

CACHE VALLEY CLEAR SKIES



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<https://cvas-utahskies.org>

PRESIDENT'S CORNER

Dale Hooper

I sincerely hope that Santa Claus was able to fulfill all of your Christmas wishes, especially those that are astronomy related. I noted in mid-December that the SeeStar S50 was sold out at all the various online places I checked. Hopefully this is an indicator that there will be a budding crop of excited amateur astronomers from the younger ranks. We had a great time at our annual Winter Festival and I truly appreciated everyone that came. We really missed those of you that weren't able to make it. I think the chimes really are becoming a tradition with our club. We played Christmas song after Christmas song for quite awhile. I'm definitely excited to hear the presentation for our January meeting. Our speaker will be Paul Ricketts from the Salt Lake area. He has done a great job speaking to us before and I'm sure that this will be no exception. He will be speaking to us about black holes so this will be guaranteed to be a fascinating meeting. I wanted to mention three significant things that are happening in astronomy in 2025. The first two are celestial events that I think you will be interested in observing. The first event is a total lunar eclipse on International Pi Day – which is March 14th for you that aren't familiar with this holiday. For us most of it actually occurs on March 13th. First contact with the umbral shadow will begin at 10:09pm on March 13th, with totality beginning at 11:26pm March 13th. Greatest eclipse will occur at 11:59pm on March 13th and totality will end at 12:32am March 14th. Last contact with the umbral shadow will occur at 1:48am March 14th. Hopefully this will be a nice clear evening. When Saturn returns from conjunction with the Sun in March 2025 it will appear ring less! This is because Earth will be passing through the plane of Saturn's rings, which occurs every 15 years. It will remain essentially ring less until next November. Personally, I like Saturn much better with rings, but it is still a sight worth beholding so that you can be grateful for the views we do get of Saturn's rings. Many a budding astronomer got their start by first observing Saturn. I wonder if the stark view of Saturn with no rings can have the same effect?

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SeeStar and (over exposed) Norwegian Sun

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The final thing I wanted to alert you to is something much closer to home. The Astronomical League holds a convention every year. In 2025 this convention known as AstroCon will be coming to Ruby's Inn at Bryce Canyon June 25th through 28th. I've been to three of these conventions and they have always been a real treat. Blaine Dickey and I were both able to go to the convention the last time it was held at Bryce Canyon. There are always very interesting presentations and great star parties. The original founder of our club, Dr. Shane Larson will be speaking about: "A Storm of Stars: Knowing the Milky Way from Star Counts to Gravitational Waves". Dr. Stacy Palen from Weber State has spoken to our club before and she will be speaking about Photometry. There will also be many other great speakers. In addition there will be a lot of workshops on topics such as beginning and advanced astrophotography, sketching, observing tips and many more. And of course, there will be great star parties under the very dark skies of Bryce Canyon. You can also volunteer to help at the star parties. If there is any way you can make it – I know you won't be disappointed. You can check it out at: <https://astrocon2025.org/>
Clear skies, Dale.

Club Meetings

- January 17th 7 pm
Room 107 of the Engineering Lab Building
on the USU Campus at 7pm
 - 3rd Friday of the month

STEM Nights

- North Park Elementary Jan. 9th
- Wellsville Elementary Jan. 22th
- Canyon Elementary Feb. 6th
- Cedar Ridge Elementary
March 13th
- Sunrise Elementary March 18th
- Greenville Elementary March
24th

Celestial Wonders Captured by Blaine Dickey

The winter sky is often overlooked due to the cold weather, which makes it uncomfortable for stargazing. However, many of nature's most stunning sights belong to the winter season.

For example, NGC 253, also known as the Sculptor Galaxy, is a large, bright galaxy similar to the Great Andromeda Galaxy. Although it is somewhat farther away at 12 million light years compared to M31 at 2.5 million light years, it is still a bright object with a magnitude of +8. NGC 253 should be visible with binoculars and small telescopes in the constellation Sculptor. The image below, captured with a ZWO Seestar S50, is a 46-minute exposure that reveals significant detail throughout the galaxy.



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Messier 31 and its satellites, Messier 32 and Messier 110, are featured in the following image. The exposure lasted 58 minutes, making the dark lanes around the edges of this large galaxy easily visible. This was the first mosaic image I had taken with my Seestar. This allowed all three galaxies to be visible in the same frame. The mosaic feature allows one to take an image 4 times larger than the normal view. It also takes longer to take the image.



The Helix Nebula (NGC 7293) is an object I had not imaged before. This 62-minute exposure, taken with an included light pollution nebula filter, reveals many details of this beautiful planetary nebula. It is located in the constellation Aquarius.



Finally, the California Nebula (NGC 1499) is clearly shown in this 42-minute exposure. This nebula is challenging to observe with a telescope due to its low surface brightness. It is a region of gas and dust located approximately 1,000 light years away. The Seestar's AI capability reduces much of the background noise, allowing for post-processing with Google Photos, as these images were. For a 2-inch aperture telescope, my judgment is that it performs quite well. This photo had an exposure time of 39 minutes.



One of the fantastic features of the Seestar is its convenience. You can capture breathtaking images like these while comfortably seated in your warm home, watching the image gradually appear on your phone or tablet. When you're done for the night, simply step outside, grab your Seestar with one hand, and bring it back inside. It's really that simple!

Journey to the Stars

By Jeff Clayton

I entered my astronomy journey very early. My first spoken word was 'moon'. According to my parents I was interested in the night sky from the day I was born. Anytime I saw the moon at all, I would point at it and say "moooooooooon!" I have always loved the night sky, and felt a built in curiosity for the cosmos from my earliest memories.

My father got me my first telescope when I was 7 or 8 in the early 1980's, A Meade 4" Newt, and we got involved in star parties sponsored by the old Hansen Planetarium in SLC. I have many, many great memories of camping and star parties from a very early age. Most of my books as a child were astronomy related and I was always learning anything I could about astronomy. As I got older and into my teens and 20's I lost touch with the astronomy activities but always retained my passion for the knowledge and study of astronomy although I did not have a telescope at that time.

Fast Forward, I got married to my beautiful wife Emily in 2012. We both enjoy the outdoors and began camping right away. On our very first camping trip, all I could think was how nice it would be to have a telescope for enjoying the dark skies of the camp sites of central and southern Utah. I wanted to share my knowledge and give Emily the experience of seeing for herself, the glories of the universe. We purchased a 10" Dob and started enjoying stargazing during our camping trips. I then made the life altering (financial of course) decision to take a picture of the moon with my cellphone through the Dob. Thus my obsession with astrophotography, and photographing the cosmos began. I immediately started looking into better ways and techniques to improve the quality of the images I was taking and through this pathway of discovery, I fell into DSO (Deep Space Object) imaging. I purchased an Orion ED80T CF telescope on an Atlas EQ-G mount and started learning my techniques to image deep space nebulas. My first dedicated camera was a QHY8L color CCD camera and started hanging out at high elevation locations for full nights of imaging. My hangout was Bald Mountain Pass, east of Kamas, which is the highest paved road in Utah at almost 11,000 feet. I would spend entire nights watching the skies through my imaging gear.

In 2016, I took a job here in Logan that brought us up to Cache Valley. I am a Controls Engineer and have enjoyed a career focused in electronics and programming. My job requires me to be on call 24-7 and so I was not able to spend entire nights on top of a mountain imaging. So I sold my gear and took an unplanned hiatus. Then around 2 years ago I decided to try imaging again this time focusing on building an automated imaging rig so that I did not have to remain present all night like before. I discovered the astrophotography hobby had progressed much in the 6 years I had been away. With gear like the ASI AIR and auto focusing hardware I realized that I could get back into the hobby again.



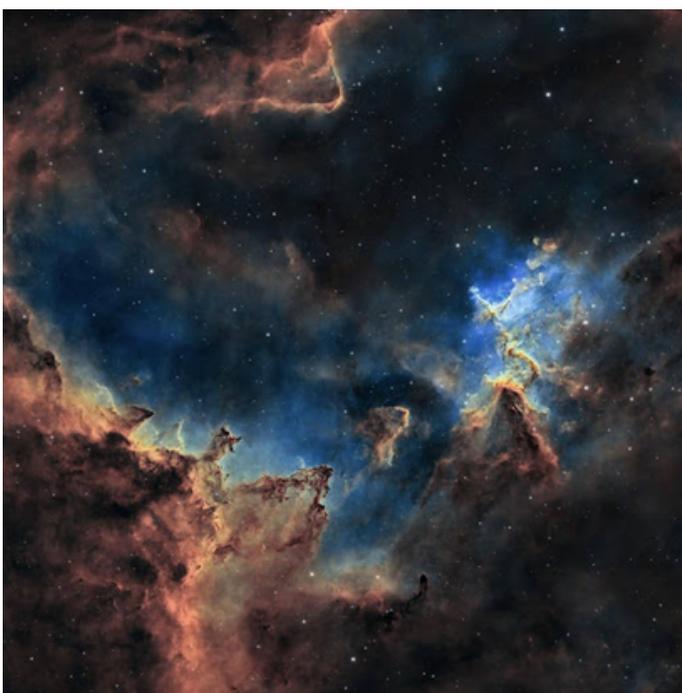
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I decided to do narrow band imaging this time to combat light pollution and to take a try at a different type of imaging. I have spent countless hours learning the techniques of acquiring the data to produce high(er) quality images and also learning to use the dedicated post processing software of Pixinsight.

My current goal in astrophotography is to learn to produce better and higher quality images. I have found that the 2 areas of focus that have helped me achieve this goal is learning to process my data better and taking more data than just a single nights worth. I spend a lot of time learning new techniques in Pixinsight. It is very complex software that pays off when it is used properly. I plan to continue my astrophotography hobby now for years to come and I enjoy every minute of the discovery for myself, of the beautiful objects in the night sky.

My very first DSO image for comparison of where I started:



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Astrophotography Gallery

Recent Images Taken by Club Members



California Nebula

Here is an image I got last month of the California Nebula using a Esprit 150mm telescope and the ZWO2600MM camera with only Ha and Sii narrowband filters. This is a 2 panel mosaic and was process in Pixinsight. -Bruce Horrocks



The Orion Nebula Up Close

This is an image of the Orion Nebula taken recently with a 10" cassegrain telescope with the Player-One Saturn-M using lucky imaging to gather as much detail as possible while only having 2 minutes of exposure. -Dean Louviere

Flaming Star Nebula

The image on the bottom left is the Flaming Star Nebula taken with an 8" f/5 newtonian with about 18 hours of total exposure over one week

Jupiter

The image on the bottom right is Jupiter taken recently with my 10" cassegrain telescope with no barlow lenses at 3000mm at f/11. This image was derotated in winjupos with 18 frames of 45seconds 30% stacking with ok seeing.

