CACHE VALLEY
CLEAR SKIES

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PRESIDENT'S CORNER

Dale Hooper

Beginning in 2003 there was a hoax that began circulating that claimed that on Mars' close approach it would appear as large as the Moon! Someone had misconstrued that in a larger telescope that Mars could appear as big as the unmagnified Moon with – "Mars will appear as large as the Moon". This hoax has disappeared only to reappear several times. I wouldn't be surprised if the hoax isn't completely dead – just like the scary guys in Hollywood horror films.

In 1974 astrophysicist John Gribbin and Stephen Plagemann released a book called The Jupiter Effect where they claimed that in 1982 an alignment of all the planets within 95 degrees on the same side of the Sun was going to cause a great earthquake and other major catastrophes. Of course, these catastrophes never happened and in 1999 Gribbin regretted that he ever had anything to do with it.

This year we have a new hoax whose expiration date has just passed. As I mentioned in our January meeting, on Facebook and other social media there were lots of posts which said there would be a major planetary alignment on January 25, 2025! They misinterpreted the meaning of alignment – to think that all of the planets would be lined up on the same side of the Sun in a nice straight line. In the book Mathematical Astronomy Morsels by Jean Meeus, he states that it is possible for all eight of the major planets to be aligned within 3.6 degrees on the same side of the Sun. But it only happens once every 396 billion years. So as stated on earthsky.org, "The sun is currently about 4.6 billion years old and will bloat into a red giant some 5 to 6 billion years from now, swallowing the inner planets in the process. So, no we will never see the planets form a line on one side of the sun". As Albert Einstein once stated, "Don't believe everything you read on the Internet." Some people attribute this quote to Abraham Lincoln, but that claim has been debunked.

Dale Hooper in his bakyard Observatory

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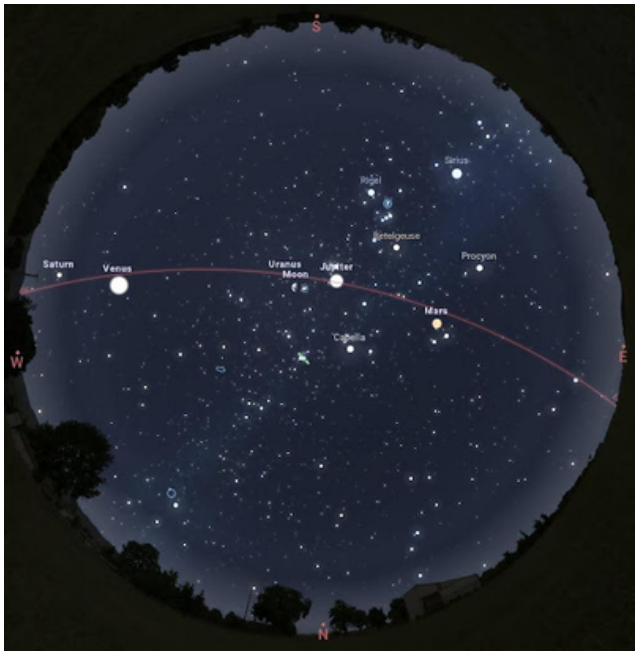
Even though we won't have a statistically improbable alignment of the planets in February, we still have a wonderful display of planets all across the evening sky. At the beginning of February all of the naked eye planets except Mercury will be visible in the early evening sky. This is shown in the sky dome view below from Stellarium Web for February 5th. Uranus (magnitude 5.7, near Jupiter) and Neptune (magnitude 7.8, near Saturn) are also visible. In fact, as the month progresses Mercury will set later and later so that on February 24th Saturn and Mercury will set at about the same time of 7:15pm. This is a very interesting time for observing Saturn.



As you are probably aware the separation of Saturn's rings is becoming very narrow. The rings will become edge-on in March at about the time Saturn is in conjunction with the Sun. This causes at least two different interesting things. First, we get a view of Saturn with hardly any rings. The second effect is that we get transits and eclipses of Saturn's moons like is typical for Jupiter! Below you can see a Saturn's Moon Tracks view for the first twenty days of February for Mimas, Enceladus, Tethys, Dione, Rhea, Titan, Hyperion and Iapetus. These correspond to the moon tracks views you usually see for Jupiter in Sky & Telescope magazine as well as other locations.

I've also included a table of the various moon events for just the first three days of February. There are so many moon events this month that it wasn't practical to include all of them. But if you would like to see a complete list you can go to astronomer Don Carona's website at the Physics Teaching Observatory for Texas A&M University where he has a number of tools for Saturn at: doncarona.tamu.edu/apps/Saturn/ Note that currently your browser will warn you against going there because his site security certificate has expired.

There are several other web pages used for launching interactive planetary information apps that are very helpful with planetary observations. These pages are all maintained by Sky & Telescope. I'll cover these in the order of planetary distance from the Sun. I've included thumbnails from each of the apps at the bottom of this article.

Club Meetings

- February 21
  Room 107 of the Engineering Lab Building on the USU Campus at 7 pm
  - 3rd Friday of the month

STEM Nights

- Canyon Elementary Feb. 6th
- Cedar Ridge Elementary March 13th
- Sunrise Elementary March 18th
- Greenville Elementary March 24th

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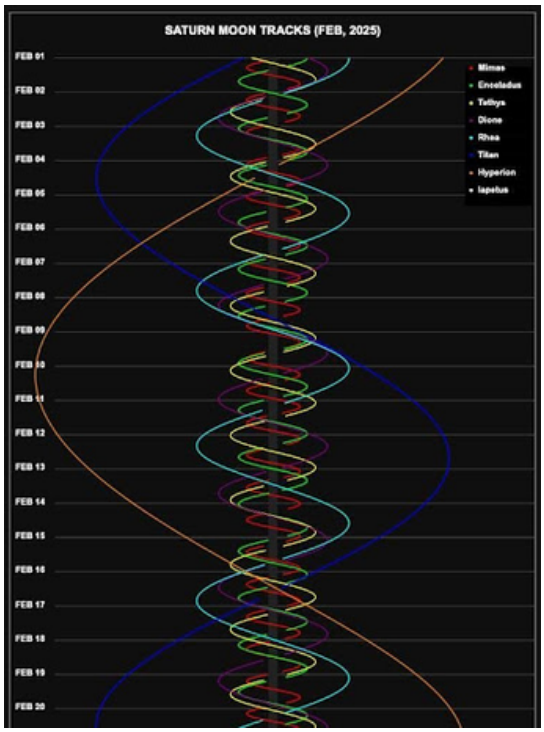
The first is: https://skyandtelescope.org/observing/interactive-sky-watching-tools/mars-which-side-is-visible/ here you can launch the Mars Profiler app which will show you the current Earth facing view from Mars, the angular diameter, visual magnitude and other very helpful information. Like all the other apps you can select a direct view (erect image system), inverted view (Newtonian/Dobsonian) or mirror reversed view (SCT/Mak/refractor+diagonal). Mars is just past opposition so this is a great time to observe it for the next couple of months.



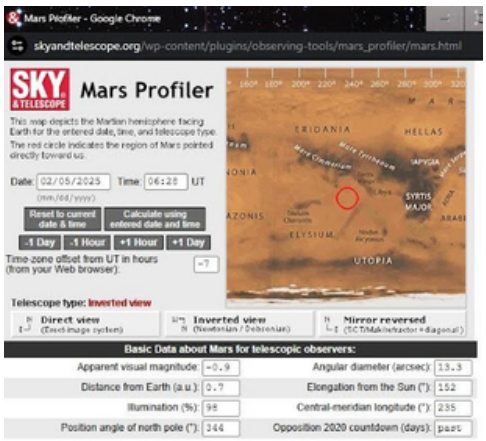
The second is: https://skyandtelescope.org/observing/jupiters-moons-javascript-utility/
which will allow you to launch an app that displays a view of positions of the Galilean moons with respect to Jupiter. It also lists Jupiter's angular size, satellite events for that day and other helpful information.

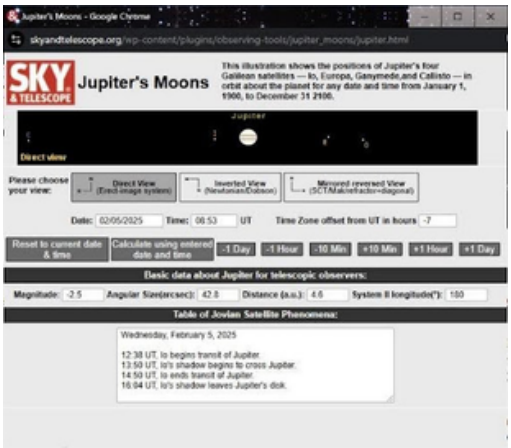
The next is: https://skyandtelescope.org/observing/interactive-sky-watching-tools/saturns-moons-javascript-utility/
this will let you launch an interactive app that shows the positions of Saturn's moons Enceladus, Dione, Titan, Tethys and Rhea. It will also show you just how edge on the rings of Saturn currently are.

The fourth page at: https://skyandtelescope.org/observing/interactive-sky-watching-tools/the-elusive-moons-ofuranus/# will allow you to determine the locations of Uranus' moons Miranda, Ariel, Umbriel, Titania and Oberon with respect to Uranus. Admittedly, you will need at least an eight-inch telescope to see any of these visually. However, more are accessible through astrophotography. The view of the moons in this app also helps to illustrate that Uranus is rolling around on its side as it orbits the Sun!

The final page is: https://skyandtelescope.org/observing/interactive-sky-watching-tools/sky-telescopes-triton-tracker/# which will allow you to locate Neptune's moon Triton. Triton is admittedly pretty dim. It is magnitude 13.5 which is just a bit brighter than Pluto. But you should be able to snag it using astrophotography.

Moons of Saturn Events February 1 – 3, 2025





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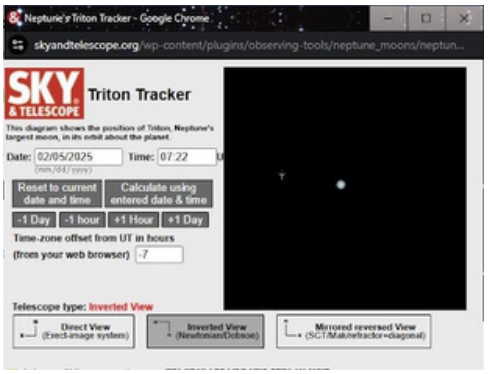
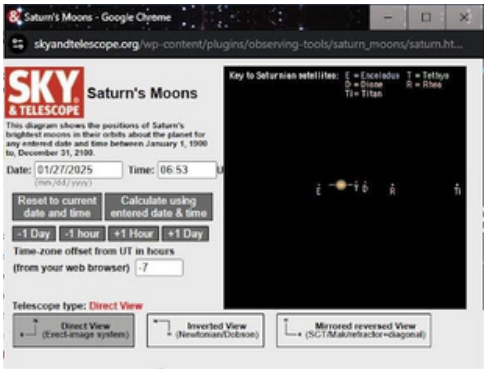
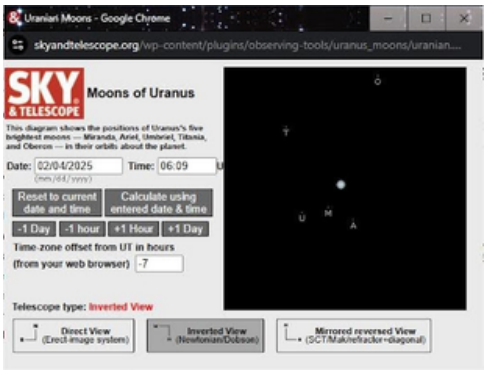
Moons of Saturn Events February 1 – 3, 2025

Moon	Date	Event Start Time (UTC)	Event Type
Tethys	2025-02-01	02:52	Shadow Transit
Enceladus	2025-02-01	07:02	Occultation
Enceladus	2025-02-01	07:17	Eclipse
Mimas	2025-02-01	11:17	Transit
Mimas	2025-02-01	11:27	Shadow Transit
Mimas	2025-02-01	22:52	Occultation
Mimas	2025-02-01	23:02	Eclipse
Enceladus	2025-02-01	23:27	Transit
Enceladus	2025-02-01	23:42	Shadow Transit
Dione	2025-02-02	00:12	Occultation
Dione	2025-02-02	00:42	Eclipse
Tethys	2025-02-02	01:02	Occultation
Tethys	2025-02-02	01:22	Eclipse
Rhea	2025-02-02	01:52	Occultation
Rhea	2025-02-02	02:32	Eclipse
Mimas	2025-02-02	09:52	Transit
Mimas	2025-02-02	10:02	Shadow Transit
Enceladus	2025-02-02	15:57	Occultation
Enceladus	2025-02-02	16:12	Eclipse
Mimas	2025-02-02	21:27	Occultation
Mimas	2025-02-02	21:37	Eclipse
Tethys	2025-02-02	23:42	Transit
Tethys	2025-02-03	00:02	Shadow Transit
Enceladus	2025-02-03	08:22	Transit
Mimas	2025-02-03	08:32	Transit
Enceladus	2025-02-03	08:37	Shadow Transit
Mimas	2025-02-03	08:42	Shadow Transit
Dione	2025-02-03	09:02	Transit
Dione	2025-02-03	09:27	Shadow Transit
Mimas	2025-02-03	20:07	Occultation
Mimas	2025-02-03	20:17	Eclipse
Tethys	2025-02-03	22:22	Occultation
Tethys	2025-02-03	22:42	Eclipse







So, you can see that you don't need to wait around another 390 billion years for a great time to observe the planets. Now we just have to hope that we have more than our typical three nights of clear skies in the month of February – which usually seem to occur around the full moon.

Clear skies,

Dale.

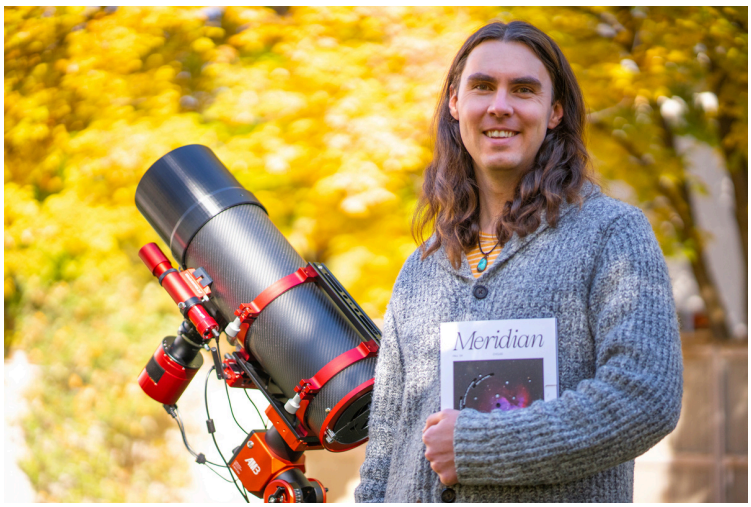
CVAS Website

Journey to the Stars

LEARN A LITTLE ABOUT OUR MEMBER KYLE HOVEY

I was fortunate enough to be raised under dark skies surrounded by open space in the foothills of the Sierras. Enchanted by nature from a young age, I always yearned to get to wild places. My favorite time for exploration has always been the night, and I have fond memories of looking at the Milky Way surrounded by oak trees and good friends. Many nights were spent laying in the hammock looking up at the stars, including one night my long term partner Hannah and I decided to pick a constellation to be "ours".

When the time came to ship off to College, my partner Hannah and I moved to San Luis Obispo. I was fortunate enough to be supported and have enough free time for both classes and lots of backpacking. The Ventana Wilderness was full of adventure and fun places to get lost in. At Cuesta College, I found so many inspiring professors who helped me in my journey learning Math, Physics, and Astronomy. I teamed up with some classmates and my professor Dr. Russell Genet to help with mechatronics on a small 10" automated telescope searching for binary stars using Speckle Interferometry.



Eventually, I chose Utah State University to complete my BS in Mathematics. My time at USU was full of wonderful professors/mentors, gorgeous road trips, skiing, climbing, friends, hackathons, and lots of Major changes. I never chose a major for a career, but instead have always been driven by the joy of learning and teaching others. I ended up going from EE, to Math, to CE, to CS, and then back to Mathematics with a computational emphasis. Mathematics has always been my favorite field. It's an abstract telescope into an invisible world that has gorgeous structure and exists all around us.

Shortly after graduation, the pandemic hit and we moved back to California to be closer to family. Hannah's stepfather Michael happened to be getting back into Astronomy around the same time. He invited us over for an astronomy night, and I was eager to attach my camera to his Takahashi Newtonian telescope. To that point, I had never had the opportunity to do astrophotography through a telescope or on a tracked mount. Out of curiosity, I decided to try stacking some exposures (expecting it to be marginally better than a long exposure). That night after taking exposures, I tried it, and the moment I saw the stack I was convinced I needed to get a telescope and begin my journey in astrophotography. I never expected the stack to look so detailed and the noise so much lower than a single exposure. It was magic.

I researched and hesitantly pulled the trigger on a harmonic mount, 73mm doublet, and all the accessories to build a complete kit. That summer I spent almost every free night imaging and trying new things. I think I must have spent 90% of the nights out of four months doing astrophotography. My partner and I both work remote,

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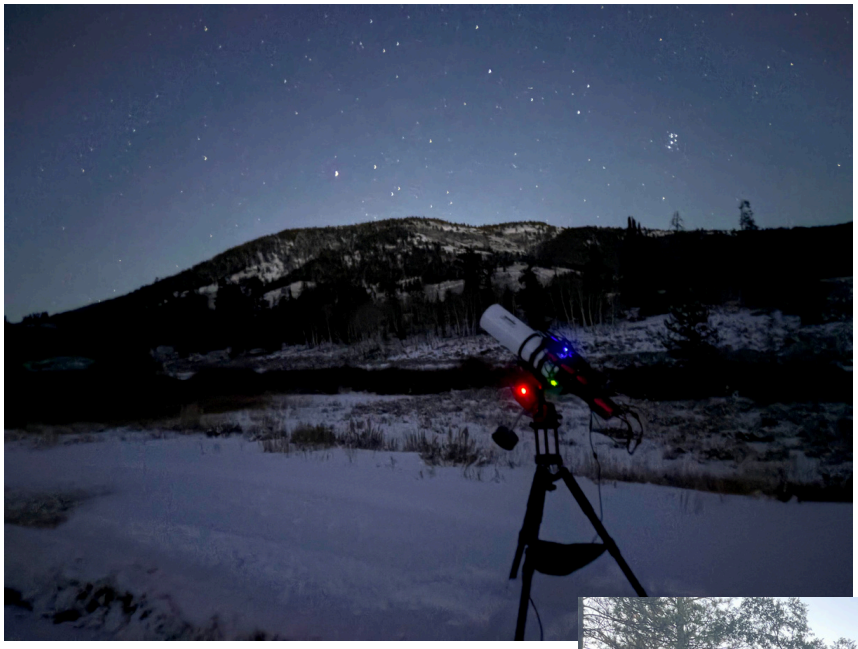
and our deck had a clear view of Bortle 4 skies and the Cygnus region. I'm thankful for that, because I was able to fail frequently and in a variety of ways (the best way to learn, I think).

Eventually, the harsh weather/fires brought on by climate change made life in California too much for us to manage. We lived in a rural location far away from most things, and we missed having friends nearby. Maintaining basic safety was a part time job, and natural disasters would regularly impact our ability to work. We decided to move back to Logan and the wonderful community here. We've been back for a few months now and life is already much brighter.

Since my original setup, I've upgraded to an Esprit 100ED and cooled monochrome camera. I had the joy of producing some astrophotography for our company's yearly publication, and have finally started printing my photography so that we can have it up on our walls. I still have so much to learn, and I am looking forward to warm summer nights and road trips into the desert for landscape astrophotography. Most of all, I am grateful to be in an area surrounded by so many passionate people.



Check out Kyle's photos

https://www.astrobin.com/users/valence/

Winter Deep Sky Objects Blaine Dickey

The Winter months are filled with celestial objects that captivate our imagination. Among these are the NGC 457 (Owl Cluster), Messier 1 (the Crab Nebula), Messier 74, Messier 42 The Great Orion Nebula, Messier 77, NGC 1055, NGC 884 and NGC 869. Each of these objects has its own unique characteristics and story to tell.

The Owl Cluster, also known as NGC 457, is an open star cluster located in the constellation Cassiopeia. It was discovered by William Herschel in 1780 and is approximately 7,922 light-years away from Earth. The cluster is named for its resemblance to an owl with outstretched wings. This resemblance is due to the two bright stars, Phi Cassiopeiae and HD 7902, which appear as the "eyes" of the owl. The cluster contains about 150 stars.

Share your photos and stories with us —we'd love to feature them!

Send them to:
deanlouviere@gmail.com

Messier 1, commonly known as the Crab Nebula, is a supernova remnant located in the constellation Taurus. It was first observed by Chinese astronomers in 1054 AD and later cataloged by Charles Messier in 1758. The Crab Nebula is the result of a massive star's explosion, which left behind a rapidly spinning neutron star, or pulsar, at its center. The nebula is approximately 6,500 light-years away from Earth and has a diameter of about 11 light-years. In the eyepiece of a telescope it appears as a dim whitish fuzzy object.

Messier 74, also known as the Phantom Galaxy, is a grand design spiral galaxy located in the constellation Pisces. It was discovered by Pierre Méchain in 1780 and later included in Messier's catalog. The galaxy is approximately 32 million light-years away from Earth and has a diameter of about 95,000 light-years. Messier 74 is known for its well-defined spiral arms.

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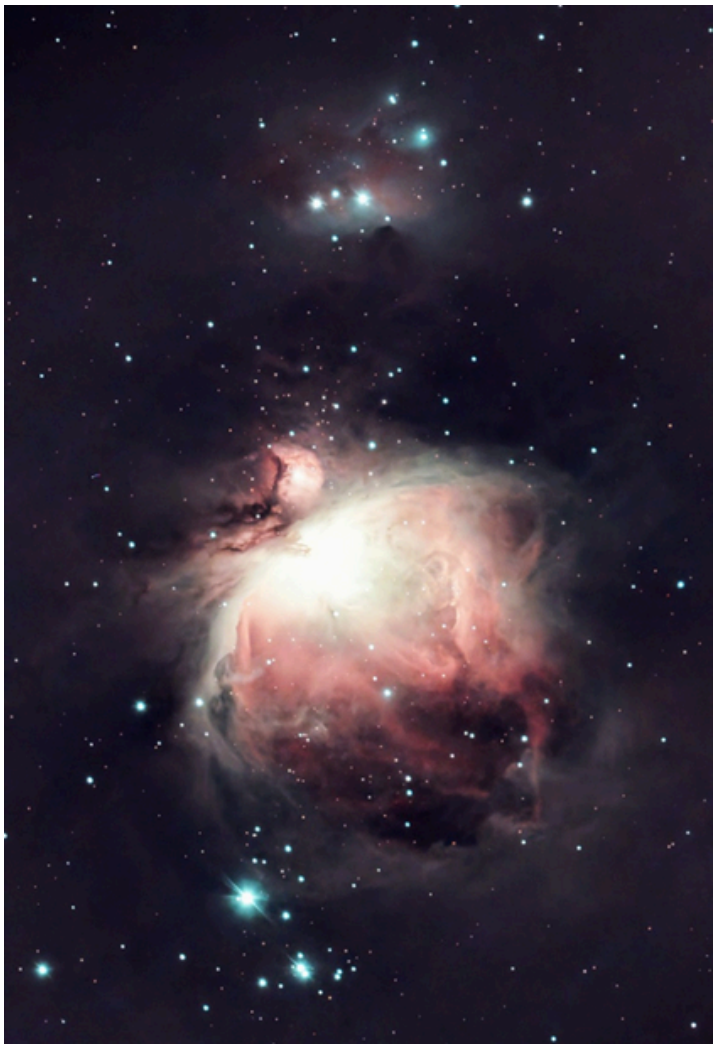

Messier 42, commonly known as the Orion Nebula, is a diffuse nebula located in the constellation Orion. It is a favorite object at star parties. It was discovered by Nicolas-Claude Fabri de Peiresc in 1610 and later included in Messier's catalog. The Orion Nebula is approximately 1,344 light-years away from Earth and has a diameter of about 24 light-years. It is one of the brightest nebulae in the sky and is visible to the naked eye. The Orion Nebula is a stellar nursery, where new stars are being born from the surrounding gas and dust. Reflection Nebula NGC 1975 also appears above Messier 42, in the wide field view.

NGC 1055 (upper center) is a spiral galaxy located in the constellation Cetus. It was discovered by William Herschel in 1783. The galaxy is approximately 52 million light-years away from Earth and has a diameter of about 115,000 light-years. NGC 1055 is notable for its edge-on orientation.

Messier 77 (lower center), also known as Cetus A, is a barred spiral galaxy located in the constellation Cetus. It was discovered by Pierre Méchain in 1780 and later included in Messier's catalog. The galaxy is approximately 47 million light-years away from Earth and has a diameter of about 170,000 light-years. Messier 77 is known for its active galactic nucleus, which is powered by a supermassive black hole at its center. As often happens when you image one galaxy another one often appears in the same field of view as it did in this case.

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.