CACHE VALLEY

CLEAR SKIES

Volume 13 No. 3 December 2025 https://cvas-utahskies.org

Front Page News

Red spider nebula photo taken by Webb

by Monika Luabeya, NASA edited by Gaby Clark, reviewed by Andrew Zinin Editors' notes
Credit: ESA/Webb, NASA & CSA, J. H. Kastner (Rochester Institute of Technology)

Using its Near-InfraRed Camera (NIRCam), NASA's James Webb Space Telescope captured never-before-seen details of the Red Spider Nebula, a planetary nebula, in this image released on Oct. 26, 2025. NIRCam is Webb's primary near-infrared imager, providing high-resolution imaging and spectroscopy for a wide variety of investigations.

Webb's new view of the Red Spider Nebula reveals for the first time the full extent of the nebula's outstretched lobes, which form the "legs" of the spider. These lobes, shown in blue, are traced by light emitted from H2 molecules, which contain two hydrogen atoms bonded together.Stretching over the entirety of NIRCam's field of view, these lobes are shown to be closed, bubble-like structures that each extend about 3 light-years. Outflowing gas from the center of the nebula has inflated these massive bubbles over thousands of years.

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Telescope in Chile captures stunning new picture of a cosmic butterfly

by Marcia Dunn edited by Andrew Zinin

This image provided by NSF NOIRLab shows NGC 6302, a billowing planetary nebula that resembles a cosmic butterfly. Credit: NSF NOIRLab via AP

A telescope in Chile has captured a stunning new picture of a grand and graceful cosmic butterfly.

The National Science Foundation's NoirLab released the picture Wednesday.

Snapped last month by the Gemini South telescope, the aptly named Butterfly Nebula is 2,500 to 3,800 light-years away in the constellation Scorpius. A single light-year is 6 trillion miles.

At the heart of this bipolar nebula is a white dwarf star that cast aside its outer layers of gas long ago. The discarded gas forms the butterflylike wings billowing from the aging star, whose heat causes the gas to glow.

Schoolchildren in Chile chose this astronomical target to celebrate 25 years of operation by the International Gemini Observatory.

Dec. 1, 2020: The Arecibo telescope collapses

Today in the history of astronomy, the storied observatory succumbs to structural failures.

By Elisa Neckar |

The largest radio telescope in the world for most of its life, the Arecibo Telescope lies in pieces after its platform came crashing down into its dish. Credit: Michelle Negron, National Science Foundation

On Dec. 1, 2020, the Arecibo telescope collapsed. The Puerto Rico facility had already suffered two cable failures – one in August and one in November – and engineers had predicted that the increased load would be too much for the remaining cables. The National Science Foundation announced on

Nov. 19, 2020, that, as the telescope could not be safely repaired, a “controlled decommissioning” would be carried out. Before that could happen, though, wires in the remaining cables began to break, and the 900-ton suspended receiving platform crashed into the dish below it. It was a devastating end for a groundbreaking telescope that had been one of the most powerful instruments on Earth for nearly six decades.
A 2024 report by the National Academies of Sciences, Engineering, and Medicine indicated that structural stress from Hurricane Maria contributed to the collapse, but also that signs of imminent cable failure were missed or ignored but engineers and inspectors.

Nov. 30, 1954: The first known human injury via a meteorite

By Elisa Neckar | Published: November 30, 2025

The meteorite that struck Ann Hodges is on display in the Alabama Museum of Natural History. Credit: Kai NeSmith, CC BY 4.0, via Wikimedia Commons

On Nov. 30, 1954, Ann Hodges was napping on the couch in the living room of her Sylacauga, Alabama, home. At 2:46 p.m., an 8.5-pound (3.85 kilograms) rock crashed through her roof, bounced off a console radio, and hit her hip, leaving a large bruise. The rock – which was at first turned over to the Air Force and then the Smithsonian – was actually a chondrite meteorite, made up of iron and nickel. While Hodges didn’t suffer any lasting physical effects, she became an overnight celebrity – the first known person to be injured by a falling meteorite and survive.
It was an uncomfortable situation for the very private Hodges: She became entangled in a court case with her landlord over ownership of the meteorite, and in 1964, she and her husband divorced in part due to the stress the incident had put on their relationship. In 1956, ready to be done with the meteorite and the disruption it had brought to her life, Hodges donated it to the Alabama Museum of Natural History, where it is still on display.

Powerful Solar Storm Hits Earth – See CVAS Club Member Photos !!

On November 11, 2025, a powerful geomagnetic storm resulted in a stunning and widespread aurora display across North America, visible as far south as Florida and Texas. The event, caused by two coronal mass ejections from the sun, was one of the strongest of its kind in years and was predicted to continue into the following night.

- **Cause:** The aurora was triggered by a severe (G4-level) geomagnetic storm, which occurred after two fast-moving coronal mass ejections (CMEs) from the sun impacted Earth's atmosphere on November 9 and 10.
- **Visibility:** The display was exceptionally widespread, with auroras visible across the U.S. in states like Florida, Alabama, Georgia, and Texas.

Photo by Bruce Horrocks of Logan Utah

It was also seen in states as far north as Idaho, Iowa, and New York.

- **Visuals:** Skywatchers reported seeing vibrant red and green hues in the night sky.
- **Storm Intensity**: The storm reached a G4 on the 1-5 geomagnetic storm scale, just below the extreme G5 level. The Dst index, a measure of the disturbance to Earth's magnetic field, reached -235 nT, placing it in rare territory.The storm was one of the most powerful of its kind in recent years.
- **Continuing activity:** Experts predicted that the geomagnetic activity would continue into the night of November 12, offering another potential viewing opportunity, though it might not reach as far south.

Monthly Club Calendar of Events

STEM Nights

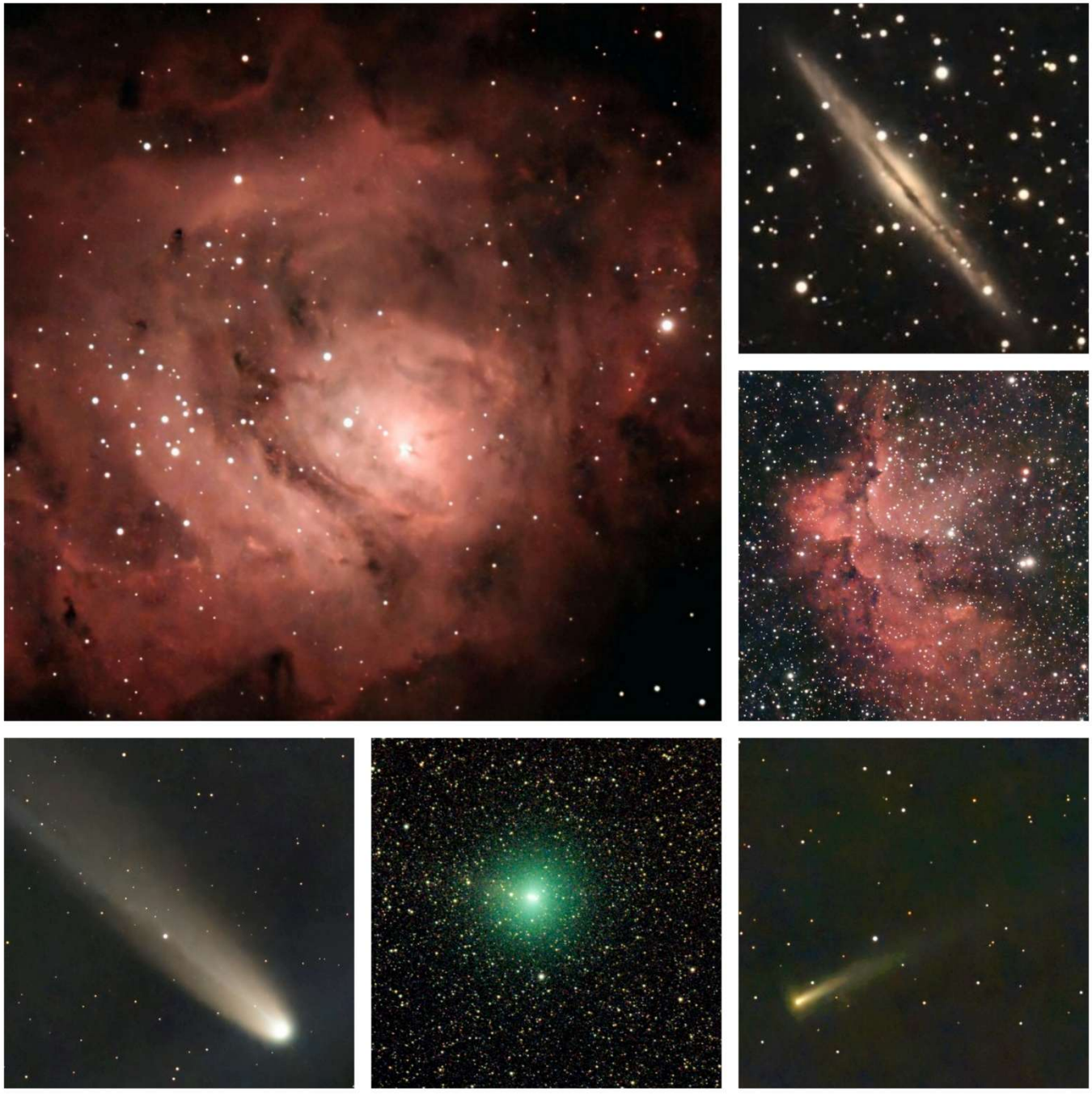
School	Date	City	Volunteers .
North Park Elementary	January 22, 2026	North Park	Clark Salisbury & Randy Jost
Wellsville Elementary	January 28, 2026	Wellsville	Bruce Horrocks & Dell Vance
Canyon Elementary	February 5, 2026	Hyrum	Randy Jost & Dell Vance
Sunrise Elementary	March 24, 2026	Smithfield	Randy Jost & Dell Vance

CVAS Club Meetings

	Date	Where	Topic .
Club Christmas Social	December 30, 2025 7:00 PM	Dell Vance Home, Newton	Food! And Lots of it !
January Meeting	January 16, 2026 7:00 PM	USU Engr Lab Rm 109	Show and Tell
February Meeting	February 20, 2026 7:00 PM	USU Engr Lab Rm 109	Most Exciting Topic !!!

Christmas Club Social December 30, 2025 , 7:00 PM
Dell Vance Home in Newton
7401 N 100 W

Recent Deep-sky observations by Blaine Dickey

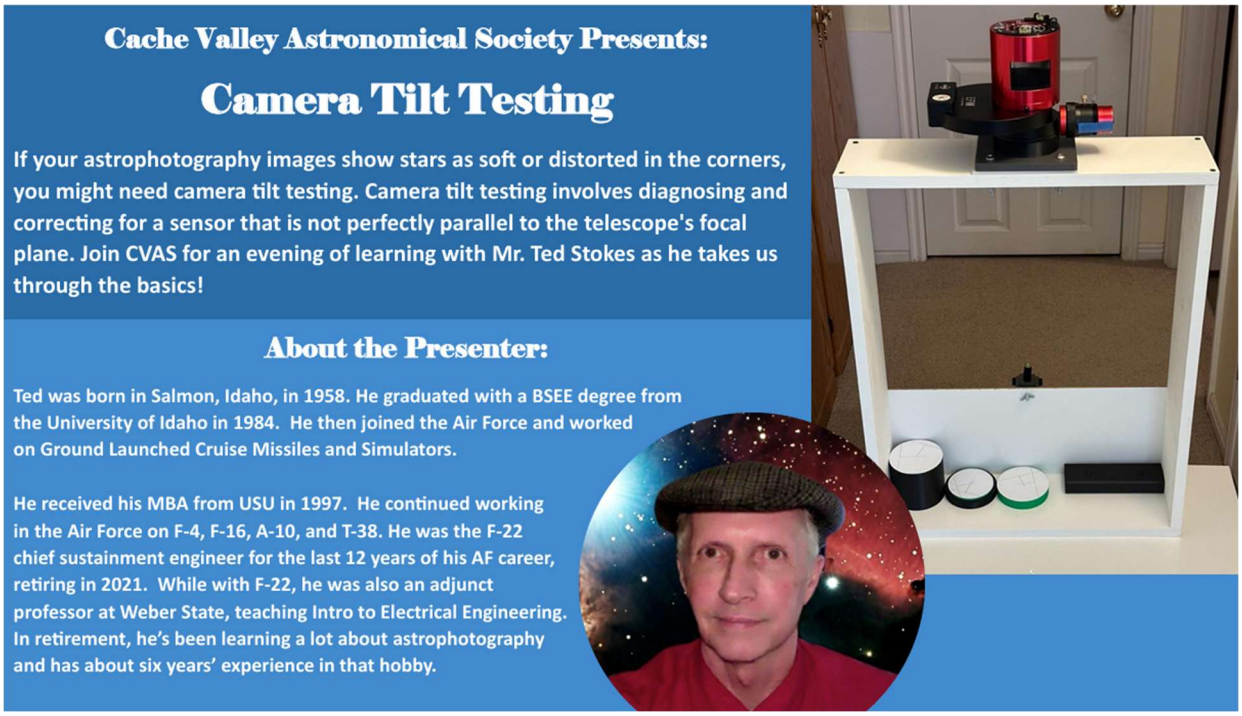


The deep-sky objects shown above were imaged in the evening skies of October and November

October and November also provided great opportunities to see some visitors from the outer solar system. At least 3 comets were within easy reach of my equipment. You may notice the different hues of each comet. Comet Lemmon and SWAN are in the evening sky and Comet Atlas in the morning sky.

Top Left, Messier 8, the Lagoon Nebula in Sagittarius
Top Right, NGC 891, Spiral Galaxy in Andromeda
Middle Right, NGC7380, Wizard Nebula in Cepheus
Bottom Left, C/2025 A6 (Lemmon)
Bottom Middle, C/2025 R2 (SWAN)
Bottom Right, C/2025 K1 (ATLAS)

Camera Tilt Testing – Ted Stokes



If you have been using that brand new camera you purchased and think it is just perfect straight from the factory, you might want to think again! Ted Stokes shared some excellent information on how to test that new camera and realize that it just might need a bit of adjustment and how you can do that. It was an excellent presentation and very informative. Ted demonstrated how to check that camera sensor for any tilt issues and then how to correct the sensor for proper alignment. Thanks, Ted, for a great presentation !!!

Afterwards all club members enjoyed a fabulous chicken parmesan dinner at Angie's Restaurant in Logan, paid for by club funds, followed up by cleaning the sink with some of that outstanding ice cream dessert that makes Angies famous.

That last line is just a lie, but seriously – WHERE IS EVERBODY ? The Cache Valley Astronomical Club is a great place to be and learn something new once a month and very few of you are showing up. Please let us know if it is the time, the location, or what so we can strive to get a better showing. I have seen some other clubs presentations that are not nearly as interesting and informative as what we offer and so you can really be missing an opportunity to get some very crucial information that can help you with this hobby all for the low price of nothing. How much better of a deal can you get for that? I will say that parking the other night was a challenge as there was another event going on that filled up the parking lot, but most other nights this year the parking lot has been pretty open. Our December club social will be at Dell Vance's home in Newton so our next club meeting in January will be back up at the USU Engineering building as usual. We truly hope you make an effort to join with us and share in this great club experience.

Aurora Images – CVAS Club Member Contributions – Thanks !!

Recent solar activity produced some outstanding Aurora images for us all to see and photograph. Most of this was on the night of November 11. If you missed it, all I can say is you missed a good one. Hopefully there will be more to enjoy this winter.

Image by Blaine Dickey

Image by Gary Bracken

Images by Dean Louviere

Image by Dell Vance

Image by Mario Harper

Images by Tyler Porter

Images by Richard Palfreyman

Tom Westre has the following equipment for sale. If anyone is interested they can contact Tom at 435-787-6380 to get more information and discuss prices.

1. Celestron 8 SE with Alt-Az mount, tripod and Celestron auto Align.
2. Celestron 8 inch Schmidt Cassegrain OTA
3. Orion EON 115mm (4.5") Apochromatic Triplet Refractor
4. ZWO Seestar S50 all in one Smart Telescope
5. Celestron 11 inch Schmidt Cassegrain f/10 with CGX-L equatorial mount, Tripod and Celestron StarSense, & AutoGuider
6. NexDome backyard Observatory.

If anyone is interested they can contact Tom at 435-787-6380 to get more information and discuss prices.

Bruce Horrocks has the following equipment for sale:

1) 14” Celestron Edge SCT with Starizona HYPER Star Lens and Celestron Electronic Focuser.

If interested call Bruce at 435-730-0227 for more information and price.

What's Up in the Sky in December

The last month of 2025 brings many wonderful celestial events. In the Northern Hemisphere, nights are at their darkest, though daylight gradually increases after the December solstice. In the Southern Hemisphere, the solstice ushers in summer and long, bright evenings.

No matter where you are on Earth, December offers plenty to look forward to, including a major meteor shower, brilliant Mercury, and several planetary close encounters involving the Moon.

Date	Event*	What to See
Dec 4	Super Cold Moon	The Cold Moon is at its most illuminated on December 4, at 23:14 UTC. It's also a Supermoon.
Dec 7	Mercury at greatest elongation west	Mercury shines as it reaches its farthest distance from the Sun in the morning sky.
Dec 7	Moon-Jupiter conjunction	The Moon finds Jupiter near the beginning of this month.
Dec 13–14	Geminid meteor shower	One of the most spectacular meteor showers of the year, with the possibility of sighting around 120 meteors per hour at its peak.
Dec 17–18	Moon-Mercury conjunction	The Moon and Mercury meet up in the sky.
Dec 21	The December solstice	The December solstice marks the shortest day north of the equator and the longest day in the south.
Dec 22–23	Ursid Meteor Shower	Missed the Geminids? You can look for the Ursids right before Christmas.
Dec 26–27	Moon-Saturn conjunction	The Moon says hi to Saturn near the end of the month.

Super Cold Moon

This year, December's Full Moon is at its most illuminated at 23:14 UTC on December 4, 2025. It follows last month's Super Hunter's Moon, and is again a Supermoon—a Full Moon occurring near the Moon's closest approach to Earth.

The Full Moon in December is called the Cold Moon, named after the month where winter truly begins and it's getting colder in the Northern Hemisphere. Full Moons can have multiple names, and December's Full Moon is also called Long Nights Moon, and the Moon before Yule.

Don't forget to look up on December 4 to catch the Super Cold Moon in the sky. Just don't catch a cold or the flu!

The December Full Moon is named after the cold temperatures of winter in the Northern Hemisphere.

Geminid Meteor Shower

How to See the Geminids

You don't need any special equipment or a lot of skills to view a meteor shower. All you really need is a clear sky, lots of patience, and know about where to look for the best viewing for your location.

Meteors, often known as shooting stars, are bright streaks of light produced when small pieces of space debris burn up in Earth's atmosphere. Meteor showers occur as Earth moves through clouds of material left behind by a comet or asteroid.

The Geminid meteor shower is considered to be one of the most spectacular meteor showers of the year. There is a possibility of sighting around 120 meteors per hour at its peak, which is on December 13 or 14. The shower owes its name to the constellation Gemini because the meteors seem to emerge from this constellation in the sky.

Unlike most other meteor showers, the Geminids are not associated with a comet but with an asteroid: 3200 Phaethon. The asteroid takes about 1.4 years to orbit the Sun.

Because the Waning Crescent Moon doesn't rise until a few hours after midnight on December 14, it won't hinder meteor viewing too much. Although the Moon's timing could be better.

For meteor showers, the Moon is at its most helpful when it's not there! The Moon is the brightest object in the night sky—its glare lights up the darkness and hides fainter meteors.

Once you have found your viewing spot, you can lie down on a nice warm cot and look up at the sky. Just make sure to stay warm and dry.

The December Solstice: The Longest and Shortest Day

December 21 is the December solstice, the longest and shortest day of the year. To be precise, the solstice happens at exactly 15:03 UTC on December 21st.

According to one definition of the seasons, it marks the start of winter in the Northern Hemisphere and the start of summer in the Southern Hemisphere. This day holds astronomical, cultural, and religious importance.

Although winter is often associated with darkness and cold in the Northern Hemisphere, the December solstice marks the “turning of the Sun,” when daylight gradually begins to increase.

For hundreds of years, people have been lighting up the darkest time of the year around the December solstice in the Northern Hemisphere—including the ancient celebration of Yule, a term derived from the Old Norse *jól*, which referred to the pre-Christian winter solstice festival.

Today, many Christians around the world celebrate the birth of Jesus Christ on Christmas Day, observed on December 25.

Many believe the date was chosen to coincide with ancient pagan festivals that celebrated the end of winter’s darkest days and the return of the Sun, though, sadly, not the return of warmth. The Winter Solstice, falling just a few days before Christmas on December 21 or 22, is astronomically considered the first day of winter in the Northern Hemisphere.

Image of Starless Soul Nebula by Bruce Horrocks

Just testing out the camera and trying something new in Pixinsight.

MEMBERSHIP APPLICATION FORM

Member # _____

NAME:_____ _____ _____
First Middle Initial Last

Address:_____ _____ _____ _____
Street City State Zip Code

Home Phone: _____ **Cell Phone:**_____

Work Phone : _____ **Occupation** :_____

Email Address: _____

How did you learn about CVAS?

_____Website ____Star Party ____CVAS Member ____Other _____

Membership: $20 lifetime membership

Tell us about yourself: Do you have a special interest in astronomy? Do you have special skills? Are you willing to volunteer on CVAS projects or attend public outreach star parties? Astro equipment owned.

_____

_____

By signing this application, I acknowledge I have access to the CVAS website, cvas-utahskies.org , and the CVAS constitution. I agree to abide by the constitution.

Signature: _____ Date:_____

Bring this form to the meeting or contact **Dell Vance, Membership Coordinator** at avteam.dell@gmail.com.