

PRESIDENT'S CORNER

by Dell Vance

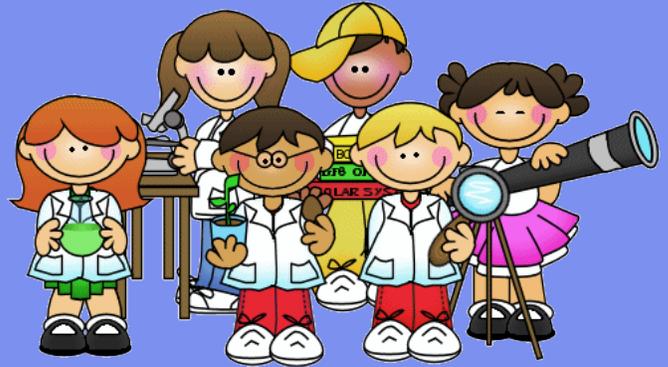


Ann-Maree Vance

Well, the holiday season has come and gone. I hope everyone enjoyed the season. It is always a very busy time of year. We enjoyed the festivities and the concerts. Even some opportunities to see spectacular skies! Although, with those skies came the very cold temperatures. Unfortunately, we had to cancel the holiday gathering. Amid all the festivities, I ended up with a head cold. Nothing dramatic like COVID or the flu, but enough that I didn't want to pass it onto anyone else.

With January we have a New Year to accomplish our goals. We have our first meeting of the new year on Friday, January 12, at 7:00 p.m. at the USU Engineering Lab, room 109. We will have our annual Show-and-Tell Night. We encourage each of you to think about what item you have obtained or learned about that you would like to share with the club. It can be things like new equipment, programs, books, a new process you are using, etc. It is always exciting to see

cont'd on p. 2



Clipart Library

UPCOMING EVENTS

Club Meeting

- Friday, January 12, at the USU Engineering Lab, room 109.
- Topic: Show-and-Tell Night! Share information about your latest and greatest astronomical equipment or an astronomy-related skill you've been working on. If you would like share something, please let one of the Executive Committee members know so we can plan on giving you some time.

STEM Fairs

Events last from 6:00 to 8:00 p.m. Please plan to arrive at 5:30.

- January 18: North Park Elementary
- January 24: Wellsville Elementary
- February 8: White Pine Elementary
- February 22: Cedar Ridge Elementary
- March 12: Sunrise Elementary
- March 21: Providence Elementary
- March 25: Greenville Elementary

Keep up to date by visiting our website:



President's Corner, cont'd from p. 1

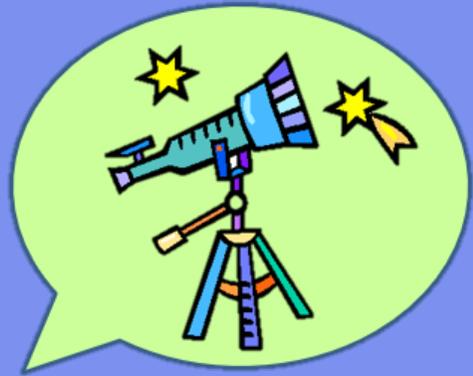
what others are doing in our club and their experiences. We have a great wealth of knowledge in our group and it is often the simple things that make the biggest difference in how we do things.

We have two STEM Fairs this month. On January 18, we have North Park Elementary School and on January 24, we have Wellsville Elementary School. We certainly appreciate all those that support us in these events. It is always interesting to see what catches the interest of these students and their families. I have noticed at least one young person that shows an interest in space and science at each event. I think it may make a difference somewhere down the line for those individuals. We need our youth to get excited about astronomy and science.

This year we are also getting excited about the upcoming solar eclipse. On January 1, we are 98 days and counting.

Thanks again for all your support.

Clear Skies!

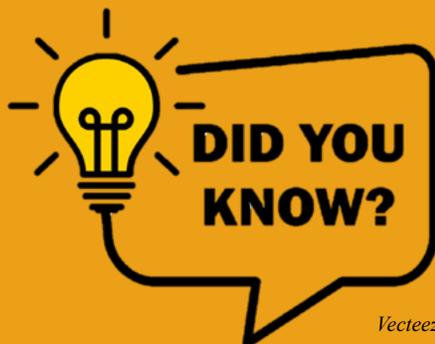


Clipart Library

Challenge from Our President

Bring something to share at our Show-and-Tell meeting on January 12!

This includes equipment, computer applications/programs, books, favorite images—anything you'd like to share!

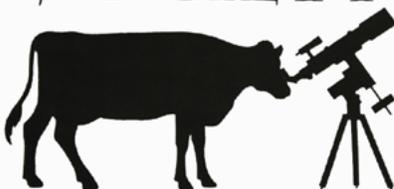


Vecteezy

What Is a STEM Fair?

“STEM” stands for Science, Technology, Engineering, and Mathematics. Local elementary schools host evenings at which children can learn about STEM topics informally. This is a great chance for us to share our love of astronomy! We only need two to three people for each event. Contact any member of the Executive Committee to volunteer. During the winter, we stay indoors, so you won't have to worry about getting cold! Events last from 6:00 to 8:00 p.m. Please plan to arrive at 5:30.

CACHE VALLEY ASTRONOMICAL SOCIETY



Our Website: CVAS-UTAHSKIES.ORG

EXECUTIVE COMMITTEE

- President: Dell Vance; avteam.dell@gmail.com
- Vice President: Dale Hooper; dchooper5@gmail.com
- Secretary-Treasurer: Bonnie Schenk-Darrington; bschenkdarr@gmail.com
- Night Sky Network Coordinator: Dell Vance; avteam.dell@gmail.com
- Public Relations: Bruce Horrocks; bruceh@gem-buildings.com
- Webmaster-Librarian: Tom Westre; twestre45@aol.com

OCCULTATION OF ANTARES BY THE MOON ON JANUARY 8, 2024

by Blaine Dickey

If you haven't seen an occultation of a bright star by the moon, then you are in luck this coming January. On the morning of Monday January 8, 2024, the moon will occult the first-magnitude star Antares in constellation of Scorpius.

This occultation will take place at 6:38:17 a.m. Antares will be in the southeastern sky at +09 degrees altitude. To see this, you may need to view it toward the middle of the valley, as the moon may not be up high enough if you live close to the eastern mountains. You should be able to view this part of the event with your unaided eyes, but binoculars or a small telescope will make it easier to see. The star will approach the bright side of the moon and then quickly disappear as the moon covers it. It can be quite dramatic.



a video of its disappearance and reappearance. The times mentioned here may be slightly different, depending on where you live.

You may not want to go outside on a cold January morning but the good news is that you may be able to see this occultation from inside your home if you have a window facing south and look southeastward.

Several facts about Antares make it an interesting object in its own right. For example, the color of Antares is noticeably red to the naked eye. Antares is a supergiant star about 400 times larger than our sun and almost 10,000 times brighter. It should eventually explode as a supernova. If you have a large scope, you may be able to notice that a 6th-magnitude star resides about 2.5 arc seconds from it.

Images courtesy of Blaine Dickey and Sky Safari 7 Pro.



Maybe even more impressive is when the star comes back out on the dark side of the moon. It reappears next to the dark side of the moon that is *not* lit up by earthshine. That will occur more than an hour later, at 7:48:32 a.m. In this case, the dawn will be brightening the sky, so it may not be as striking as when it disappeared. Binoculars or a telescope may be needed to see this part of the event well.

For the imagers in the group, you might try making

The occultation will take place at 6:38:17 a.m. You should be able to view this part of the event with your unaided eyes but binoculars or a small telescope will make it easier to see.

Antares will reappear next to the dark side of the moon not lit up by earthshine. Binoculars or a telescope may be needed to see this part of the event well.

2023 CLUB EVENTS



Page 4

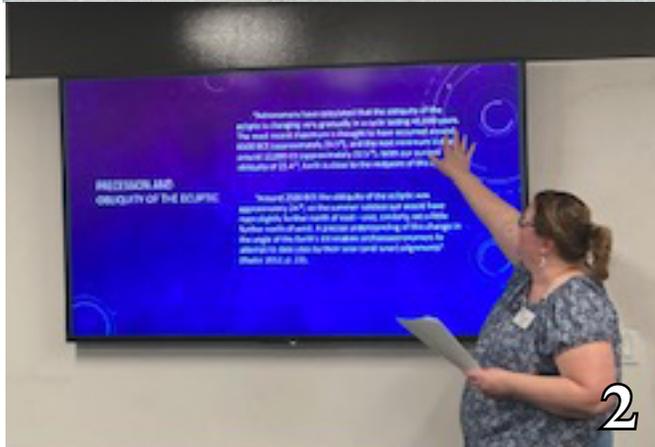
1. Dell Vance, Dean L., Dale Hooper, Paul Yamaguchi, and Dale's huge telescope at the **North Logan Library Star Party** on April 28.
2. Bonnie Schenk-Darrington presents on **Archaeoastronomy** at the club meeting on April 14, 2023.
3. **Solar Party!** Dale Hooper, Tom Westre, and Dell Vance with their solar scopes at the Nibley Heritage Days Fair on June 17, 2023. It was a cloudy spring and summer, as you can see by the sky behind them.
4. Dell Vance and Alannah Darrington at the Nibley Heritage Days Fair **Solar Party**.

Page 5

On June 9, we held a **Summer Social at Willow Park**. Unfortunately, it was cold and rainy; no one stayed late enough to attempt using their telescope.

1. Left: Frank Kenyon, Bruce Horrocks, Paul Yamaguchi. Right: Jean Kenyon, Sylvia Westre, Tom Westre, Dell Vance.
2. Paul Yamaguchi, Dale Hooper, Dell Vance.
3. Alannah Darrington and family.
4. James Somers and family.
5. Maigan and Tom Sorensen.
6. Alice and Dale Hooper.
7. Some feathery astronomers who crashed the party. All birds that migrate are fans of dark skies!

Photos courtesy of Becca L., Alannah Darrington, Dale Hooper, and Bonnie Schenk-Darrington.



2023 CLUB EVENTS



2023 CLUB EVENTS




Cache Valley Astronomical Society Presents
Stories from the Cosmos
 A presentation by Alannah Darrington, CVAS Member
 CVAS Meeting
 Friday, September 8, 2023
 7:00 p.m.
 USU Engineering Lab Room 107

Greek myths about how your favorite constellations came into being! We will hear stories about Cygnus, the Big and Little Dippers, Leo, and much more!

Please join us!

FREE AND OPEN TO THE PUBLIC.
 Families and children welcome; stories will be PG-rated.



Our Website: CVAS-UTAHSKIES.ORG

1

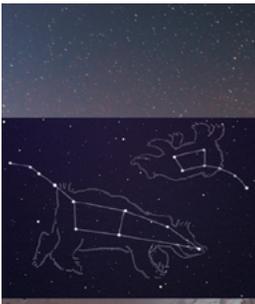
Page 6

1. Poster announcing Alannah Darrington's presentation at our September 8 club meeting, "**Stories from the Cosmos,**" which was about Ancient Greek myths about the constellations.
- 2 and 3. Slides from Alannah's presentation.

Page 7

On October 20, we shared our experiences of the **Annular Eclipse** at our club meeting.

1. Bruce Horrocks shows the club his eclipse images while playing the Johnny Cash song "Ring of Fire."
2. Tom Westre tells us about his eclipse experience and also gives a brief report on his recent adventures capturing very distant photons.
3. Sherell Eames enjoyed the eclipse with her kids and grandkids. In this picture, she speaks of the wonder she felt as she watched, and how amazing it is that our moon, sun, and planet are all in the perfect locations so that we can enjoy events like this. In spite of the traffic and general craziness, everyone she met was in a good mood, and her grandkids even played Rock-Paper-Scissors with kids in other cars during the worst parts of the traffic jam.
4. Dale Hooper shows images from his eclipse adventure. He agreed with Sherell that it was a really special experience that was not ruined by the long car ride.
5. Dell Vance reported his own eclipse adventure, and also kindly showed images and read a report from club member Blaine Dickey, who was unable to attend. In this picture, he's showing one of Blaine's composite images.



Ursa Major and Ursa Minor

Story of Kallisto and Arkus

- Kallisto was a follower of the goddess Artemis
- Artemis and Kallisto were best friends
- Zeus cornered her one day and raped her as Artemis
- Kallisto hid her pregnancy for months
- Artemis found out one day while everyone was bathing
- As punishment for not telling Artemis, Kallisto was changed into a bear
- Gave birth to Arkus in the woods
- Kallisto was eventually hunted and humans found Arkus
- Zeus placed her in the sky as a constellation
- Arkus followed suit once he passed away so they could be together

2

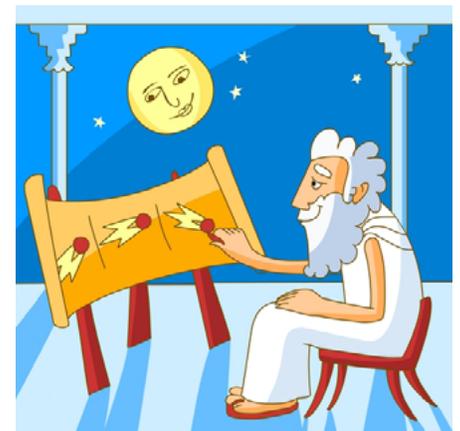


Virgo

The story of Persephone

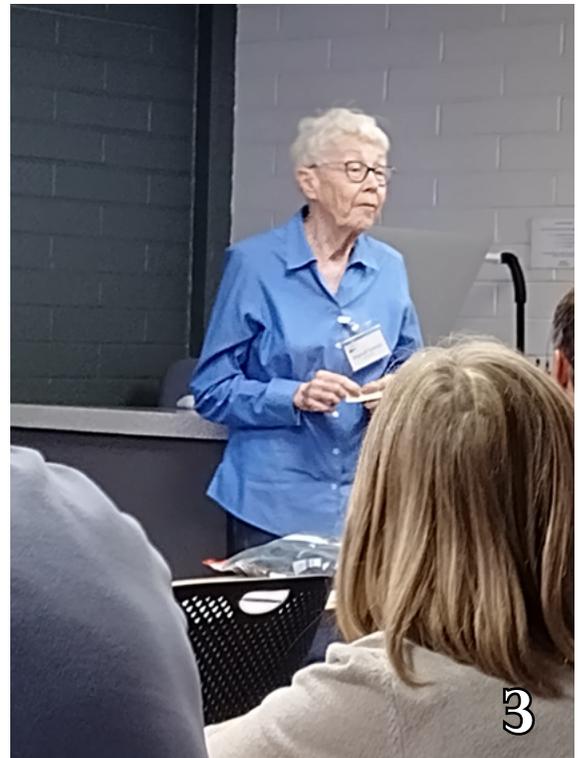
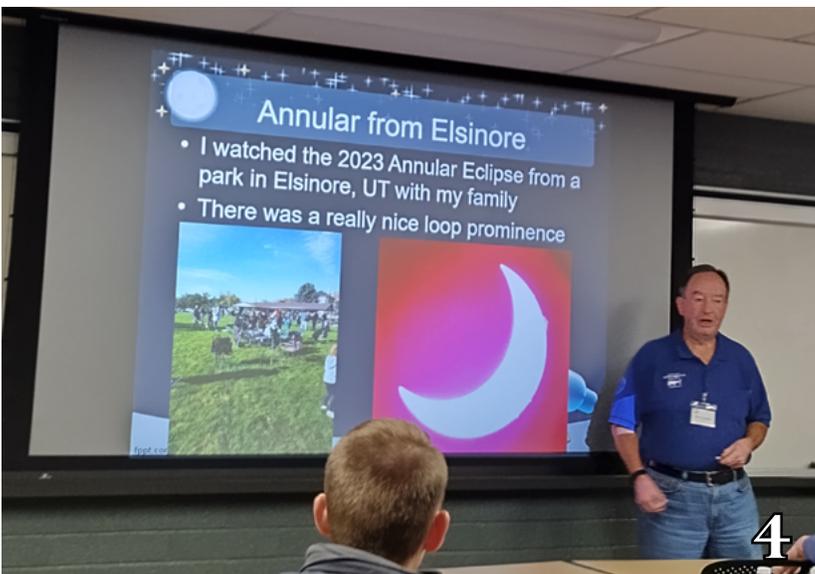
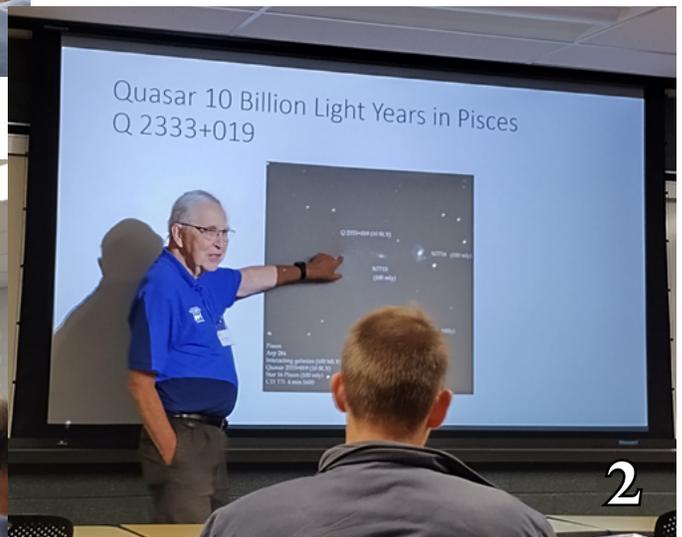
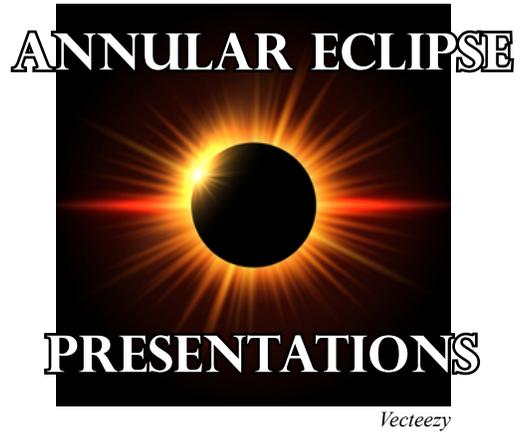
- Daughter of Demeter and Zeus
- Grew up quite spoiled since she was the daughter of two powerful deities
- Hades fell in love with her while she frolicked in a field
- Asked Zeus for her hand in marriage
- Both plotted to kidnap Persephone by leaving a trail of flowers leading her away from her friends
- Hades took Persephone to the Underworld
- Demeter searched for days with help from Hecate and the kingdom of Eleusis
- Demeter demanded Persephone back, but Hades wouldn't let her go
- Millions of people died due to starvation
- Persephone ate one-third of a pomegranate, leaving her living in the Underworld for one-third of the year and two-thirds under the sun with her mother

3

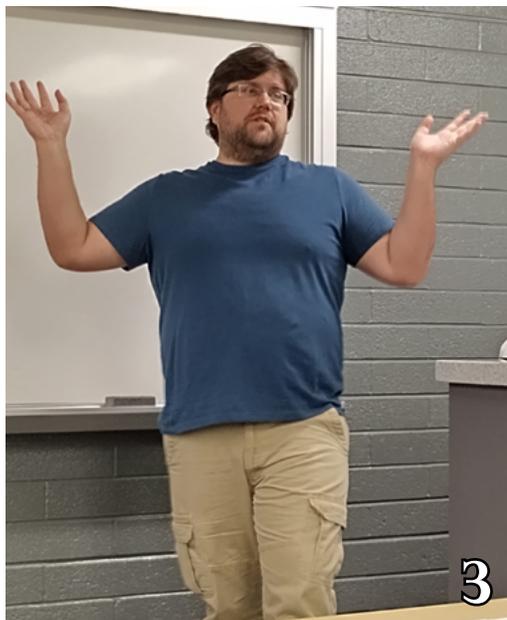
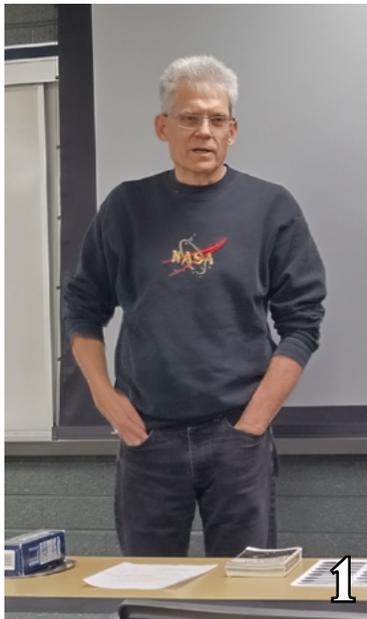


Photos courtesy of Bonnie Schenk-Darrington and Alannah Darrington.

2023 CLUB EVENTS



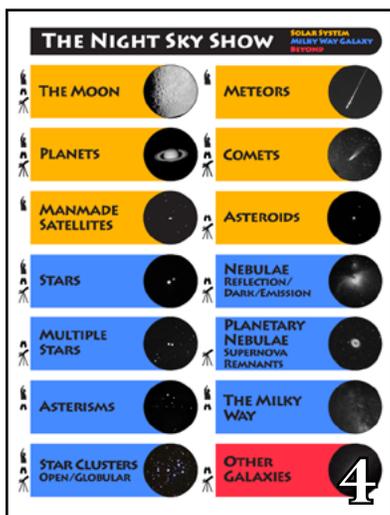
2023 CLUB EVENTS



Page 8

On November 10, we listened to two great presentations at our club meeting!

1. Club member Lyle Johnson gave us a presentation on **Astronomy 101**. He talked about naked-eye viewing, binoculars, telescopes, how to memorize the constellations, and great targets for beginners to enjoy.
2. Paul Ricketts from the University of Utah favored us with a presentation on the **History and Future of the Universe**, with an introduction to various theories. It's the second time Paul has visited us; he is an interesting speaker!
3. After his presentation, we turned on the lights so that we could see Paul as he answered our questions.
- 4 and 5. Handouts from Lyle. If you didn't receive a copy of these with the December newsletter, please reach out to Bonnie at bschenkdarr@gmail.com.



Name	Constellation	Season	Binoc	Scope	Notes	Observed
Moon	(various)	(all)	--	--	craters, mountains, maria, etc.	<input type="checkbox"/>
Alpha	(various)	(various)	--	--	slightly flattened disk, cloud bands, and moons	<input type="checkbox"/>
Saturn	(various)	(various)	--	--	ring and one or more moons	<input type="checkbox"/>
Sun	(various)	(all)	--	--	sunspots, flares (don't use commercial solar filter)	<input type="checkbox"/>
Venus	(various)	(various)	--	--	best when it's a thin crescent	<input type="checkbox"/>
M42	Orion	Win	--	--	Orion Nebula, spawning nebula with stars	<input type="checkbox"/>
M45	Taurus	Win	--	--	Plades/Seven Sisters, large open star cluster	<input type="checkbox"/>
M21	Andromeda	Fall/Win	--	--	Andromeda Galaxy, large nearby galaxy	<input type="checkbox"/>
M8	Sagittarius	Sun/Fall	--	--	Lagoon Nebula, nebula with stars	<input type="checkbox"/>
M13	Hercules	Sun/Fall	--	--	open star cluster	<input type="checkbox"/>
Albino	Cygnus	Sun/Fall	--	--	double star with yellow and blue components	<input type="checkbox"/>
Orion Cluster	Orion	Fall/Win	--	--	two open star clusters close together	<input type="checkbox"/>
M22	Sagittarius	Sun/Fall	--	--	globular star cluster	<input type="checkbox"/>
M20	Sagittarius	Sun/Fall	--	--	Trapezium, nebula with stars	<input type="checkbox"/>
M37	Lyra	Sun/Fall	--	--	ring nebula, planetary nebula, outer 'smoke ring'	<input type="checkbox"/>
M37	Canis	Win/Spr	--	--	open star cluster	<input type="checkbox"/>
Cr-399	Vulpecula	Sun/Fall	--	--	Blinker's Cluster, shaped like a cool hanger	<input type="checkbox"/>
M41	Canis	Win/Spr	--	--	Phoenice/Devine Cluster, open star cluster	<input type="checkbox"/>
M27	Vulpecula	Sun/Fall	--	--	Dumbbell Nebula, planetary nebula	<input type="checkbox"/>
M4	Scorpio	Sun/Fall	--	--	globular star cluster	<input type="checkbox"/>
M7	Sagittarius	Sun/Fall	--	--	Trifid Cluster, open star cluster	<input type="checkbox"/>
Hyades	Taurus	Win/Spr	--	--	open star cluster, closest one to earth	<input type="checkbox"/>
M81	Ursa Major	Spr/Sun	--	--	Spindle's Galaxy	<input type="checkbox"/>
M82	Ursa Major	Spr/Sun	--	--	Coma Cluster, open star cluster	<input type="checkbox"/>
M51	Canes Veneti	Spr/Sun	--	--	Whirlpool Galaxy	<input type="checkbox"/>
M55	Canis	Win	--	--	open star cluster	<input type="checkbox"/>
M11	Scorpio	Sun/Fall	--	--	Wish Dust Cluster, open star cluster	<input type="checkbox"/>
M13	Hercules	Fall/Win	--	--	open star cluster	<input type="checkbox"/>
M3	Canes Veneti	Spr	--	--	globular star cluster	<input type="checkbox"/>
M5	Scorpio	Sun/Fall	--	--	globular star cluster	<input type="checkbox"/>
Cr-399	Scorpio	Sun/Fall	--	--	globular star cluster	<input type="checkbox"/>
Epistar Lyra	Lyra	Sun/Fall	--	--	double double, two pairs of very close stars	<input type="checkbox"/>
M28	Auriga	Fall/Win	--	--	open star cluster	<input type="checkbox"/>
M41	Canes Veneti	Spr/Sun	--	--	Coma Cluster, open star cluster	<input type="checkbox"/>
M2	Aquarius	Fall/Win	--	--	globular star cluster	<input type="checkbox"/>
M37	Auriga	Fall/Win	--	--	open star cluster	<input type="checkbox"/>
M44	Ursa Major	Spr/Sun	--	--	double star in the Big Dipper	<input type="checkbox"/>
M41	Canes Major	Win	--	--	open star cluster	<input type="checkbox"/>
M8	Scorpio	Sun/Fall	--	--	Butterfly Cluster, open star cluster	<input type="checkbox"/>
M20	Sagittarius	Sun/Fall	--	--	open star cluster	<input type="checkbox"/>
NDC 613	Castellus	Fall/Win	--	--	open star cluster	<input type="checkbox"/>

Legend:
 - Interesting
 - very interesting
 - too faint, too small, or too large

 A small white number '5' is in the bottom right corner of the image.

Photos courtesy of Bonnie Schenk-Darrington and Lyle Johnson.

Want to see more great pictures of 2023 club events? You can find them in the April 2023 edition of *Cache Valley Clear Skies!*



ClipartMax

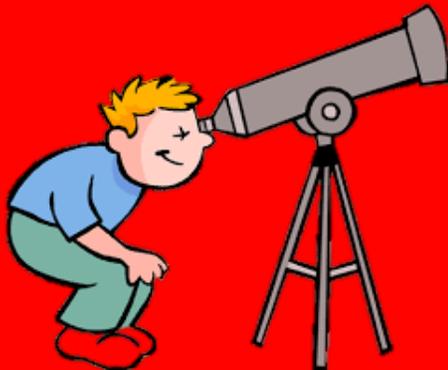
USU Observatory Update

The December public night was canceled due to snow on the roof and freezing weather. The observatory is currently closed and will reopen in the spring. For details about location, targets, weather, and parking, visit the USU Physics Department website [here](#).



Classroom Clipart

You can see CVAS events on the NASA Night Sky Network calendar at <https://nightsky.jpl.nasa.gov/clubs-and-events.cfm>. If you don't yet have access to the NSN website, please let a member of the Executive Committee know! We can add you to the roster and help you create a login and password.

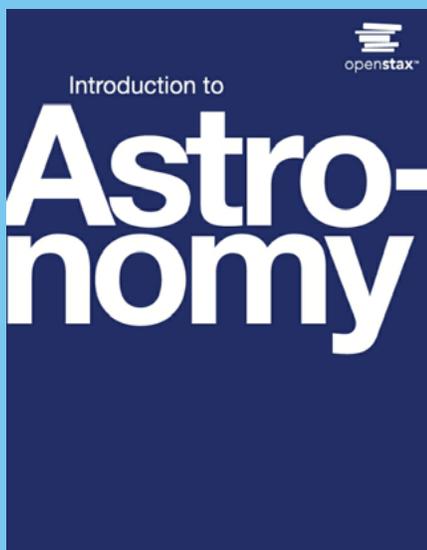


CoolClipart.com

Stumped? Befuddled?? Bamboozled???

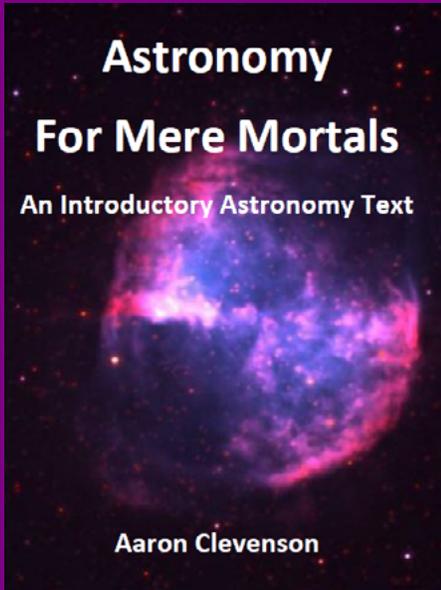
Telescope Help Is Available!

When even your CVAS friends can't answer your obscure telescope questions, you might find it helpful to call Tom Sevcik at the Clark Planetarium in Salt Lake City! His number is (385) 468-1264. You can read his bio on the [Clark Planetarium website](#).



New 2nd Edition of Free Astronomy 101 Textbook Now Available!

In an effort to democratize knowledge, the [OpenStax](#) project produces free digital and inexpensive hard-copy college-level textbooks written by professionals in many fields. You do not have to be a college student to request a copy. You can read more about the new astronomy textbook [here](#). And you can download or order a copy [here](#).



Astronomical League

Astronomy for Mere Mortals

You can download the e-book, *Astronomy for Mere Mortals* by Aaron Clevenson, a complete introductory textbook, available free, updated annually.

You can download a PDF [here](#). You may print it, or if you would like a printed copy, please contact the author, Aaron Clevenson, at aaron@clevenson.org.



Clipart Library



pngset

Hey, Astronomy Hero! What's Your Origin Story?

CVAS members are astronomy superheroes who share their love of astronomy with the galaxy! (Or, at least with the people of Earth!)

What piqued your interest in astronomy? Please tell us! Send your article to Bonnie at bschenkdarr@gmail.com!

Kalamazoo (Michigan) Astronomical Society Has Some Great Lectures and Classes You Can Participate in via Zoom!



Kalamazoo Astronomical Society

Check out the **KAS Eclipse Lecture Series**, which will give you great tips on how to photograph and enjoy the April 8, 2024, total solar eclipse! You can download a list of lectures [here](#). You must [preregister](#) to attend.

Also back by popular demand, **KAS's Introduction to Amateur Astronomy** online class! You can download a flyer about it [here](#). You must [preregister](#) to attend.

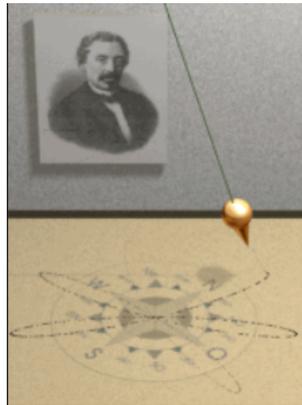
UPCOMING ASTRONOMY EVENTS AND ANNIVERSARIES

by Bonnie Schenk-Darrington

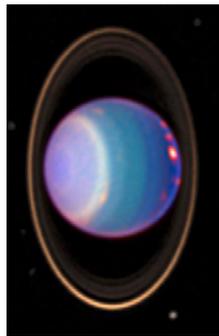
- January 1: Guiseppe Piazzi's discovery of the first asteroid (Ceres) in 1801.
- January 1: Moon at apogee (farthest distance from Earth).
- January 2: Amy Mainzer born in 1974. Besides being deputy project scientist on the WISE mission and principal investigator on the NEOWISE mission, she was the science advisor for the 2021 film *Don't Look Up*.
- January 3: Earth at perihelion (closest approach to sun).
- January 3: Leonardo da Vinci unsuccessfully tested a flying machine in 1496.
- January 4: Quadrantids meteor shower peaks, with radiant point in Boötes.
- January 4: Charles Messier's discovery of M80 globular cluster in Scorpio in 1781.
- January 4: *Spirit* rover landed on Mars in 2004, ahead of its twin, *Opportunity*.
- January 6: Leon Foucault's pendulum experiment demonstrates Earth's rotation in 1851.
- January 8: Mercury at highest altitude in morning sky. It will be at magnitude -0.3 and reach a peak altitude of 15 degrees above the horizon at sunrise. From Cache Valley, it will be reasonably placed but still tricky to observe.
- January 8: Moon occults Antares (see article on p. 3).
- January 11: New moon.
- January 13: Moon at perigee (closest approach to Earth).
- January 14: *Huygens* probe landed on Saturn's moon Titan in 2005; it was the first successful landing in the outer solar system.
- January 16: Conjunction of



Freepik



Wikimedia Commons



Wikimedia Commons



Wikimedia Commons

Venus and Ceres. They will rise at 5:29 MST and reach an altitude of 16 degrees above the southeastern horizon in the constellation Ophiuchus before fading from view as dawn breaks. Venus will be magnitude -4.0 and Ceres will be magnitude 9.0.

- January 17: Pierre Mechain's discovery of Comet 2P/Encke in 1786.
- January 19: γ -Ursae Minorid meteor shower peaks, with radiant point in Ursa Minor.
- January 20: Moon in the Pleiades.
- January 23: *Voyager II* discovers clouds and winds in Uranus's atmosphere in 1986.
- January 25: Full moon.
- January 25: *Opportunity* rover landed on Mars in 2004, following the successful landing of its twin, *Spirit*.
- January 25: Joseph-Louis Lagrange was born in 1736. An Italian-French mathematician and astronomer, he made significant contributions to our understanding of classical and celestial mechanics.
- January 26: Hale Telescope at Palomar Observatory, the most advanced telescope of its time, saw its first light in 1949.
- January 27: Uranus ends retrograde motion.
- January 28: Space Shuttle *Challenger* accident in 1986. Seven astronauts were killed, including Christa McAuliffe, a New Hampshire schoolteacher. Because McAuliffe was the first schoolteacher-astronaut, schoolteachers across the nation watched the launch with their pupils at school, unwittingly exposing the children to the tragedy; many 1980s children have never forgotten witnessing this unforgettable and shocking event.

cont'd on p. 12

Upcoming, cont'd from p. 11



CleanPNG

- January 28: Johannes Hevelius was born in 1611. He charted the lunar surface, discovered four comets, and described ten new constellations, among other accomplishments.
- January 29: Moon at apogee again!
- January 31: Yuji Hyakutake discovered

Comet C/1996 B2 (sometimes known as Comet Hyakutake) in 1996, using binoculars.

- January 31: *Apollo 14* launch (the third manned moon landing) in 1971.

Thank you for helping
out at our fall
STEM Fairs
and
Star
Parties!



Clipart Library

ASTRONOMY FUN FACT



NASA SHARES NEW IMAGE
OF NGC 2264, A CLUSTER OF
YOUNG STARS RESEMBLING
A CHRISTMAS TREE

♡
💬
📍
...
🔖

365,911 likes

NASA has released a new image showcasing a star cluster resembling a 'Christmas Tree,' approximately 2,500 light-years away from Earth.

The collection of gas and stars, officially known as NGC 2264, has been named the 'Christmas Tree Cluster' by the space agency.

-

[#nasa](#) [#space](#) [#stars](#) [#christmas](#) [#christmastree](#)

[View all 2,309 comments](#)

December 22

Instagram



iStock and Creazilla

CACHE VALLEY ASTRONOMICAL SOCIETY 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 **Bonnie Schenk-Darrington, Secretary/Treasurer** at bschenkdarr@gmail.com.