphic by Eric Sims, SVO.*

As Earth plows into the debris, the particles enter the atmosphere in parallel paths. Perspective makes them appear to radiate from a single point in the sky — the radiant — which is why showers are named after constellations (Perseids, Geminids, Leonids, etc.)

The asteroid responsible, 3200 Phaethon, is about 6 km in diameter, which puts it in the same size class as the object that caused the Chicxulub impact (about 10 km), though fortunately for us, Phaethon is not on a collision course. But how can something only 6 km wide produce so much debris? The answer is that it happens over thousands of years. Each 1.43 years, 3200 Phaethon's orbit brings it extremely close to the Sun, heating the asteroid intensely. This causes thermal fracturing and sodium outgassing, which ejects dust and small rocks. Each pass sheds more particles, which disperse along the asteroid's orbital path. Over centuries, the debris stretches into a continuous meteoroid stream.

I also wondered about the size of the particles that were hitting our atmosphere. With thousands of impacts each year, is the debris trail burning up? I was surprised to learn that most visible meteors come from particles between 1 mm and 1 cm in diameter, no larger than a grain of sand. Even a grain-of-sand-sized particle hits the atmosphere at tens of kilometers per second, releasing enough energy to create a glowing plasma trail hundreds of kilometers long, which is what we see with our naked eye as a shooting star.

I had a great time learning about meteor showers and the Geminids in particular. What an amazing universe we live in!

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## Free Public Star Parties

Exciting viewing opportunities abound in clear winter skies! Please join us for one of our free star parties!

- **Friday, January 9, 2026** - 7:00pm at Jackson Flat Reservoir Boat Launch Parking Area. In the beautiful winter sky Jupiter is at perigee (closest to Earth in its orbit around the Sun)! Plus, Saturn, the Pleiades, Orion Nebula, and so much more

- **Friday, February 20, 2026** - 7:00pm at Jackson Flat Reservoir Boat Launch Parking Area. Jupiter, Saturn, and the Andromeda Galaxy are just a few highlights of the winter sky!

- **Tuesday, March 3, 2026** - 3:30am at Jackson Flat Reservoir Boat Launch Parking Area. Join SVO for the Lunar Eclipse! (Note the early morning start time)

  Our events calendar can be seen at: Public Star Parties | Stellar Vista Observatory.

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