

PRESIDENT'S CORNER

by Dell Vance



Ann-Maree Vance

November brought the cold weather with it. Must be close to winter. November was a good month for CVAS. We had a great meeting with Lyle Johnson talking about getting into astronomy (you will find some of his handouts included with this newsletter!). His talks are always very insightful. He talked about having Star Parties with his neighbors and what they could look at. I enjoy hearing about outreach that our members are doing in their neighborhoods.

We also had a very interesting presentation from Paul Ricketts, from the U of U, about the cosmos. It was a great discussion about time and space, and the list of events after the Big Bang. I must admit it is tough to get your mind wrapped around some of these concepts. An interesting nugget that I picked up is that space, which has no mass, can be traveling at speeds greater than the speed of light. Everything else, which has mass, is limited to the speed of light.

cont'd on p. 2

UPCOMING EVENTS

December

2023 Meeting

We are holding a holiday get-together for members and their partners on Friday, December 29, at 6:30 p.m. at President Dell Vance's home in Newton, Utah.



OldWorldChristmas.com

Lasagna will be provided, and members are asked to bring a salad, dessert, or bread to share. More information forthcoming via email.

January 2024 Meeting

Friday, January 12, at 7:00 p.m., in room 109 of the USU Engineering Laboratory Building. We will be having a show-and-tell of cool astronomy stuff we've received as gifts or purchased in the last year. If you have something you'd like to show, please let an Exec Comm member know so we can get you on the schedule.

Keep up to date by visiting our website:



Gallery YoPriceVille

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

Mike Monson and I had a great STEM Fair with the students at Summit Elementary School. We were kept busy the whole time. The school decided to start the event at 5:30 PM, but most of us didn't get the notice. We had students lining up as we were setting up. We passed out the NASA lithographs of deep sky objects, had a hands-on activity with rolls of paper to demonstrate the distances between planets in the solar system, had sky maps to hand out, a rubbing of the moon's surface for the younger students, and of course lots of discussion about astronomy. It was a good event. One takeaway from the event is to be sure that you check the time of the event as it draws closer. They may make changes.

This month we are planning our holiday get-together. It will be for members and a significant other. It will be at my house again here in Newton. The event will be on Friday, December 29, at 6:30 p.m. We are planning to have lasagna, with the members bringing a salad, a dessert, or a bread item. It should be a good time for us to talk. We will be sending out an email later requesting information about who plans to attend and what they would like to bring. Be sure to watch

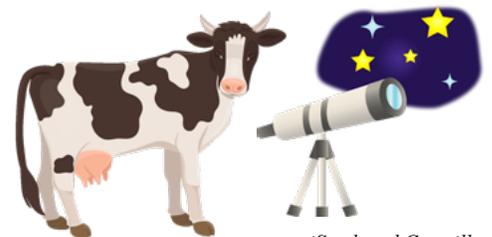
for the email.

I have been using a new camera that I purchased. It is a ZWO ASI294MC. Bruce recommended it as a good camera, and I am pleased so far with the results. As usual, there is a pretty steep learning curve to integrate it into my system. I have found that SharpCap and PHD2 don't "play nice" with each other. So I am starting to use another program, ASI Image, to capture the deep-sky images. I do like that the SharpCap Pro can do live stacking. Which works quite well for images that you don't need autoguiding for. Above is an image of the C25, Sculptor Galaxy. It has no guiding, just 34 images of 31 seconds each. I think this will be useful for star parties (inspired by Blaine's setup).

Thanks again for all your support.

Clear Skies,
Dell Vance

*Image courtesy
of the author.*



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ONE OF THE FEW BRIGHT WINTER STARS: LONELY FOMALHAUT

by Tom Westre

As we approach December, the evening southern skies lack many bright stars. However, one lone star does stand out, and that is the star Fomalhaut. Fomalhaut is also known as Alpha Piscis Austrinus—the brightest star in the constellation the Southern Fish.

From Utah skies, Fomalhaut is located above the southern horizon in an area of sky with few bright stars in the area.

Fomalhaut is a magnitude 1 star located 25 light-years from our sun. Fomalhaut is the 18th brightest star in the sky.

Fomalhaut is a triple star. The main star is a bluish white main sequence star. Fomalhaut B, also known as TW Piscis Austrinus, is an orange main sequence star. Fomalhaut C is a red dwarf. B takes 7 million years to orbit the primary star, while C takes 22 million years.

Our sun is over 4 billion years old; by comparison, Fomalhaut is a youthful 400 million years old. Its mass, luminosity, and diameter are greater than the sun's.

Astronomers have discovered several dust rings around the star, which are an indication that planets are forming around the star. In 2008, astronomers thought they had found an exoplanet orbiting the star. A few years later, it was determined what was thought to be a planet was actually a dust cloud that later dissipated.



Wikimedia Commons

For the next month, the star Fomalhaut can be seen a few degrees southeast of the planet Saturn in the early evening.



This article was originally a script for CVAS's UPR radio show, broadcast on Nov. 28, 2023.

Clipart World



Kalamazoo Astronomical Society

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

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.

SEEING DOUBLE IN AQUARIUS

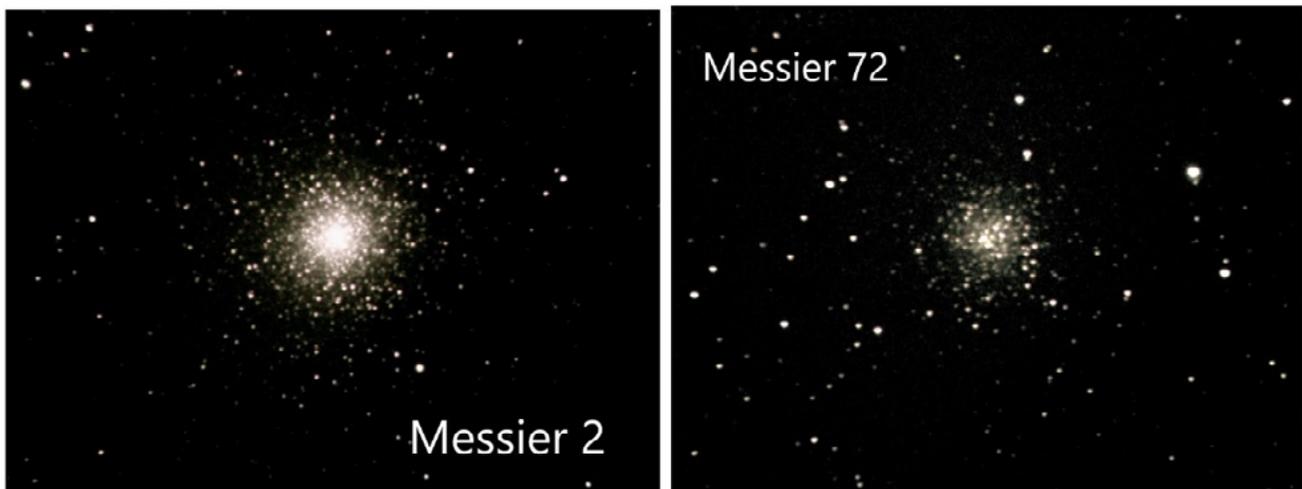
by Blaine Dickey

As the curtain of summer moves toward fall, the wispy Milky Way shifts westward, bringing in a new group of constellations and celestial wonders. The dwindling daylight hours of November and December allow for earlier stargazing sessions, making it more convenient to come back indoors at a sensible hour.

Aquarius, the water-bearer constellation, holds a fascinating collection of celestial double objects including binary stars, globular clusters, galaxies, and some unexpected surprises.



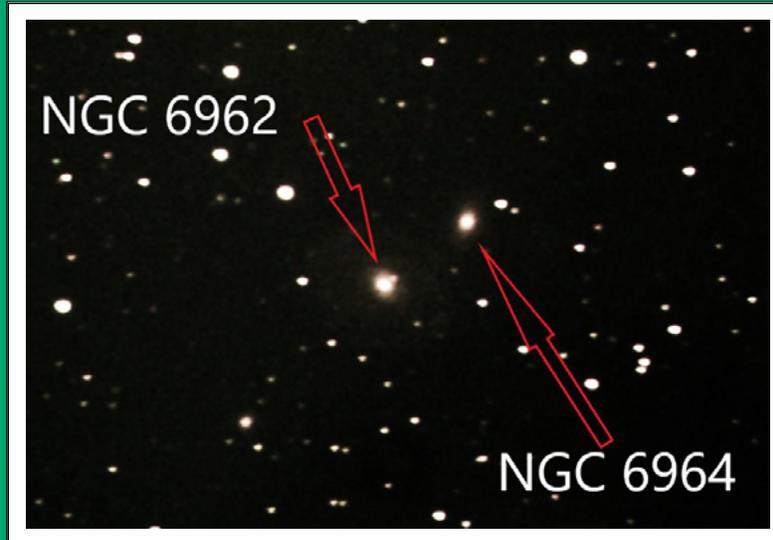
41 Aquarius is a binary star system composed of two stars with magnitudes of +5.3 and +6.7, separated by 5.2 arc seconds and located 233 light-years away. A mere 3.5 minutes to the north lies another binary star, HD210992, with magnitudes +8.9 and +11.6, separated by 12.3 arc seconds and situated 490 light-years away, forming a captivating pair of pairs.



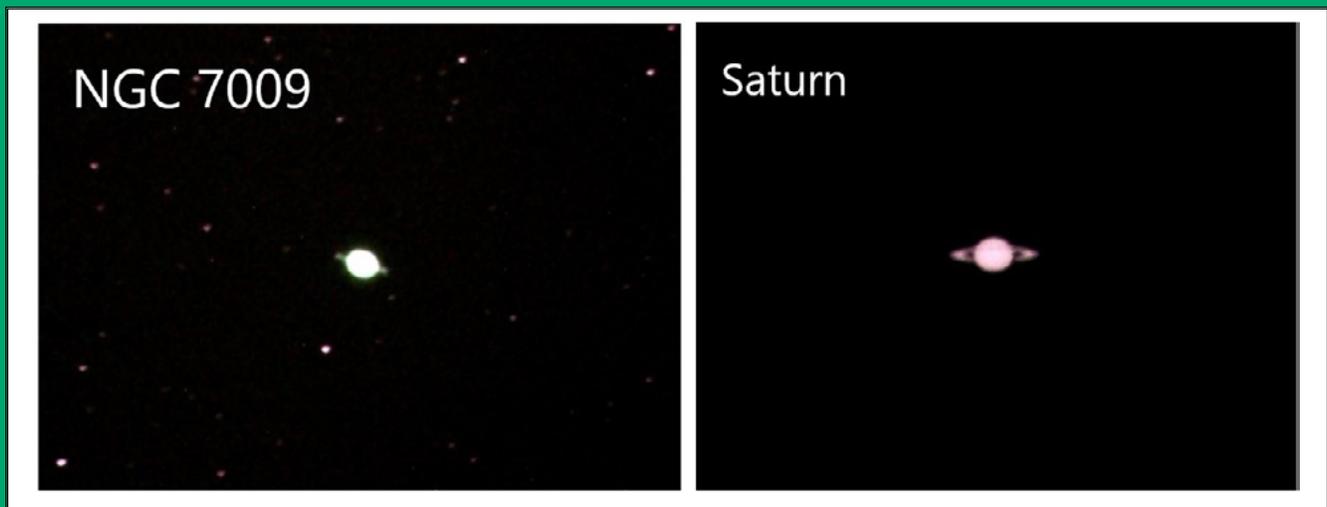
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Seeing Double, cont'd from p. 4

There are two main globular clusters in Aquarius, Messier 2 and Messier 72. Even though they are at similar distances, M2 at 55,000 light-years and M72 at 54,570 light-years from the sun, Messier 2 is much brighter at magnitude +6.3 compared to Messier 72, which is magnitude +9.3, making an interesting contrast.



The celestial pair is galaxies NGC 6962 and NGC 6964. NGC 6962 is a spiral galaxy located 180 million light-years away, while NGC 6964 is an elliptical galaxy at roughly the same distance. Both are receding from earth at over 1% of the speed of light. They are within 2 arc minutes, making it possible for them appear together in the field of view.



The final pair may appear similar but are vastly different in nature. NCG 7009, also known as the Saturn Nebula, is a planetary nebula in Aquarius. Its central line gives it a resemblance to the planet Saturn. Coincidentally, the planet Saturn in itself was also recently in Aquarius, as seen in the above image, which was taken on October 6, 2023. That evening, Saturn was only 74.85 light-minutes away, while NGC 7009 was a staggering 3200 light-years from earth!

Indeed, seeing double can be a delightful experience. Happy stargazing!

Images courtesy of the author.

ASTROPHOTOGRAPHY GALLERY

Recent Images by Club Members



Wednesday, February 8, 2023 19:19:14
Comet C/2023 F3 (ZTF)



Monday, January 30, 2023 21:58:27
Moon in conjunction with Mars



Solar Sunspots in 2023



Moon in conjunction with Jupiter
Moon in conjunction with Venus



Conjunction Moon and Jupiter



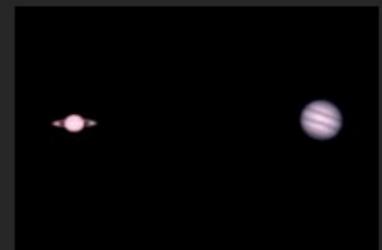
Annular Eclipse Nov. 14, 2023



Venus near the Pleiades



Comet C/2023 F1 Nishimura - August 9, 2023 at 5:51 am from Milville, Utah at magnitude about 6.0
09/07/2023 17:51



Saturn and Jupiter



Northern Lights



Comet 2023 E1 (Atlas)



Comet 12-P/Pons Brook



Mars passes through Messier 44
06/09/2023 00:56



Venus in the evening sky



Moon Titania occults star in Aries

The images on this page are some of the more notable solar system events that happened in 2023.

Images on pp. 6 and 7 courtesy of Blaine Dickey.

ASTROPHOTOGRAPHY GALLERY

Recent Images by Club Members



Messier 13



Messier 51

Messier 51 – Whirlpool galaxy



Friday, July 14, 2023 23:16:42

Messier 17 – Swan Nebula



Milky Way in Cygnus



2023ixf - Supernova

Supernova 2023ixf in Messier 101



Monday, July 10, 2023 03:35:18

Messier 27 – Dumbbell Nebula



Albireo



NGC 3628



Messier 16 - Eagle Nebula



Iota Bootis



Messier 64



Messier 20 – Trifid Nebula



Delta Bootis

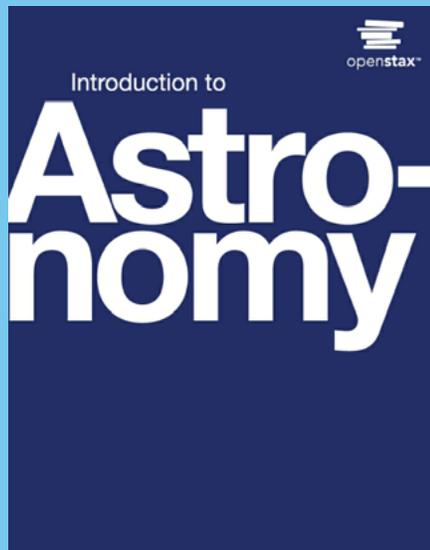


Messier 106



Messier 57 - Ring Nebula

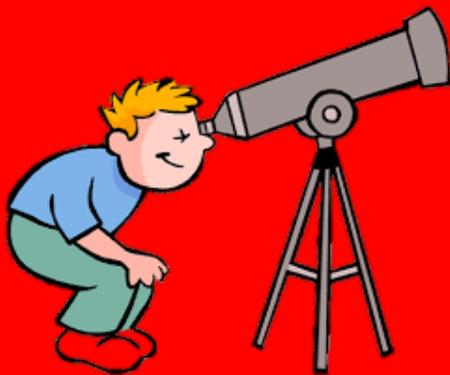
These images of the deep sky were taken during the past year with various optical set ups.



Amazon Kindle

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](#).

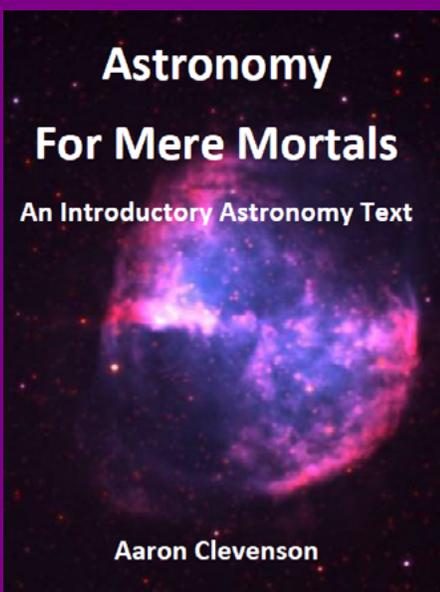


CoolClipart.com

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](#).



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.



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Need a quick astronomy fix?
Tune in to CVAS's astronomy show on Utah Public Radio!

UTAH SKIES

Every Tuesday at 4:48 p.m.
91.5 KUSU-FM (west Cache Valley)
89.5 KUSR (east Cache Valley)

You can also download the UPR app or listen to the livestream [here](#).
Check out our past radio shows [here](#).



EXECUTIVE COMMITTEE

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- Public Relations: Bruce Horrocks; bruceh@gembuildings.com
- Webmaster-Librarian: Tom Westre; twestre45@aol.com

The CVAS Executive
Committee Wishes You
Happy Holidays and Clear
Skies in 2022!

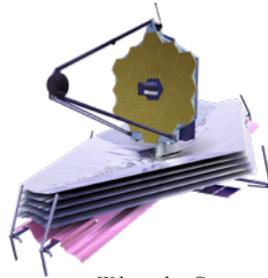


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UPCOMING ASTRONOMY EVENTS AND ANNIVERSARIES

by Bonnie Schenk-Darrington

- December 1: First color photo of Earth taken from space (Thor Missile) in 1959.
- December 2: *Pioneer 11* performs flyby of Jupiter in 1974.
- December 8: Mercury at highest altitude in evening sky. It will still be hard to see at 10 degrees above the horizon at sunset.
- December 11: Annie Jump Cannon born in 1863. Cannon, an astronomer and university professor, became integral to the effort to catalogue and classify stars.
- December 11: First recorded sighting of the Aurora Borealis in 1719.
- December 12: New moon.
- December 12: [Betelgeuse occulted by asteroid 319 Leona](#) at about 6:17 p.m. MST. It won't be visible from Cache Valley, unfortunately.
- December 14: *Mariner 2* performs flyby of Venus



Wikimedia Commons



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in 1962. It was the first space probe to perform a planetary flyby.

- December 17: Arthur C. Clarke born in 1917. A science fiction writer, he co-authored the screenplay for the film *2001: A Space Odyssey*.
- December 21: Winter solstice occurs at 8:27 p.m. MST.
- December 21: Launch in 1968 of *Apollo 8*, which was the first crewed spacecraft to orbit the moon and safely return to Earth.
- December 25: James Webb Space Telescope launch in 2021!
- December 26: Full moon.
- December 26: Mary Somerville born in 1780. Somerville was an influential astronomer and was nominated (jointly with Caroline Herschel) as the first female member of the British Royal Astronomical Society.
- December 28: Giuseppe Piazzi discovered the asteroid Ceres in 1800.

A LITTLE ASTRONOMY HUMOR



NASA successfully hurled an object into an asteroid at 14,000 mph to see if it could be knocked off course.

The James Webb telescope took a detailed image of the impact site.



Geek Universe
Memebase

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.