

CACHE VALLEY CLEAR SKIES



Volume 12 No. 3

December 1, 2024

<https://cvas-utahskies.org>

PRESIDENT'S CORNER **Dale Hooper**

I hope every one of you is having a fantastic holiday season and I hope that you have been good so that Santa can bring you the astronomy gear that you desperately need. We are looking forward to getting together for our annual winter social. It will be December 5th at 6 pm. This year our party will be held at my house at 458 North 350 East, Hyde Park. The main course will be Hawaiian Haystacks – so you can put them together how you like. We will also continue the tradition started by Bruce, of playing our favorite Christmas songs on chimes. You can cheer everyone on if you would rather not participate. But it should be fun! Dell has put together a couple polls related to the Christmas Social, so be sure to respond to those. We will let you know further details via groups.io as it gets closer.

You may recall that last month I mentioned I would be making my first trip to the southern hemisphere in October to November. I had a great time, and of course, I took my SeeStar S50 with me. I wasn't exactly sure what to take for visual use since I wanted to keep size and weight down and my 10x50 binoculars were out of collimation. I opted to take my 2x52" bug-eye binoculars" which are really good for looking at wide fields. I made a couple attempts to use my SeeStar while I was on the boat – both attempts were unsuccessful. Even when the boat was docked, since the SeeStar doesn't use an autoguider – there was just way too much motion to even get a single subframe. I was able to get a rather light-polluted visual view of the large and small Magellanic clouds from the boat. My trusty southern hemisphere planisphere helped me identify Canopus and Achernar. SkySafari helped me locate the globular cluster 47 Tucanae (NGC 104) so that I could see it with the bug eye binoculars. Orion was so much higher in the sky than I was used to – but it was upside down! One morning I got up at 4 am so that I could see the Southern Cross, Alpha and Beta Centauri and with the bug eye binoculars, I could see a smudge of Omega Centauri.

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SeeStar and (over exposed) Norwegian Sun

Executive Committee

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I had one good possibility in the southern hemisphere. We were spending the night in Bora Bora. Unfortunately, this is a tender port, where the ship is parked in the water and you have to take a tender boat back and forth to get to the shore. The last tender boat was at 11 pm so that realistically gave me between 7pm and 10:30pm to do some imaging with my SeeStar. Fortunately, the night was relatively clear. The area around the pier was pretty well lit up, but I found a place on a jetty at the end of the pier that was reasonably dark and had a good southern horizon. The first picture shows you a view from the SeeStar out to the very well-lit Norwegian Sun.

When I took the picture of the SeeStar, I was imagining NGC 6188, the Dragons of Ara. I truly wish that I had noticed this object earlier. It is an amazing nebula, but I had to image it with an elevation between 15 degrees and 7 degrees! My image really doesn't do it justice. I had a limited amount of time to image, but I opted to get several objects which meant I wasn't able to get as much time on any object as I would have liked. All of the images have been processed with Siril. I imaged NGC 6188 for 30 minutes since it was so low. I definitely wanted to get an image of 47 Tucanae (NGC 104) because it is the second-brightest globular cluster! However, it was pretty close to the meridian by the time I started imaging. Unfortunately, the SeeStar doesn't play well with objects that are right at the meridian due to field

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NGC 6188 - the Dragons of Ara (30 minutes)



NGC 104 - 47 Tucanae (18 minutes)



NGC 346 (in the SMC in the constellation Tucanae) (32 minutes)

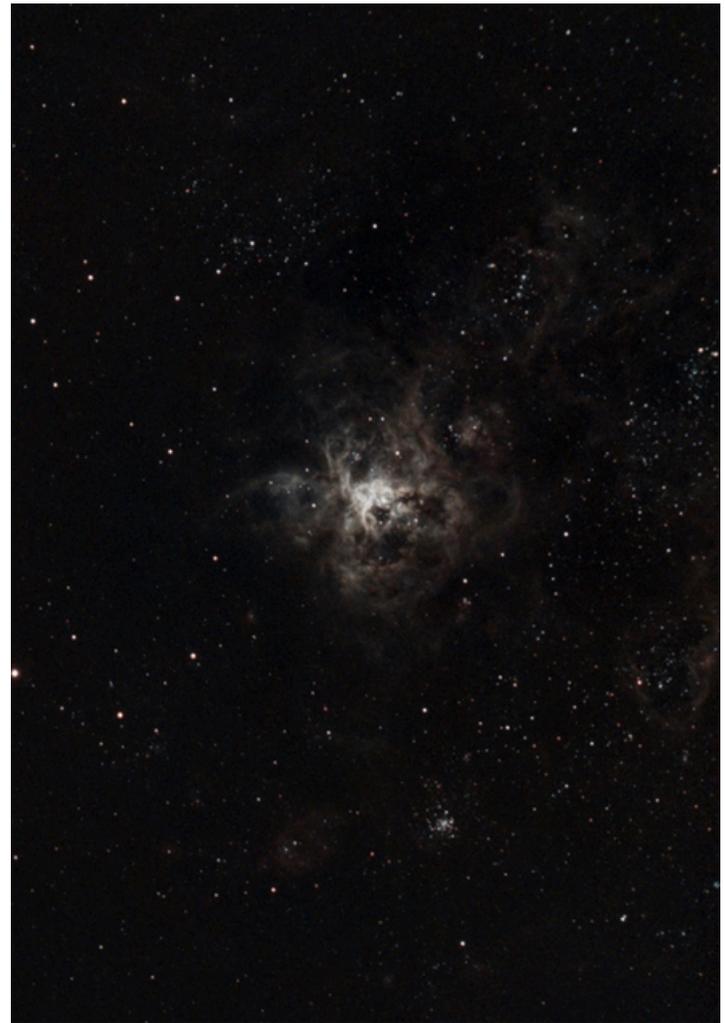
Club Meetings

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

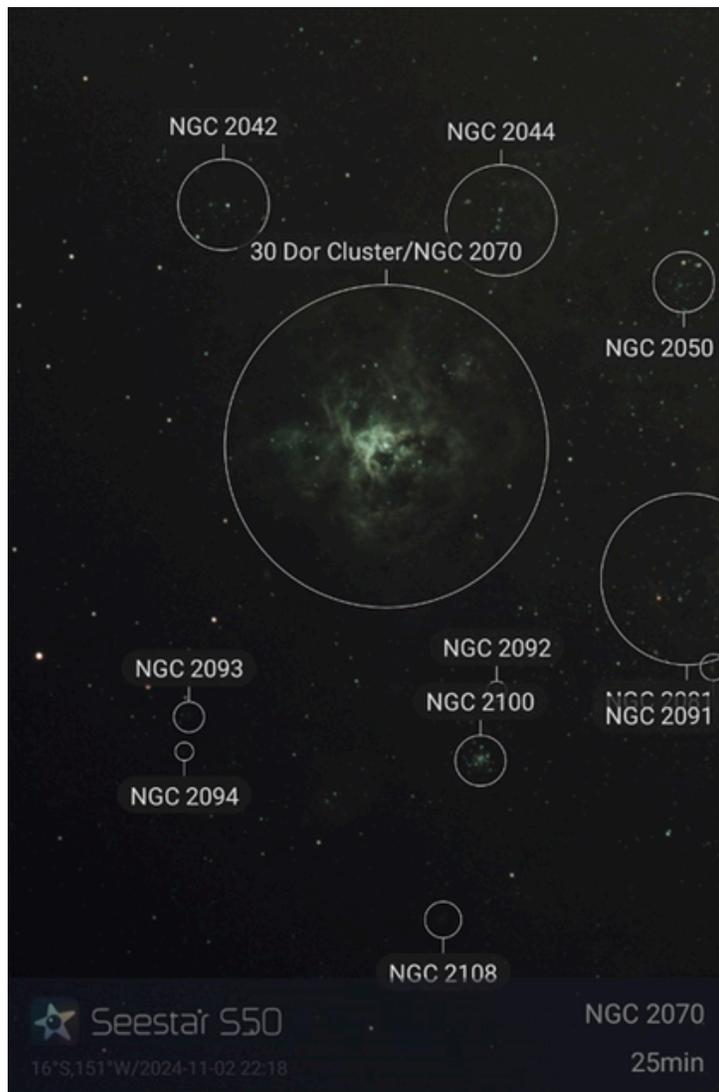
STEM Nights

- 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

rotation. It was dropping a fair number of frames, so I opted to only image it for 18 minutes. I really wanted to image something from the small Magellanic cloud (SMC) as well as something from the LMC. So, in the SMC I opted for NGC 346 which is a young open cluster and associated nebula. For the LMC I felt that it was a must to image the Tarantula Nebula (NGC 2070). Unfortunately for me, it was starting to get late by the time I started imaging it. I was beginning to make my wife a bit nervous that we would miss the last tender boat so I was only able to image the Tarantula Nebula for 25 minutes. I've also included the unprocessed image of the Tarantula nebula with object annotation turned on, so you can see the list of all the objects that share this field of view! My wife was a real trooper to join me and she had fun observing crabs and fish in the clear shallow water of the jetty.



NGC 2070 - Tarantula Nebula (LMC in the constellation Dorado) & friends (25 minutes)



Annotated and unprocessed image of NGC 2070 and friends

I've decided that I absolutely MUST go back for more southern sky observing. Some time in the not to distant future I plan to join an Oz Sky excursion (ozsky.org). They take you to some really dark skies in Australia and let you observe the wonders of the southern skies with some really nice scopes that range from 150mm binoculars to a 25-inch Dobsonian for a VERY reasonable price.

Clear skies,
Dale.



**Don't forget our Winter Social
Thursday, December 5th at
6pm. RSVP through the email
that was sent out.**

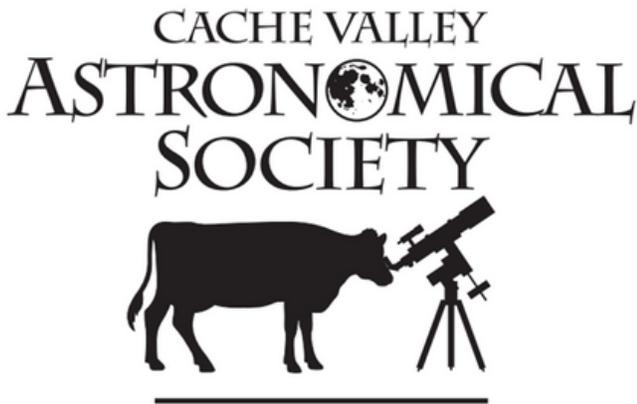
New CVAS Logo

Josh Kirk has taken over maintenance and upgrades of our club website (cvas-utahskies.org), which we greatly appreciate. He nearly has the new website ready to go live. As part of this effort, Josh suggested a new club logo. We brought the new logo up for a vote with the club members in attendance at the October meeting. The motion for the new logo passed so we will be using it as our club logo going forward. As we retire the old logo, I just wanted to pay a short tribute to club member Lyle Johnson for coming up with the original.

Some of you may not know, but the original logo began with a joke. After Dr. Shane Larson left for Northwestern University, we were faced with a lot of dilemmas. The club nearly disappeared. As we were trying to reorganize from Cache Valley Stargazers to the Cache Valley Astronomical Society, we were trying to do everything we could to get organized. As a part of that we thought it would be good for the club to have a logo. We had one suggestion that didn't really make it very far, but as we discussed it, we wanted something that represented Cache Valley. So jokingly I said, "Perhaps we should have a cow with a telescope." Even though it was a joke, Lyle thought about it for awhile and then he ran with it. The result was our beloved cow gazing through a small refractor. Even though we are retiring it, I am still very fond of the original.

Our new logo keeps a modern looking cow to help tie us to our roots but has a new look and feel to take us into the future. So, thank you Lyle and Josh, we really appreciate all the work!

Clear skies,
Dale.



Original CVAS Logo



New CVAS Logo

Journey to the Stars

By Dean Louviere

When I started astrophotography in 2022, I knew almost nothing about it, just that it took pretty photos of the stars. I got interested in photographing the stars when I took a long exposure photo of the stars with a fairly cheap point-and-shoot camera, the Lumix fz80. The image wasn't special. The main reason that interested me is that I could see more stars than I could see with my eyes. A couple of months later I invested in a much better Canon DSLR. This was a much bigger improvement to my last camera. I took some decent images with the camera and took some pretty nightscape images out in darker skies. The largest improvement was the star tracker. Star trackers allow you to take much longer exposures of the night sky and keep the stars still in your image due to the earth's rotation. With a star tracking system, you can use much longer focal lengths to image the stars. My imaging system comprised a Canon eos77d, 70-300mm f/4-5.6 usm ii, and a Skywatcher Star Adventurer Mini. The images produced by this simple rig are undeniably impressive, but it does come with some limitations, including a short battery life, restricted zoom capabilities, reduced sensitivity, and constraints on the range of targets it can effectively capture.



Eventually, I wanted more. I decided to sell my Star Tracker to save up for a proper rig setup. I spent many weeks saving up for a proper star tracker. I eventually purchased the Ioptron Gem28, a GO-TO star tracker with a payload of 28 lbs. For those who may not know what a Go-to Tracker is, it will automatically point the telescope to your desired target when you plug in the corresponding target/coordinates. This helped with getting accurate tracking and taking much less time to find the target I was interested in photographing. (images down below)



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The next piece of gear that I purchased was a proper telescope, the GSO 6" f/5 Newtonian. Using a telescope compared to a camera lens is a game changer. With longer focal lengths and larger aperture, you can image many things that were unreachable with a standard camera lens. With a focal length of 714 mm photographing the planets and the moon was now available. I later bought a guiding camera to help with tracking accuracy and to take longer and longer exposures. A guide camera and scope work to help increase the accuracy of your star tracker by taking many images and sending them to a computer to determine whether it should correct any errors in the tracking, like bad alignment and or light breezes. I soon grew out of using my Canon DSLR to take images and upgraded to a dedicated Astro camera. These cameras differ from normal DSLR and Mirrorless cameras by using a more sensitive camera sensor and eliminating the UV/IR cut filters to allow all visible wavelengths of light and a bit of ultraviolet and infrared on each end. By not having those filters obscure the sensor it can capture a more detailed and more realistic color of the galaxy. The camera that I upgraded to was the Player-One Saturn-M. The Saturn-M is a mono camera which means it images only in black and white capturing no color information which significantly enhances the camera's sensitivity, but it also means you need to use color filters in front of the camera and combine the final output to create a color image. These cameras require a computer to operate, making the entire setup dependent on being connected to one. (image below)



Several months later around January I soon evolved past the 6" Newtonian and wanted something with more focal length and light-gathering capabilities. I purchased an 8" f/5 Newtonian with a focal length of 1000mm at an f ratio of f/5. The much larger 8" telescope there came at a cost in regards to its weight. It was heavy. The larger footprint of the scope and the weight soon made the tracking of the mount wobble in the wind just enough that it wasn't able to be corrected from guiding. This made my images all have streaked stars and ruined my images. It lasted about six months until I snapped and put my mount up for sale. I searched for a star tracker large enough to carry my telescope and handle the wind and soon found one, the Celestron CGE, a Go-To star tracker with a large payload of 70 lbs. The CGE completed my setup and is the mount that I use today to take my images with the Saturn-M dedicated astro camera and guiding rig.



Last but not least is the observatory. An observatory is mainly a luxury item in astrophotography, you don't really need one. The primary advantage of having one is the convenience of avoiding nightly setup on clear evenings or the risk of leaving your telescope outside under a cover, where exposure to the elements could damage your equipment. Lucky for me, my parents also wanted a shed and I figured I could take advantage of the situation and ask them if half of it could be an observatory. When I told them I would even help with the building, they said yes. My dad and I started to build the observatory/shed together and finished it in mid-November of last year, right before all the snow. Over the past year, the observatory has been incredibly helpful, especially with my packed schedule of work and sports. One of its biggest advantages is how quickly I can get everything ready for imaging, saving me valuable sleep. This setup is what I've used to capture nearly all my astrophotos from the past year. (images below)

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Star Party Experiences

By Bruce Horrocks

One thing that I think sets the Cache Valley Astronomical Society apart from other clubs is our outstanding effort in community outreach. I have heard of other clubs that do them as well but for a club our size and with a few numbers of active participants that represent our club, we are way ahead of most other clubs. I think that this is commendable! It is awesome that our club feels a need to help support the schools and other community groups in the valley. So many of each of us can trace our own personal interest in astronomy back to the first time we looked at the moon or Saturn through a neighbor's telescope and that got us hooked. Mine started at age eight looking at Saturn through my neighbors' new Sears telescope in the summer of 1969. Yes, I am old. So, I thought I would share with you a brief account of some of my personal star party experiences and some of the typical questions and answers that come up during the night.

Alignment – Any of you that use GOTO telescope know the time that it takes to get the telescope properly align so that with a push of a button your telescope slews right to the next object and you look like a professional astronomer to your waiting guest. So, after 15 minutes of careful alignment, some young 8-year-old grabs the telescope and after a quick grab and pulling it down to his level says, “I don't see anything”. I look through the telescope, “No you don't” and it is back to realignment.

“Have you ever seen a black Hole?” – Answer for kids, “No they are black, and I just can't see them since they are so black.” Answer for adults, “Yes, every time I look at my checking account after buying a new camera or some other astronomy piece of equipment.”

“Have you ever seen an alien?” – Answer for kids, “Yes, they are all around us here on Earth, watching what we do and getting ready for the final invasion and assault on us earthlings.” Answer for adults, “Only when I watch some political add and wonder what planet did this idiot come from and how in the heck do we send him/her back?”

“Have you seen a UFO?” - Answer for kids, “Yes on Christmas Eve I often see little red lights in the air and wonder what they are.” Answer for adults, “Yes, all the time. There are lots of things that I see that are unidentified and I wonder what the heck was that?”

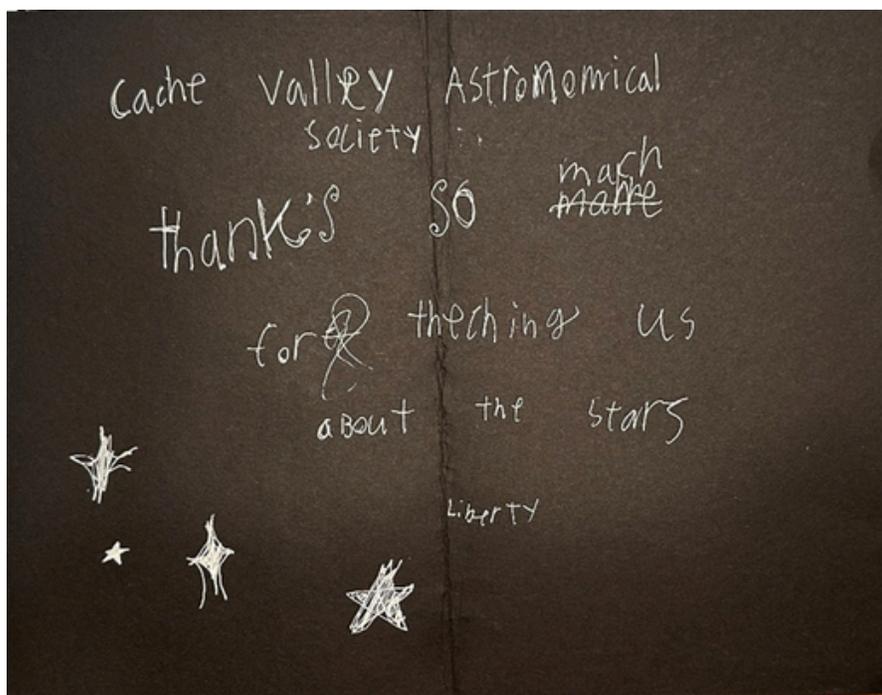
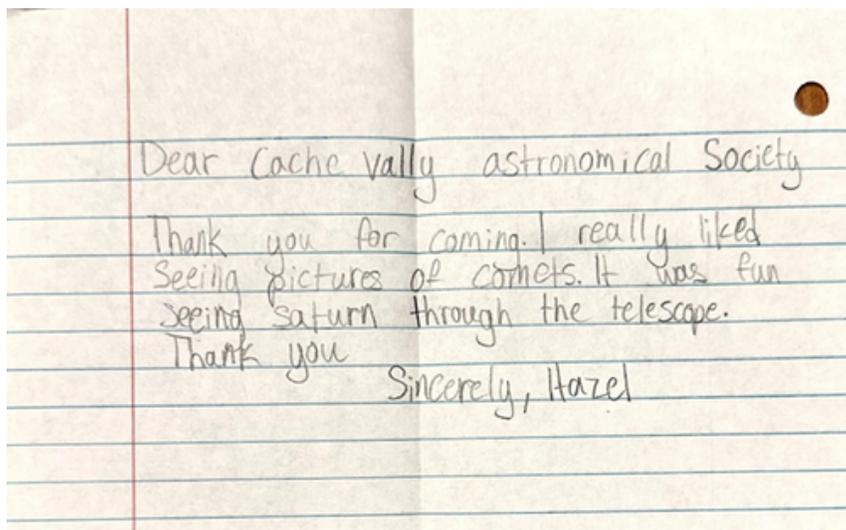
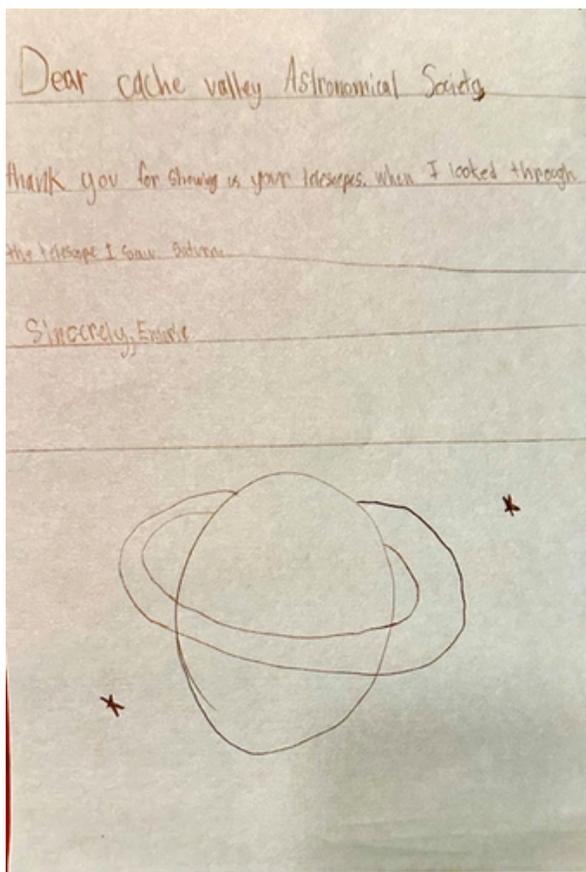
“How much did your telescope cost?”- Answer for kids, “A lot, please don't touch!” Answer for adults, “A lot, please don't touch or you will have to pay for it if you break it.”

“What power is your telescope?” - Answer for kids, “The most ultimate power, it lets me see to infinity and beyond.” Answer for parents, “It is whatever power I want to make it.” Then I launch into a brief explanation of what power means. Boring to kids.

“Can I use your laser?” – Answer for kids, “Sorry no, you have to be related to Darth Vader to use a laser with this much power. You might just cut your friend in half.” Answer to parents, “No, your kids will see you with it and then want to borrow it from you and I know your not related to either Darth Vader or Obiwan.”

“What is the farthest thing you have seen?” – Answer for kids, “The Dagobah System, farthest known object to be out of the reach of the Empire.” Answer for adults, “I don't know, they keep making the universe larger and larger, so it makes it harder to see that far.”

Paul and I recently had a star party for a school in Perry. Afterwards I was sent a stack of thank you letters from the kids that came that night to the star party. The letters all came in a manila envelope and there must have been around 80 or so. It is always nice to read them and see appreciation and I hope we leave some little buds of interest that will grow in these kids as they mature. Space and science have been a fun and exciting hobby of mine since I was a little boy. Having a telescope and a couple of Este's Model rockets around the house has just been part of my life. I hope that we plant that seed in a few of these young star party attendees. Here are just a few of the recent thank you notes.



Dear Cache Valley
Astronomical Society,

Thank you for coming
to our school. It was
really cool to learn more
about the stars and comets.
It was really cool to have
you come to our school.
Thank you so much!

Sincerely,

June

Thank You!

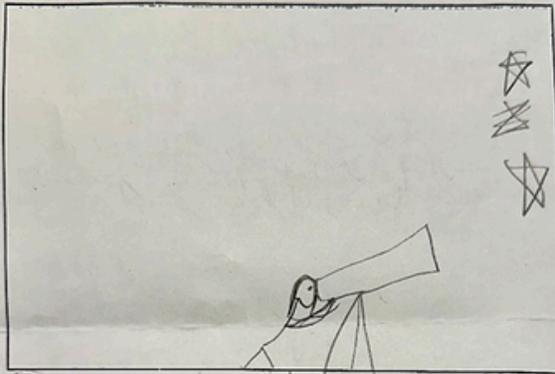


Thank you CACH VALLEY
ASTRONOMICAL SOCIETY
for letting 3/4 and 5/6 look
through the telescope!
I liked seeing Saturn's rings!

William Cummins



Thank You!



Dear Cache Valley
Astronomical Society
Thank you for bringing
your telescope and
teaching us about
comets and stars

from Bryn



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.