

CACHE VALLEY CLEAR SKIES



Volume 12 No. 8

June 1, 2025

<https://cvas-utahskies.org>

PRESIDENT'S CORNER **Dale Hooper**

Well, we are finished with our club meetings for this fiscal year. We finished off with a great presentation on the Parker Solar Probe by club Vice President Randy Jost. This was definitely an interesting and informative presentation. Now we are approaching the summer season with lots of cool objects in the sky, but shorter evenings.

On June 20th we are going to have our annual club solar party and potluck dinner at Willow Park. We will be in the same location, west of the zoo entrance, that we have used for the past few years. Solar observing will begin around 5pm and dinner will start at 6pm. The club will be furnishing pizza. Dell Vance has created a survey which you should have received from the club's groups.io email group on May 21st. Check your email and be sure to fill out how many people you expect from your family. We truly hope to see you there.

We are planning to have a few star parties this summer. The first one is planned for July 18th at the Newton Reservoir parking lot (Lat 41.898568, Long: -111.973790). This star party will be in support of the Utah Division of Outdoor Recreation (UDOR) Every Kid Outdoors (EKO) Adventure Challenge, and will allow kids to complete their Starry Skies challenge. We are also planning to have a club member only star party or two. Thus far, the most likely dates are August 15th and/or August 22nd. This will also likely be held at the Newton Reservoir parking lot.

I also wanted to revisit a couple things that I have discussed in previous President's Corners. The free image processing software SIRIL (beta 1.4) has added support for processing SeeStar mosaic images. So, I was finally able to process my NGC 3372 - Eta Carinae Nebulae image from OzSky. The Homunculus nebula is visible in the right-most part of the triangular section just to the left of the



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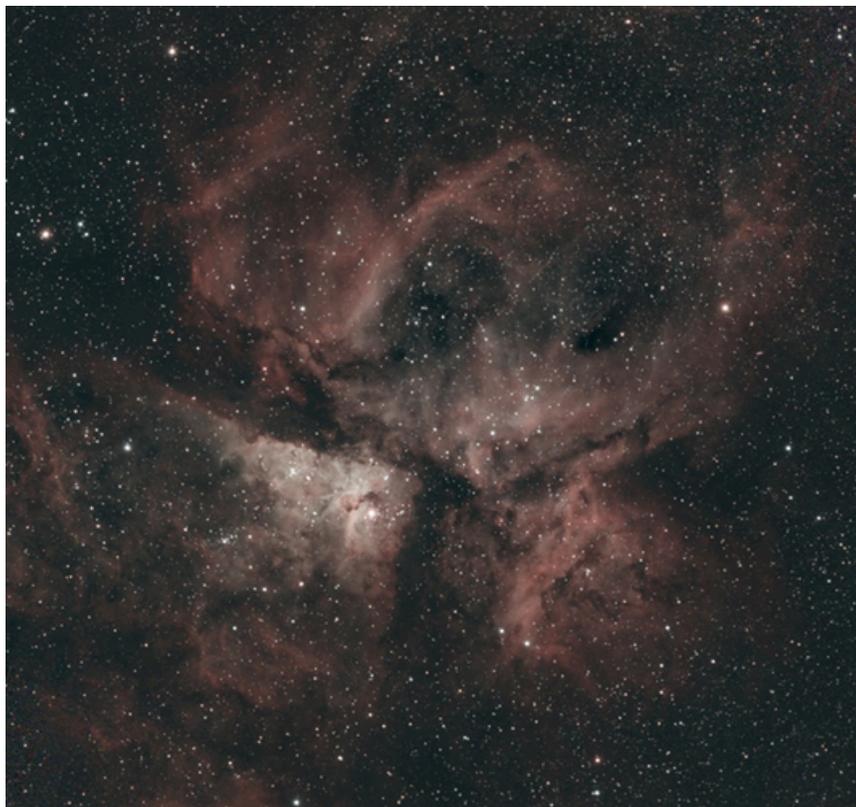
2.

center in the image. There is still a bit of “sketchiness” in the lower left and upper right corners of the image, due to the way the SeeStar collected the image data. But I will have to wait until I can go back before I can get more data for this image.

I also wanted to revisit an item from my President’s Corner in February. Saturn is now starting to rise earlier in the morning. In June Saturn will be visible by around 4am, in July it will be visible by about 2am and in August Saturn will be visible by around midnight.

Opposition for Saturn will occur on September 21st. As such, the rings are still fairly close to edge-on. This means that we can still observe transits for some of Saturn’s moons. Specifically, we can observe shadow transits of Saturn’s moon Titan. I recently read an excellent article by Bob King of Sky & Telescope about this very topic

(<https://skyandtelescope.org/astronomy-news/observing-news/titan-shadow-transit-season-underway/>)



NGC 3372 - Eta Carinae Nebulae, processed using SIRIL 1.4 beta-1

Like me, he stated that he has currently never observed a shadow transit of Saturn’s moon Titan. They are obviously fairly rare and can occur only near Saturn’s ring-plane crossings which is about every 15 years. However, for any given location they are even more rare than that. The transits occur earlier each day/night as the series of transits progresses. This means that any series of Titan shadow transits is only visible from one side of the Earth. The current transit series is favorable for us, as is the 2038-39 set of transits. But, in 2054 you would need to travel to the Middle East or India to see the Titan shadow Transits. This means it is certainly best to start now!

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Star Party

May 31 st	Spring Hollow groups site	9:45pm	50 campers
June 17 th	Hull Valley Scout Camp	9:45pm	20 YW
July 18 th	Newton Reservoir learn more: https://cvas-utahskies.org/star-party/	9:30pm	This supports Every Kid Outdoors - we will need support.
Aug 15 th or 22 nd	Newton Reservoir	9:00pm	Club only

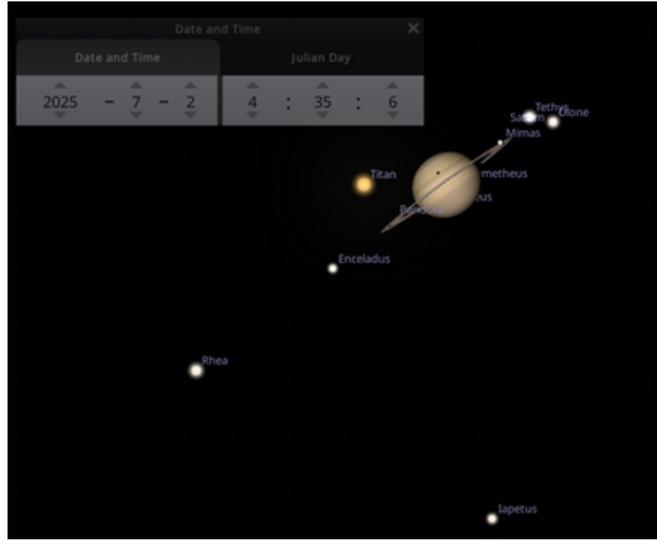
Club Meetings

Club meetings will resume in September

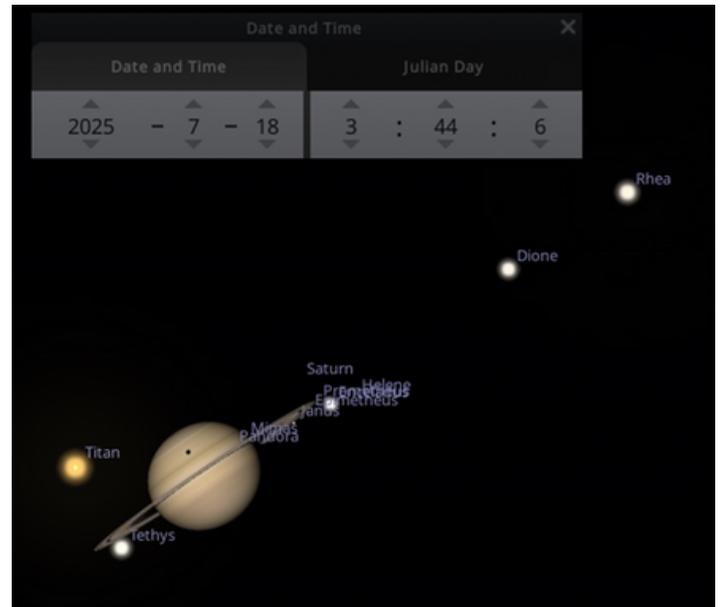
We hope you are planning to attend our club’s annual Solar Party and Potluck Dinner on June 20th! This will again be held at Willow Park in the pavilion west of the zoo entrance. We will start observing the Sun around 5pm and dinner will be served at 6pm. This is for the entire family.

Each group is encouraged, but not required to bring a salad or dessert to share. You should have received a survey from Dell Vance on May 21st. We’d like to get an accurate count of how many people will be attending, so we would prefer that you fill out the survey. If you can’t locate the email with the survey you can send an email to dchooper5@gmail.com. Please indicate how many people will be attending and if you are willing to bring a dessert or salad.

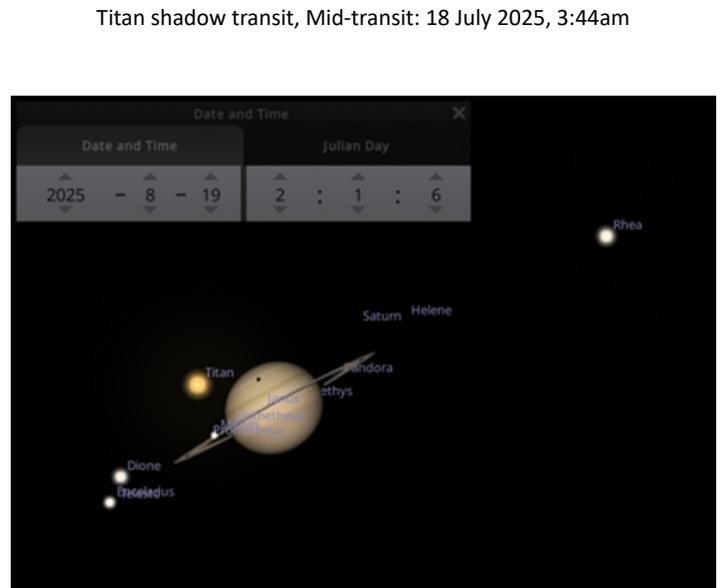
Upcoming Titan Shadow Transits (MDT)			
Date	Start	Mid-Transit	End
June 16th	2:21am	5:24am	8:00am
July 2 nd	1:40am	4:35am	7:03am
July 18 th	1:00am	3:44am	6:05am
Aug 3 rd	12:25am	2:52am	5:04am
Aug 19 th	11:52pm (8/18)	2:01am	4:00am
Sep 4 th	11:25pm (9/3)	1:09am	2:50am
Sep 20 th	11:09am (9/19)	12:20am	1:34am
Oct 5 th		11:32pm	



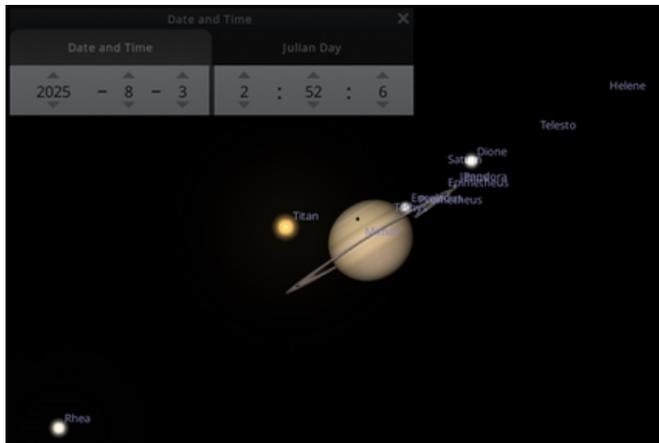
Titan shadow transit - 16 June 2025, 4:24am



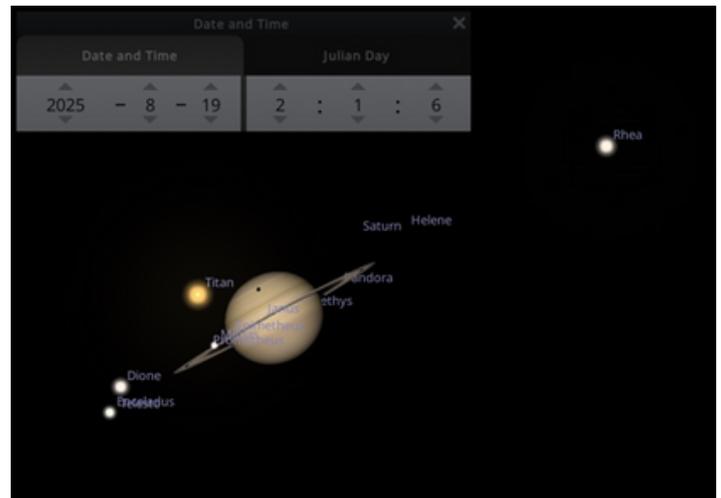
Titan shadow transit, Mid-transit: 02 July 2025, 4:35am



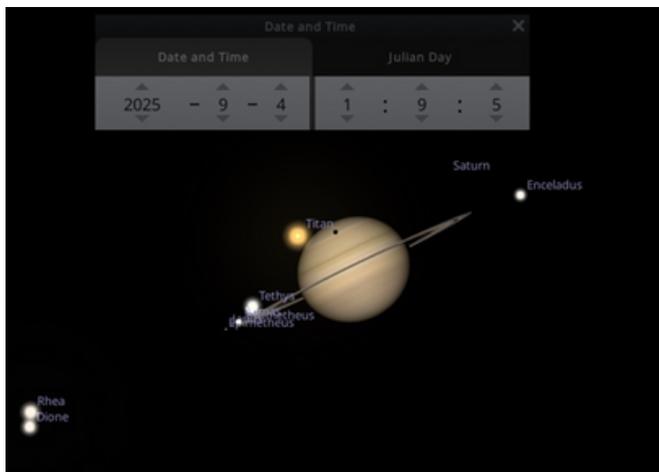
Titan shadow transit, Mid-transit: 18 July 2025, 3:44am



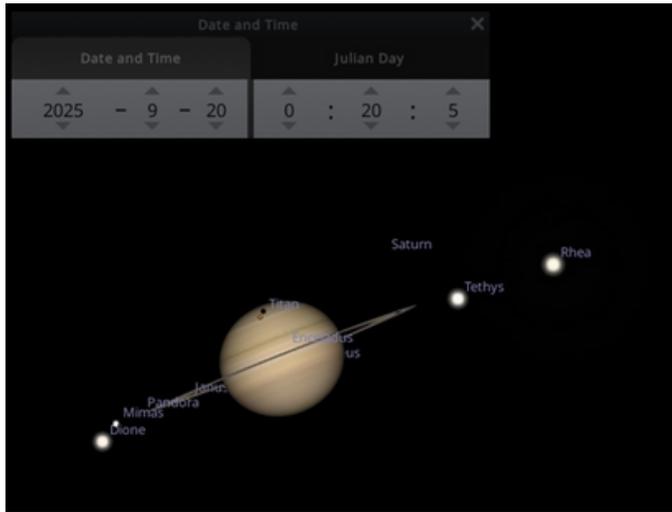
Titan shadow transit, Mid-transit: 03 Aug 2025, 2:52am



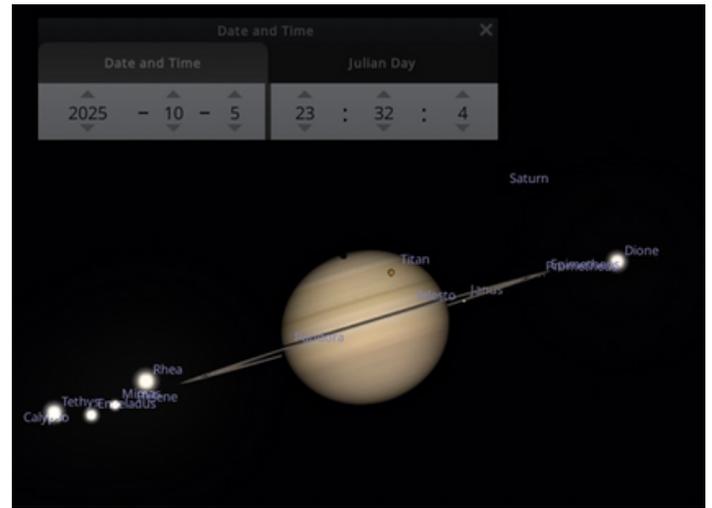
Titan shadow transit, Mid-transit: 19 Aug 2025, 2:01am



Titan shadow transit, Mid-transit: 19 Aug 2025, 2:01am



Titan shadow transit, Mid-transit: 20 Sep 2025, 12:20am



Titan shadow transit, Mid-transit: 5 Oct 2025, 11:32pm

I have created a chart of Titan shadow transit times (based on Bob King's chart) using our local (MDT) time rather than UT. I have also included Stellarium simulation snap-shots for each of the remaining Titan shadow transits. For all but the June 16th transit, the simulation is for the mid-transit time. In mid-June the sky is fairly bright at 5:24am. The beginning and/or end times for some of these transits will not be visible from Cache Valley or will occur during daylight. Of course, if your telescope tracks and you are already observing Saturn you can probably follow it until the end of the transit.

For the September 20th and October 5th shadow transits, Titan will also be crossing the face of Saturn at the mid-transit time. Also notice that as the transit season progresses, the shadow of Titan appears further and further higher (north) on the face of Saturn. This is because Saturn is drawing away from the location in its orbit where its seasons change and the rings are edge on.

In 2026 we won't be able to see any more shadow transits, but the rings will be more open. I'd say that is a pretty reasonable consolation prize.

Clear skies!

Boötes Void and other Empty Spaces

Often, I find myself kind of bored and just looking out a window wondering what to do the rest of the afternoon and my wife will say, "What you are looking at?". My response is always the same, "Oh, nothing". Maybe she just says that to get my attention or let me know there are plenty of things to do around the house if I am really that bored. Most nights when I go out to use my telescope I have a small list of possible targets that I think would be really cool to look at. The other day I just happened to see a short article on Boötes Void and thought it is kind of interesting that there are some space objects that would never be on my list of

possible targets because there is nothing there to look at. Even with the fact that if I pointed my telescope at some of these objects that have nothing that will show up on my camera, I find them kind of interesting. Case in point is Boötes Void.

I looked it up on Wikipedia and it had the following information about this area:

The Boötes Void referred to as the Great Nothing is a roughly spherical region of space in the vicinity of the constellation Boötes. It contains just 60 galaxies, a figure significantly lower than the approximately 2,000 galaxies expected for an area of comparable size. With

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a radius of 62 megaparsecs (nearly 330 million light-years), it is one of the largest voids in the visible universe, and is often referred to as a "supervoid". It was discovered in 1981 by astronomer Robert Kirshner as part of a survey of galactic redshift. Its center is located 700 million light-years from Earth, at right ascension 14h 50m and declination 46°.

I guess when there is really nothing in this seemingly empty part of the universe, there really isn't much more to say about it. In the article I was reading it mentioned that if you were in the center of this void, space would look pretty dark. No stars to twinkle in the dark sky and so for any astronomers who have the misfortune of living in this area, there just wouldn't be that many great targets to look forward to observing. While we may think that even our part of the sky has lots of targets, voids such as the Boötes Void are more common than we think. While this is the largest single void, other smaller voids actually make up about 80% of the universe.

What is the reason for these voids and why is the matter not more evenly distributed? The best explanation for this is similar to what happens when you put the bubble bath in the tub to enjoy a nice time of relaxation. As the universe was forming in its early phases, areas of denser matter started to form together creating "filaments" of matter much like the edges of the soap bubbles in your tub. As the universe expanded these areas of matter held together creating a massive cosmic web of areas with galaxies and other clusters of matter and other areas with less matter resulting in the large void areas. The presence of dark energy is also credited with some of the reasons for the formation of these void spaces in our universe.

So the next time you are looking for something fun to look at I would think we owe a little bit of appreciation to these voids that pushed a little bit more matter our way and created some somethings with a few more photons to come our way.

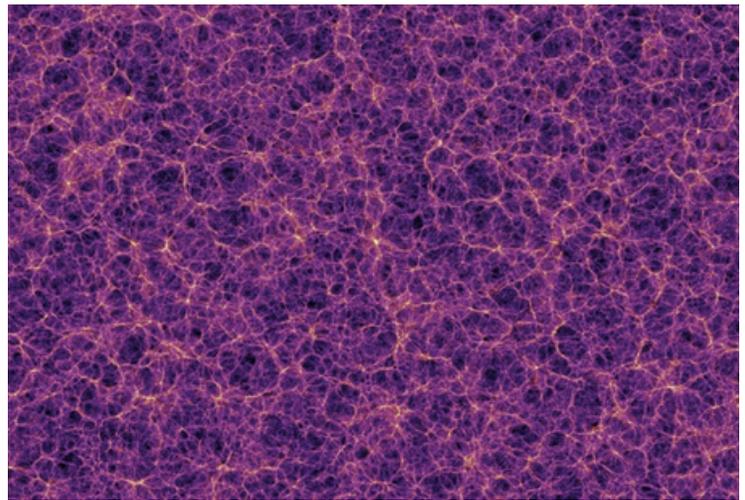
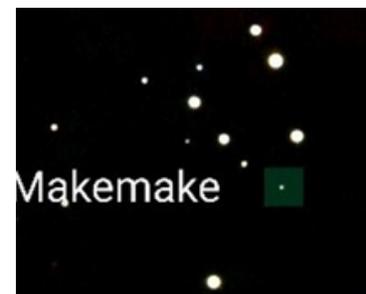
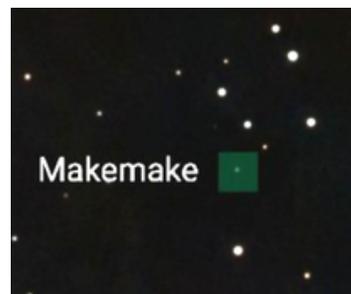


Photo Credit: Millenium Simulation Project

-Bruce Horrocks

Recent Observations by Blaine Dickey

Having been aware for some time of a group of dwarf planets in the Kuiper Belt, I thought I would see if I could image one of them named Makemake. The difficulty in doing this is the fact that it is impossible to distinguish a dwarf planet from a star unless you can see its motion over several nights. I chose Makemake because it was visible on the nights I chose to image it. You can compare the two images below to see its motion over the course of 2 days. I put a green box around the dwarf planet to make it easier to see the motion. The first image was taken on May 1st and the second on May 3rd. At the time it was imaged it was about 52 Astronomical Units from earth at magnitude +17.1. The images below are 17 and 20 minutes respectively on my ZWO SeeStar S-50.



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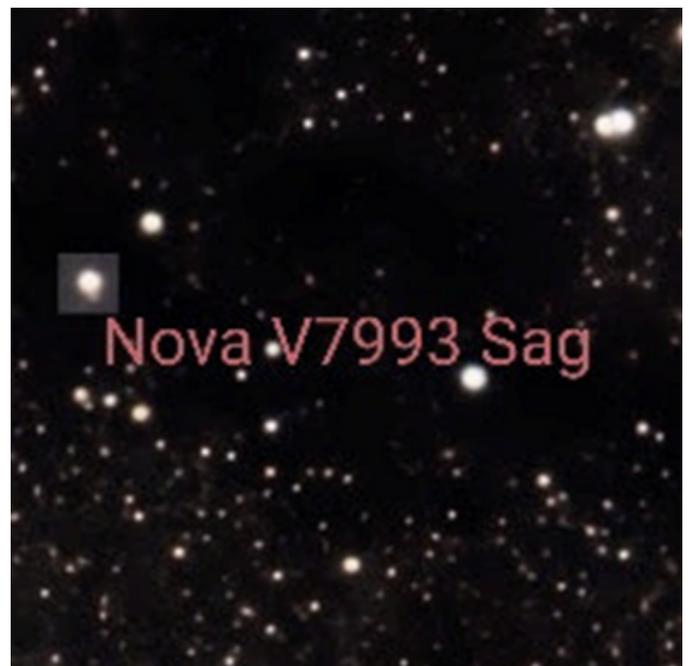
When comet C/2025 F2 (SWAM) first appeared it looked like it was going to develop into a bright comet visible first in the low dawn morning sky and then in the evening sky as it swung towards the Sun. At its closest it would be only .33 Astronomical Units from the sun; almost as close as the planet Mercury gets from the sun at its very closest. To see it in the morning sky I had to arise early and get everything set up. Excitedly I commanded my SeeStar to find it. Disappointedly, the coordinates in the SeeStar were off and I fiddled around with it and only saw the comet through a space between the apple tree limbs. The next day I looked up where the comet would be the next morning and entered the coordinates into my SeeStar. Getting up early again I sent the Seestar towards the comet. This time it was successful and I was able to get an image of the green comet before dawn interfered too much. As the comet swung around the Sun it began to fall apart. Apparently it couldn't stand the heat. When I looked for it in the evening sky it was too dim to see.



I imaged the planet Mars on the evening of May 3rd as it passed by the open cluster Messier 44. To my surprise I saw Deimos, Mars smaller moon, 22 arc seconds above an overexposed image of the planet as seen in the images below. Deimos was magnitude +16.4 at the time these images were taken. It is only about 7.5 miles in diameter.

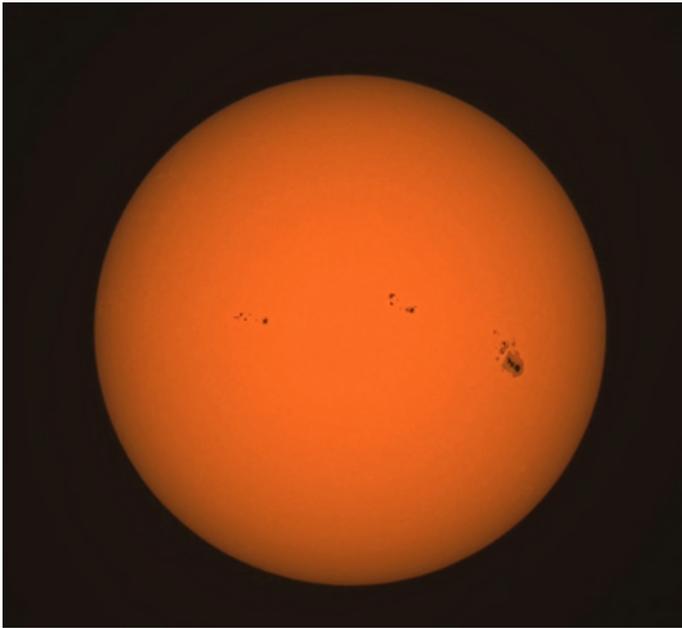


I became aware of a new Spring Nova V7993 Sag indicated in the small square in the image below. This is a binary star that funnels material from its companion until it accumulates enough material causing a nuclear blast, thus enabling us to see it.



I took some images of the Sun on May 7. It had an unusually large sunspot as well as several smaller ones. Often large sunspots produce solar flares, but not so with this one.

Below is an image of the young moon near the Pleiades. This was taken on the evening of April 28 with my NIKON 5100 DSLR. Earthshine is very evident in this image.



These images show that the universe is a very dynamic place where something is always happening. I hope you enjoyed these recent images taken during the past several months. If one records these events as they happen they are yours forever to enjoy.



Questions? Email:
cvastrosociety@gmail.com



Cache Valley Astronomical Society Presents:

A Public Star Party!

In Support of the Every Kid Outdoors Adventure Challenge

(<https://recreation.utah.gov/eko/>)

This event is free and is open to the entire family. In addition to telescopes where you look through an eyepiece we will also have smart telescopes which display the image on a screen. So even if you have a physical disability which prevents you from looking through an eyepiece - you will still get to observe the wonders of our beautiful universe!

This event will allow you to complete the Starry Skies Challenge.

The star party will be held in the south end of the Newton Reservoir parking lot at 41°53'54" N (41.89833), 111°58'24" W (-111.97334). Please see the map below, which includes where to park. Observing will begin around 9:30pm. [Since this is a star party, please avoid pointing white light flashlights at telescopes or other observers. If possible, please turn off any white light flashlights. Also, this event may be cancelled in the case of inclement weather. Please watch for details at <https://cvas-utahskies.org/>].



Friday, July 18, 2025, at 9:30 p.m.

Newton Reservoir (Park at the north end of the parking lot; party at the south end of the parking lot.)

Free and open to the public

Sponsored by the Cache Valley Astronomical Society

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 **Dell Vance, Membership Coordinator** at avteam.dell@gmail.com.