CACHE VALLEY ASTRONOMICAL SOCIETY
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CACHE VALLEY CLEAR SKIES

Journal of the Cache Valley Astronomical Society

Volume 11 No. 7 | April 2, 2024 | https://cvas-utahskies.org

PRESIDENT'S CORNER

By Dell Vance

Ann-Maree Vance

March came in like a lion. If I remember the saying correctly, that means it should go out like a lamb. That is great! Hopefully, we will be getting some good astronomy weather soon!

Since the New Year, we have participated in eight STEM fairs.

- North Park Elementary School (Logan)
- Wellsville Elementary School
- White Pine Elementary School (Richmond)
- Cedar Ridge Elementary School (Hyde Park)
- Millville Elementary School
- Sunrise Elementary School (Smithfield)
- Providence Elementary School
- Greenville Elementary School (North Logan)

All were well attended. We have some very talented people in our club. It is great to see what they do for these events. We have learned that getting the students involved in an activity works best. Some of us have

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Vecteezy

UPCOMING EVENTS

Solar Eclipse!

- Monday, April 8. Have your eclipse glasses and solar filters ready!

STEM Fair

- April 11: Center for Creativity, Innovation, and Discovery (Providence). Please be there to set up at 5:30. Event lasts from 6:00 to 8:00 p.m.

Club Meeting

- Friday, April 19, at the new and improved Logan Library! We will be in Community Room 1. We will be sharing our eclipse stories and pictures. Please let an Exec Comm member know if you'd like to share.

Star Parties

- April 26: North Logan Library
- April 26: Smithfield Library

Yes! We will have two public star parties on the same night! Please let an Exec Comm member know which one you can help with.

Keep up to date by visiting our website:

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

coupled learning with art activities, such as chalk drawings of planets and deep sky objects. Some are making their own planisphere or moon rubbings. We have given away almost a thousand NASA pictures to the students.

I personally enjoy finding those budding young astronomers among these students. It seems there are a few at every event. It is also interesting to find parents that have an interest in astronomy but haven't done anything with it for some time. Many have some kind of telescope and they have used it to see the moon and sometimes a planet. Most don't use their telescope as much as they would like to. The STEM fairs seem to get their children excited to go home and pull it out.

In February we had a great club meeting. Robert Cook gave a presentation on Charles Messier and his catalogue. Randy Jost presented an update on the James Webb Space Telescope (JWST). Randy included a discussion of the challenges of completing a complex project like the JWST. It was interesting to see how things progress on government projects. They involve so many people and so many decisions. It can be a challenge just to get agreement on what the project is supposed to do. I want to thank Robert and Randy for their great work on these presentations.

Also, thanks to Robert, we had some interest in a Messier Marathon. Dale Hooper set up a Messier Marathon and a few of us had a great time at Newton Reservoir on March 15. We did a half marathon due to prediction of high winds after midnight.

Also in March, we had another great meeting. James Sommers presented information about eclipses. He talked about the upcoming total solar eclipse, how eclipses happen, and how to best observe them. We also learned a great word for eclipses: *syzygy*. It may come in handy for those who play Scrabble. We also gave out eclipse glasses and viewers to those who were there. Blaine Dickey gave us a presentation about the New General Catalogue (NGC) and the objects that are contained in it. I learned that it is called the "new" catalogue even though it has been around for over 200 years.

We have upcoming star parties at the Smithfield and North Logan Libraries on April 26. It should be a good opportunity. Both libraries usually have a good turnout, so we would like to have several telescopes there at each event.

The big event for April, of course, is the total solar eclipse on April 8. Several members are travelling to various location to view the eclipse. Our meeting for April is a recap of what we saw and our experiences in the locations that we were at. Our meeting will be on April 19 at 7:00 p.m. in the Logan Library, Community Room 1. ***That's right we are holding our meeting in the brand-new Logan Library!*** They are working with us again to provide us a meeting location for future meetings. I want to thank Randy Jost for hosting us at USU and Tom Westre for hosting us at the Nibley City Offices during the time the Logan Library was being built. They have been very supportive of the club.

There are lots of exciting things happening this month! Thanks again for all your support.

Clear skies!

CACHE VALLEY ASTRONOMICAL SOCIETY

Our Website: CVAS-UTAHSKIES.ORG

EXECUTIVE COMMITTEE

- President: Dell Vance; avteam.dell@gmail.com
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- Night Sky Network Coordinator: Dell Vance; avteam.dell@gmail.com
- Public Relations: Bruce Horrocks; bruceh@gem-buildings.com
- Webmaster-Librarian: Tom Westre; twestre45@aol.com

DARKSKY UTAH SEEKING BOARD AND COMMITEE MEMBERS

A Letter from Mr. Alan Eastman, Chair of DarkSky Utah

Dear CVAS Friends and Colleagues,

We are recruiting volunteers to serve on the **board** or **operating committees** of DarkSky Utah, the state chapter of DarkSky International, and are hoping you might be interested in getting involved. In addition to helping suitable places achieve DarkSky Place certification, our group has been instrumental in helping cities formulate dark-sky compatible lighting ordinances, reaching out at community events, and lobbying legislators to pass bills to minimize light pollution in our beautiful state. We hope to increase the diversity of our volunteers, in terms of both geography and demographics.

As a **board member**, you would be involved in coordinating and moving forward our efforts to increase awareness of the problems of light pollution, and to decrease light pollution in communities and scenic places around the state. Board member duties would be, for example:

- Help plan and staff 2–4 events per year;
- Help develop tabling materials for those events;
- Attend, in person or remotely, quarterly board meetings;
- Actively recruit members for DarkSky International, who automatically become members of DarkSky Utah.

As a **committee member**, with opportunities more closely focused than a board member, you would be an important part of one of the four committees in the chapter: *Designation* (helps locations and communities achieve DarkSky Place certification), *Development* (recruitment and encouragement of public involvement, including funding), *Ordinance* (assists cities and towns with local ordinances that promote good DarkSky lighting), and *Outreach* (plans and participates in activities that promote dark-sky awareness).

We would be delighted to have you working with us; together, we can maintain and enhance Utah's

reputation for the best skies in the nation. Please call or email me, and let's talk!

Sincerely Yours,
Alan D. Eastman
Chair, DarkSky Utah

5698 Park Place East
Holladay, UT 84121
cell 801-440-3875

NASA MOON AND ECLIPSE NEWS

By NASA

Mark your calendars for Saturday, September 14, 2024, the next International Observe the Moon Night. Join hundreds of thousands of people from all over the world in learning about lunar science and exploration, taking part in celestial observations, and honoring cultural and personal connections to the moon.

Explore our website to learn more about the program and find helpful event hosting tips and resources.

If you can't wait to celebrate the moon, the upcoming April 8 eclipse provides an early opportunity to do so. On April 8, 2024, a total solar eclipse will cross North America, passing over parts of Mexico, the United States, and Canada. Here's how you can safely view the eclipse.

No matter where you are, you can tune in to NASA's official broadcast from 11:00 a.m. to 2:00 p.m. MDT (17:00 to 20:00 UTC) on April 8.

Cache Valley Eclipse Schedule

Eclipse begins: 11:27:55

Eclipse maximum: 12:33:45

Eclipse ends: 13:41:35

You can read more about it and see a simulation here.

CVAS 2024 MESSIER HALF MARATHON

(Where 13.1 = 55)

Story by Dale Hooper
Images by Blaine Dickey

After Robert Cook's great presentation about the Messier objects at our February club meeting, there were several of us that talked about holding a Messier Marathon in March. Unfortunately, we soon realized that the ideal date for a marathon was the same night as our March club meeting, so we opted to change the night of the marathon to March 15. This meant that we would need to contend with a moon that was two days short of first quarter. We decided that it was still worth a try if the weather cooperated.

Our first choice of location was the Bridgerland RC Club airport, but we weren't able to contact anyone who could give us permission to use the site. So we opted for our second choice, which was the parking lot on the east side of Newton Dam. This does seem to be the hot spot for the local teens on a Friday night, so we did have to deal with some squealing of tires and a bonfire. But overall, they really weren't much of a bother. This is a nice, dark site with only Little Mountain as a slight detriment.

There were four of us who decided to show up for the marathon: Blaine Dickey, Dell Vance, Tom Kerby, and myself. We were treated to very clear and crisp skies. The temperature was in the forties, trending toward the thirties as the night progressed. I had on my "snowmobile outfit," so I stayed toasty warm, but we had hot chocolate available in case we started getting cold.

Early on, Dell and I decided we would only try for a half marathon because of a wind warning for after midnight. Blaine brought his new Seestar S50 Smart Telescope, and he was having a blast imaging Comet 12P/Pons-Brooks and the moon (which, as Blaine said, "affected how many objects we could see well"), as well as the Messier objects. We've included a few of Blaine's images. Unfortunately for Tom, he had forgotten his telescope power cord but he still had a great time taking starscapes with his DSLR.

For runners, a half marathon is 13.1 miles but for us, it is 55 Messier objects.

By around 11:40 p.m., Dell and I had observed the objects up to Hydra (M68 and M83), which meant that we would need to wait awhile for these objects to rise above Little Mountain. I had 64 objects (everything except M74 up to that point) and Dell also had over 55 objects, so we had accomplished our goal of a half marathon. For runners, a half marathon is 13.1 miles but for us it is 55 Messier objects, so perhaps we should create some stickers with 55 in an oval for our cars! Having met our goals, all four of us decided to pack up, and we were ready to head for home by about 12:30 a.m. When we left, it still wasn't windy, so the sky didn't stop us.

Figure 1: The moon. *Figure 2: Messier 41.*

I think all of us had a LOT of fun, and it was great to get together and observe after the long winter cloud doldrums. I, for one, hope we can do another one soon with even more club members!

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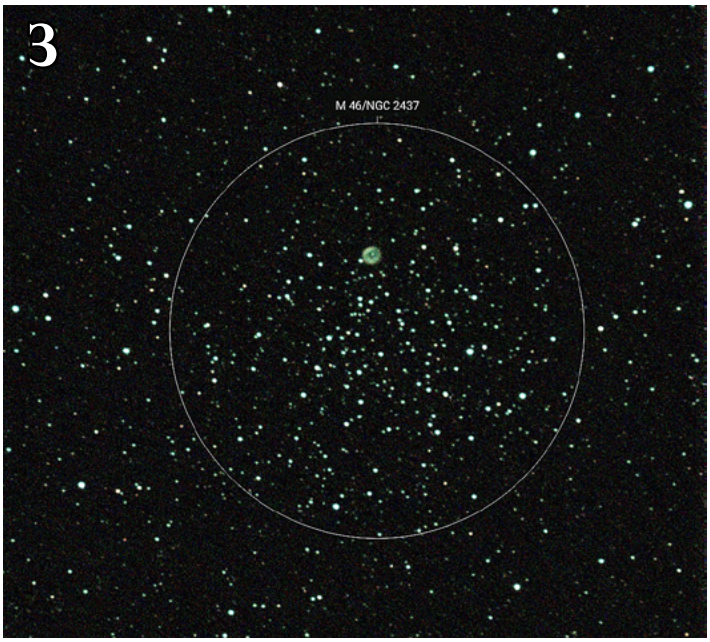
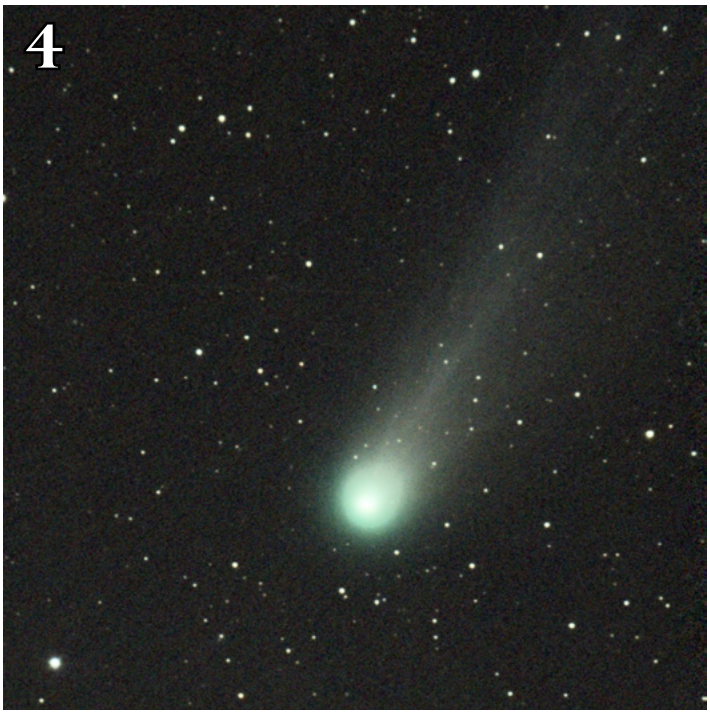
Messier, cont'd from p. 5





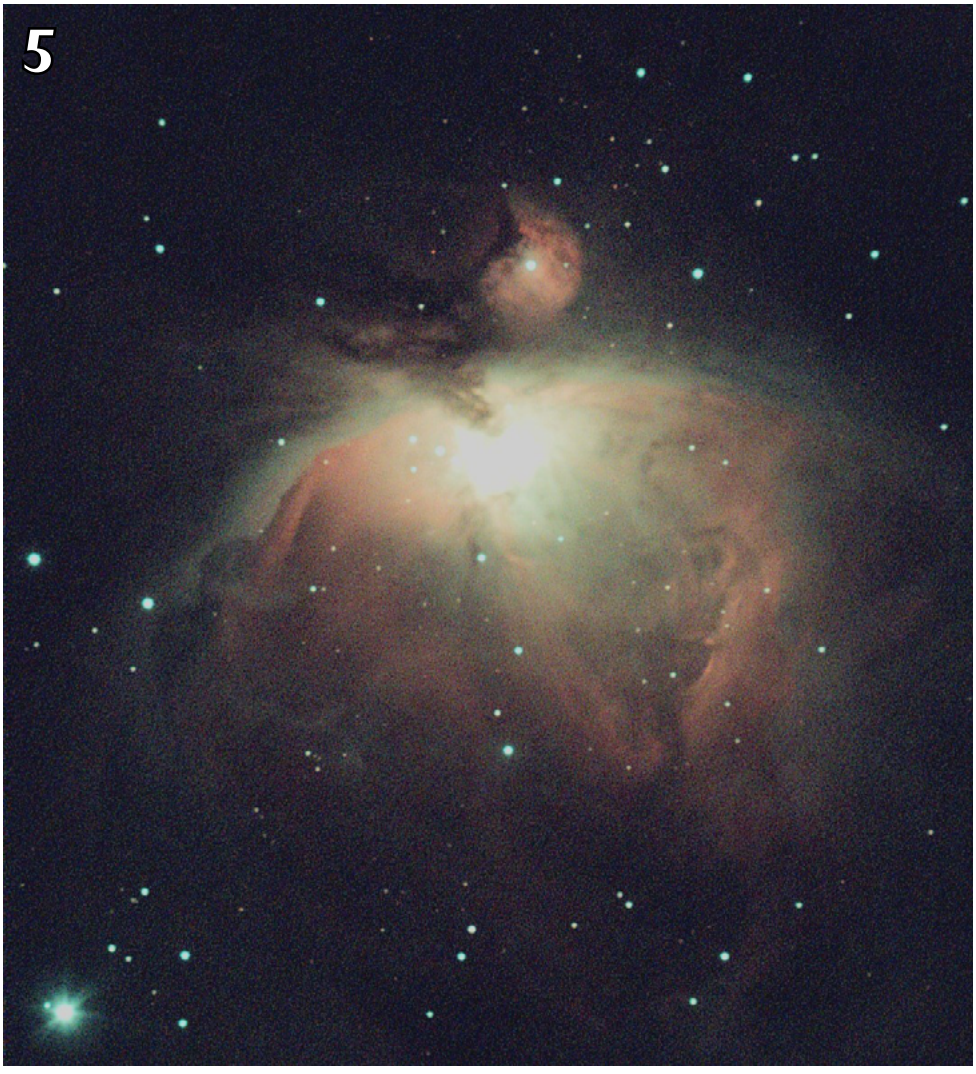


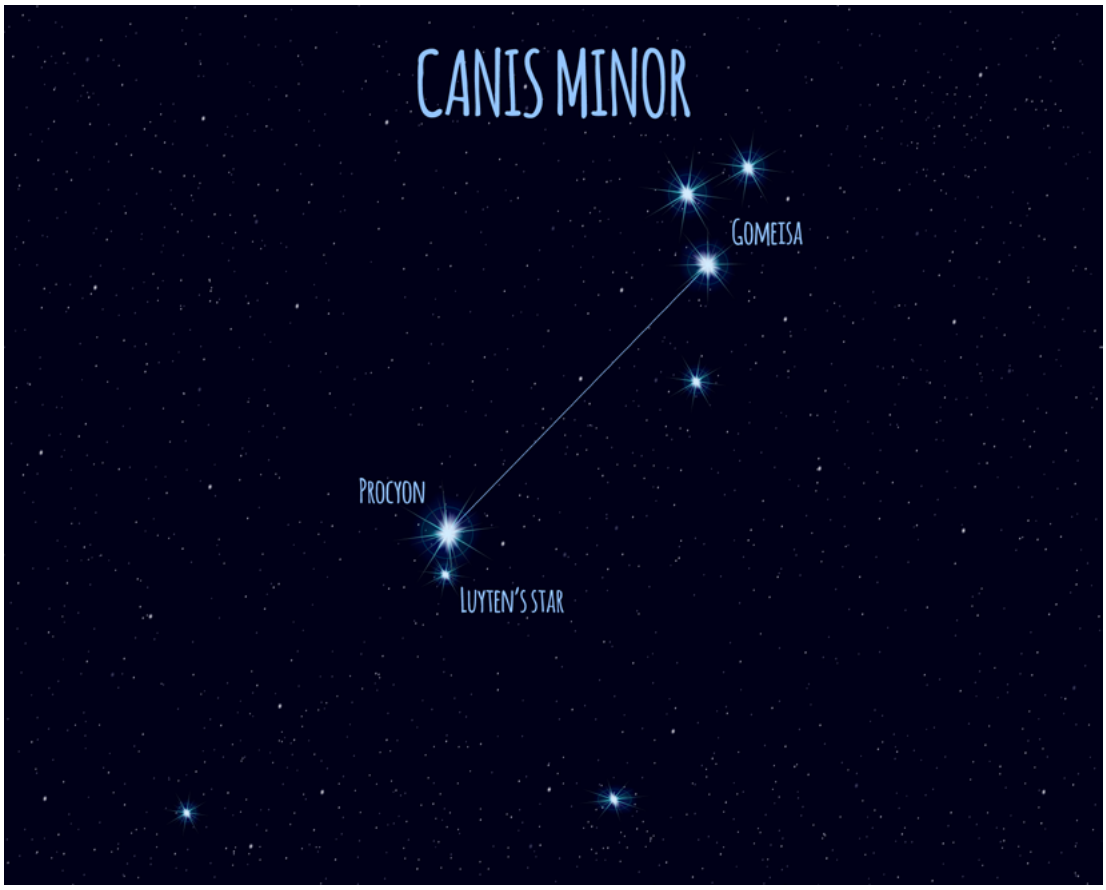
Figure 3: Messier 41. *Figure 4: Comet 12P/Pons-Brooks.* *Figure 5 (left): Messier 42.*

If you'd like to plan your own Messier Marathon or Messier Half Marathon, check out this great guide from Celestron.

Dreamstime

PROCYON: ORION'S LITTLE DOG STAR

By Tom Westre



Shutterstock

The winter evening sky has a large number of bright stars all centered in or near the constellation of Orion the Hunter. Orion has two dogs, Canis Major (the big dog), and Canis Minor (the little dog).

Canis Major has the famous bright star, Sirius, also known as the Dog Star. Canis Minor has only a few stars, but it contains the impressive star Procyon and the nearby star Gomeisa

Procyon is worth the time to take a look. Procyon is about twice the sun's radius but emits seven times more light than the sun. Scientists think it is moving into a subgiant phase.

Procyon is only 11 light-years away. Because it is close and very bright it ranks as the 8th brightest star as seen from earth. It is also the 14th nearest star to our sun.

Procyon has a small companion star called Procyon B. This is a white dwarf star. While Procyon is a bright magnitude of 0.34 Procyon B is a dim magnitude of 10.7 and is about half the mass of our sun. These two stars are separated by about the same distance as the sun is from Uranus. They orbit each other in about 41 years. They were both formed about 2 billion years ago, so they are much younger than our sun.

This time of year Procyon is easy to spot as it is well above the southern horizon. Procyon is part of the Winter Triangle, which consists of Procyon, Sirius, and Betelgeuse.

An easy way to locate Procyon is to first find the brightest star, Sirius. Procyon is just to the upper left.

Clipart World

This article was originally a script for CVAS's UPR radio show, broadcast on Feb.27, 2024.

ClipartMax

USU Observatory Public Night

The USU Observatory is closed for the winter. The next public night will be in early April but no firm date has been announced yet. More info available here.

A NIGHT UNDER THE STARS IN JANUARY 2024

By Blaine Dickey

Recently, I added a new telecompressor to my Meade LX200R 12 inch f/10 telescope, effectively making it an f/6.2 telescope. Being anxious to try it out, I took advantage of a clear, cold night near the end of January before the moon arose.

My first object was Comet 12/P Pons-Brooks (figure 1). At the time, it was a dim +9.6 magnitude but it is predicted to reach a bright +4.9 magnitude by early April in the western sky at an altitude of +27 degrees on April 4, 2024.

Jupiter was riding high in the sky, so I took quick image of it (figure 2).

Next, I imaged Messier 1, the Crab Nebula, in Taurus the Bull (figure 3). This is the remnant of a super-

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Night under the Stars, cont'd from p. 8

nova explosion that occurred in the year 1054.

Two open clusters, Messier 35 and 37 (figures 4 and 5, respectively, on p. 6), each fit nicely into my wider field of view.

Messier 42 is probably one of the most imaged objects in the sky (figure 6). It is bright through an eyepiece and colorful through and imaging camera. It is easy to find in the sword of Orion. A binocular is sufficient to see it and the Trapezium is a favorite star cluster embedded within the nebulosity.

Messier 81 is one of the most beautiful spiral galaxies in the sky (figure 7). Its perfectly formed spiral makes it a favorite galaxy to image.

Not far away from Messier 81 is the galaxy Messier 82 (figure 8). Both galaxies can be seen in the same field of view of a low power eyepiece on a wide-field telescope.

Finally, close by Messier 35 is a small, condensed open cluster: NGC 2158 (figure 9). It can be seen well as a faint, condensed group of stars in the eyepiece of a telescope.

I am pretty happy with my larger and flatter fields of view. Some clear skies would be nice soon to see what else I can image.

Of course there are many more gems to see during the winter months. As winter turns to spring, many of these objects are still viewable but under much warmer conditions.

Images courtesy of the author.

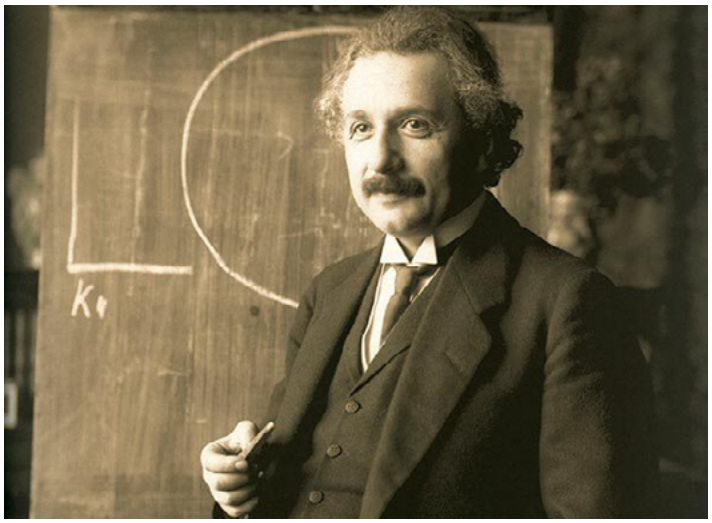
Creazilla

E = MC, OR IS IT E=MC^2, OR IS IT E=MC^3?

By Bruce Horrocks

Not long ago, Tom, Dell, and I were sitting around a table at Article Circle, planning a future CVAS event, and the topic of Einstein's famous equation came up.

I must admit that I have always found this equation a little bit confusing, myself. Having survived numerous physics classes in college, I was very much aware of many of standard equations used for kinetic energy of objects or fluids. Perhaps you also are familiar with the equation, $E_k = ½ mv^2$, where E_k is the kinetic energy created by an object of mass = m, at a speed = v, which is squared or multiplied by itself. I will not try to explain where the ½ term comes from, but just trust me that it is needed, and is just part of the equation. If you remember laws of motion, with acceleration, velocity, and distance, you can substitute some of these equations and come up with the ½ term if you really want to.



Wikimedia Commons

But why is the velocity squared? To try and explain this, let me go back to the 18th century. There were several scientists at that time who were still trying to explain many of Newton's laws and define what exactly "energy" is. Along came a young lady from a prestigious French family named Emilie de Breteuil. She was a bit of a tomboy and her father wrote of her, "She flaunts her mind, and frightens away the suitors." She was just not your typical French young lady, going to balls and formal social gatherings.

She finally decided to marry a wealthy young French soldier named du Chatelet who, like most soldiers, spent very little time at home. In that place and era, it was considered an acceptable situation to have an affair with someone else, considering the long periods of absence from each other. Emilie was a very smart young lady and would spend much of her time performing scientific research. She had an affair with a well-known writer of that time named Voltaire. She and her new lover converted an old chateau into a library of science with books, laboratories, and seminar areas.

At this time, the accepted Newtonian truth was that energy was simply e = mv, or mass times velocity. Emilie was one of the first to propose that the correct formula was e = mv^2. Willem Gravesande was a Dutch researcher who had been experimenting with weights dropped into clay at different speeds. He noticed that when a ball dropped into the clay was going twice the speed of the previous ball, that the depth of the ball would be four times deeper, and that a ball dropped at three times the speed sank nine times deeper. Willem was not much of a theoretician, but Emilie was, and she also had a famous lover who knew how to write. She was able to submit some of the first research papers that asserted that energy is equal to mass times the velocity squared.

Unfortunately, her affair with Voltaire resulted in a pregnancy, and she was 40 years old when she died of infection a few days after giving birth.

I'd just like to briefly note here that mass times velocity does equal momentum (but momentum does not equal energy).

Over time, researchers and scientists accepted the new formula for energy with the velocity squared. Now we move forward, to around 1890. Several mines in Africa and Czechoslovakia were bringing up a unique type of iron ore that, when observed in a laboratory, gave off large amounts of energy without any change in size or mass. Another bright young woman by the name of Marie Curie made some of the first investigations as to what was happening with this iron ore. She later coined the term *radioactivity* for this strange new phenomenon. For the first time, scientists

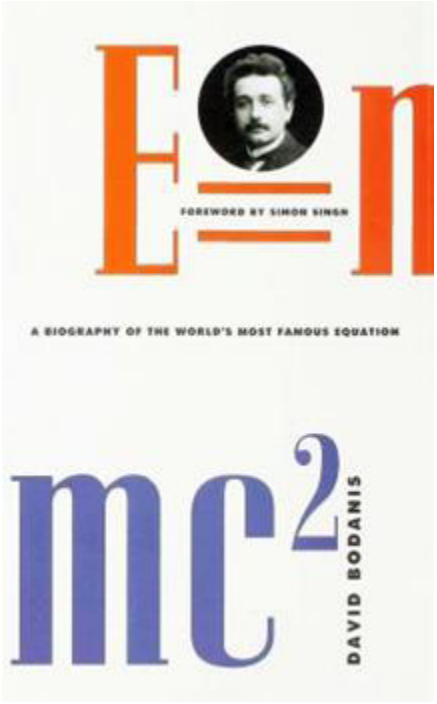
cont'd on p. 11

E = mc, cont'd from p. 10

were seeing mass provide enormous amounts of energy without any measurable change. Many believe that Einstein's observations of Marie Curie's research influenced him to make the connection between energy and matter. Unfortunately for Marie, the side effects of long-term exposure to radiation were unknown at this time; after many years of exposure she developed a cancer, which led to her death at the age of 66.

At the young age of 26, Albert Einstein finally published his four *annus mirabilis* ("miracle year") papers in 1905. His fourth paper was on the topic of special relativity; in it, he mathematically describes the relationship between energy and matter. Ironically, the paper does not formally state "$E=mc^2$," but a little mathematical manipulation brings it into that form.

The term c^2 does not mean that matter will go faster than the speed of light, but that it should be looked at as a constant. However, this must be the mother of all constants. If we use the speed of light in miles per hour, that constant is 448,900,000,000,000,000. If you used just one kilogram (2.2 pounds) of mass, that energy would be equal to 21,500 kilotons of TNT, or the equivalent of 695 million gallons of gasoline. When the first atomic bombs were detonated, it was estimated that less than 2 percent of the uranium core was actually converted into energy.



Thriftbooks

After Einstein came to the United States, he was aware that there were many of his associates, some of whom were in Germany, who were aware of the incredible power that could be developed using this knowledge. He sent a letter to President Roosevelt—who may have not even read the letter, but who politely responded, "Thanks, but no thanks," to his concern.

Only at a later date, when British intelligence reported this to the Allied leaders, did operations begin to develop the nuclear bomb and prevent Germany from doing so.

The implications from this one little equation have probably done more to change the course of human history than any other. While there are many negative factors associated with it, there are countless positive ways this knowledge has increased our standard of living and knowledge of the universe.

For a more complete history and some very interesting information on this, may I recommend the book, *E= mc²* by David Bodanis. I just completed reading this book and it was the source of most of the information used in this article. I can highly recommend it, and the notes and biographies in the back are also worth reading.

Albert Einstein sent a letter about a potential atomic weapon to President Roosevelt—who may have not even read the letter, but who politely responded, "Thanks, but no thanks," to his concern.

Classroom Clipart

You can see CVAS events on the NASA Night Sky Network calendar at https://nightsky.jpl.nasa.gov/clubs-and-events.cfm.
If you don't yet have access to the NSN website, please let a member of the Executive Committee know!
We can add you to the roster and help you create a login and password.

2024 SKY EVENTS TO PUT ON YOUR OBSERVING CALENDAR

By Tom Westre

The year 2024 is going to be an interesting year for amateur astronomy. There will be eclipses, comets, occultations, and supermoons. Here are some of the exciting events that are coming up.

1. On March 22, the planets Venus and Saturn will be in close conjunction in the predawn sky in Aquarius. Mars will also be nearby.
2. March 25 is a penumbral lunar eclipse.
3. April 8 is the date of the total solar eclipse. This will be the longest eclipse this century, coming in at four minutes and 28 seconds. The next total solar eclipse will be in 2044. During this eclipse, we can also observe comet 12P/Pons-Brooks, as well as several planets.
4. On April 11, Mars and Saturn will pass within half degree in Aquarius.
5. During the spring, the comet 12P/Pons-Brooks, which is about the size of two Mount Everests, will be visible. This comet has an orbit of 71.2 years. By the end of March, the comet will set in the west just after sunset. On April 21, it will reach peak brightness. On April 24, it will be closest to the sun. On June 2, it will be closest to the Earth. Also, don't forget to see it during the April 8 solar eclipse!
6. On September 18, there will be a partial lunar eclipse on the night of a supermoon.
7. Comet C/2023 A3 Tsuchinshan-ATLAS will be visible in small telescopes in early summer. By late September, it should be visible to the naked eye or in binoculars in the predawn eastern sky. By October, it will be passing close to the sun and disappear. Hopefully it will reappear by October 11, where it will be visible after the sun sets. During that week or so, it will rise higher in the sky.
8. On August 14, Mars and Jupiter will pass within 0.3 degrees; look in the east after midnight.
9. There will be several lunar occultations of Saturn this year, but only one will be seen from Utah. That will occur on September 17.
10. Finally, there are three supermoons in 2024.
    - August 19: the Super Sturgeon Moon;
    - September 18: the Super Corn Moon; and
    - October 17: the Super Hunter Moon.

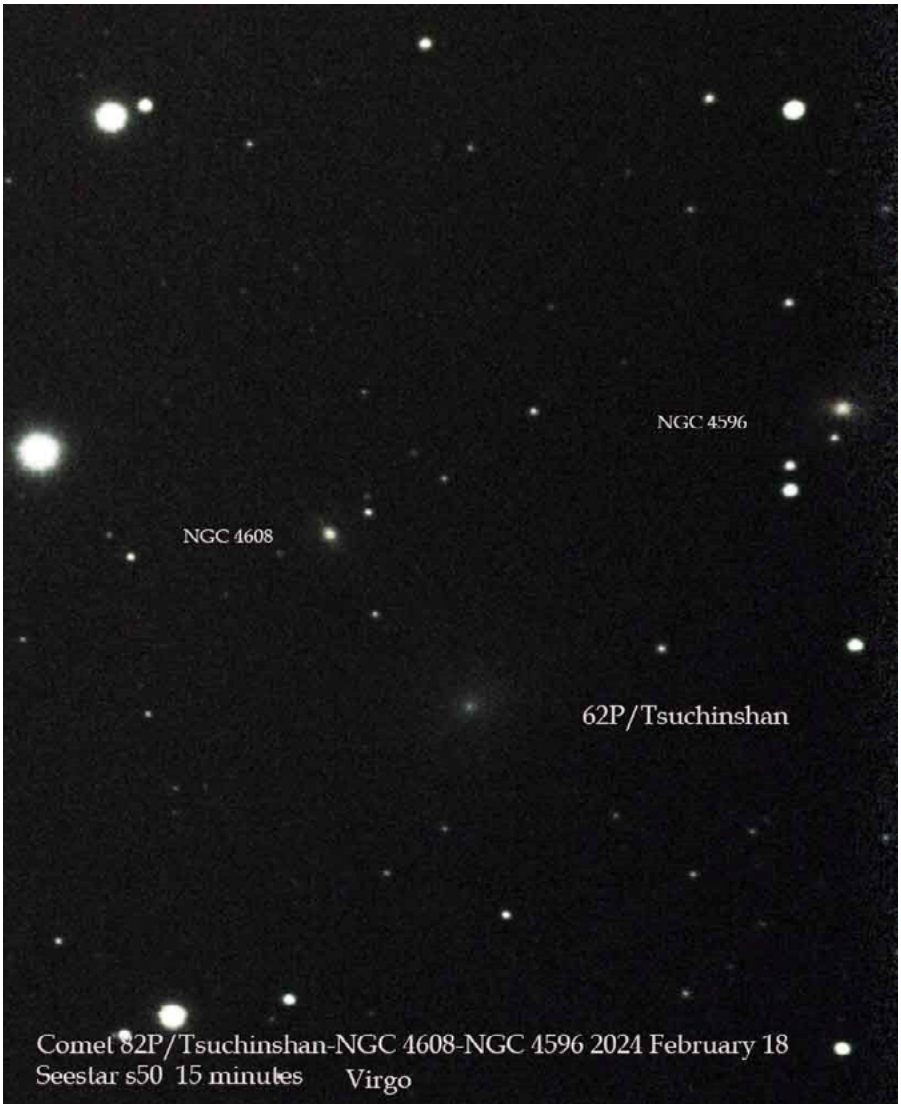


Image of Comet C/2023 A3 Tsuchinshan-ATLAS, taken with my ZWO Seestar S50 on February 18, while it was in Virgo. Note two background galaxies. It will be interesting to see how this comet looks later on this year.

Image courtesy of the author.

PARTICIPATE IN ECLIPSE SCIENCE

by Kat Troche

April is NASA's Citizen Science Month, and there is no shortage of projects available. Here are some citizen science projects that you can participate in on April 8, on and off the path of totality, right from your smartphone!

Eclipse Soundscapes

Eclipse Soundscapes will compare data from a 1932 study on how eclipses affect wildlife—in this case, crickets. There are a number of ways you can participate, both on and off the path. NOTE: You must be 13 and older to submit data. Participants 18+ can apply to receive the free Data Collector kit. Learn more at https://eclipsesoundscapes.org/.

GLOBE Eclipse

Folks that participated in the GLOBE Eclipse 2017 will be glad to see that their eclipse data portal is now open! With the GLOBE Observer smartphone app, you can measure air temperature and clouds during the eclipse, contributing data to the GLOBE program from anywhere you are. Learn more at observer.globe.gov/.

HamSCI

HamSCI stands for Ham Radio Science Citizen Investigation. HamSCI has been actively engaged in scientific data collection for both the October 14, 2023, annular solar eclipse and the upcoming April 8, 2024, total eclipse. Two major activities that HamSCI will be involved in around the solar events will be the Solar Eclipse QSO Party (SEQP) and the Gladstone Signal Spotting Challenge (GSSC), which are part of the HamSCI Festivals of Eclipse Ionospheric Science. Learn more about these experiments and others at https://hamsci.org/eclipse.

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Eclipse Science, cont'd from p. 13

SunSketcher

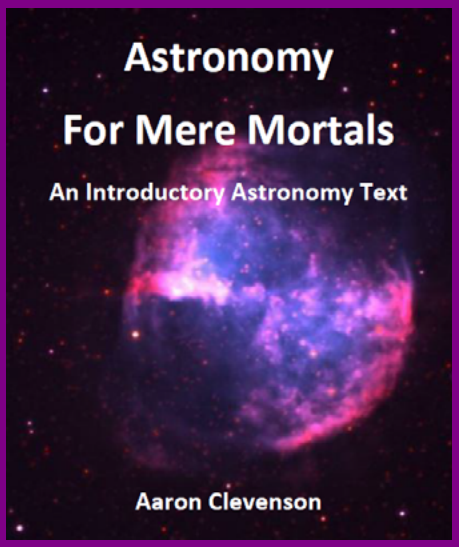
If you're traveling to totality, help the SunSketcher team measure the oblateness, or shape, of the sun during the eclipse by timing the flashes of Baily's Beads. You will need a smartphone with a working camera for this, along with something to hold the phone in place—don't forget a spare battery! NOTE: The app will need to run from five minutes before the eclipse starts until the end of the eclipse. Any additional phone use will result in Sun Sketcher data loss. Learn more at http://sunsketcher.org/.

Don't stop at the eclipse! NASA has citizen science projects you can do all year long—from cloud spotting on Mars to hunting for distant planets! By contributing to these research efforts, you can help NASA make new discoveries and scientific breakthroughs, resulting in a better understanding of the world around us, from the critters on the ground, to the stars in our sky.

We'll be highlighting other citizen science projects with our mid-month article on the Night Sky Network page, but we want to wish all you eclipse chasers out there a very happy, and safe solar eclipse! For last minute activities, check out Night Sky Network's Solar Eclipse Resources section!

Images courtesy of NSN.

This article is distributed by NASA's Night Sky Network (NSN).
The NSN program supports astronomy clubs across the USA dedicated to astronomy outreach. Visit https://nightsky.jpl.nasa.gov/ to find local clubs, events, and more!



Astronomical League

Astronomy for Mere Mortals

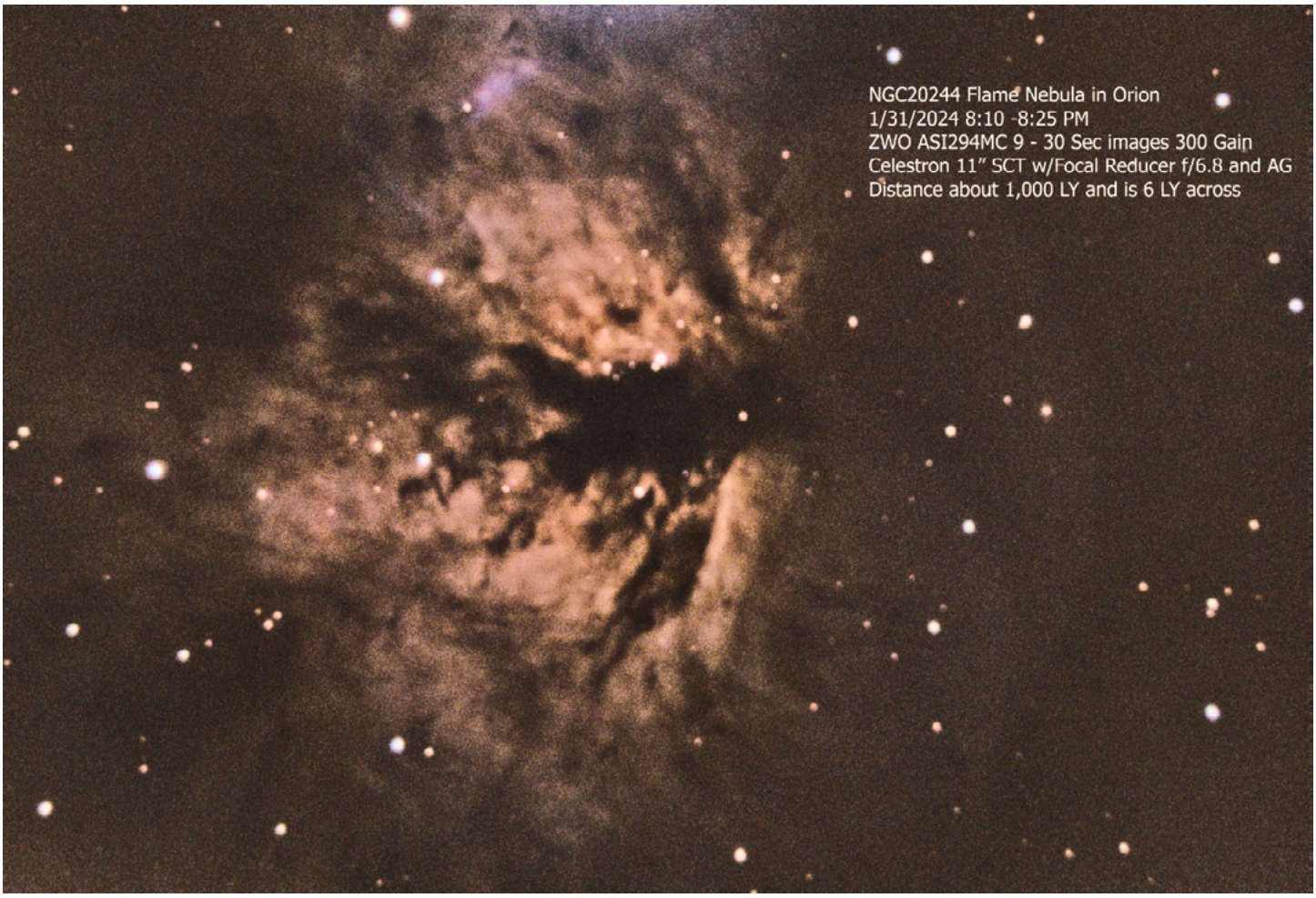
You can download the e-book, *Astronomy for Mere Mortals* by Aaron Clevenson, a complete introductory textbook, available free, updated annually.

You can download a free PDF here. You may print it, or if you would like a printed copy, please contact the author, Aaron Clevenson, at aaron@clevenson.org.

Clipart Library

ASTROPHOTOGRAPHY GALLERY

Recent Images by Club Members



Dell Vance

Flame Nebula, in Orion. January 31, 2024.

PNGEgg

Your Image Could Be Here Next Month!

We all learn when you share your astrophotography with the club! Send your images to bschenkdarr@gmail.com for publication!

ATTENTION LIBRARY TELESCOPE COORDINATORS!

Star party season is here! Please contact your library and ask if they would like CVAS to host a summer star party for them. Your community will thank you!

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CONSTANT COMPANIONS: CIRCUMPOLAR CONSTELLATIONS, PART II

by Kat Troche

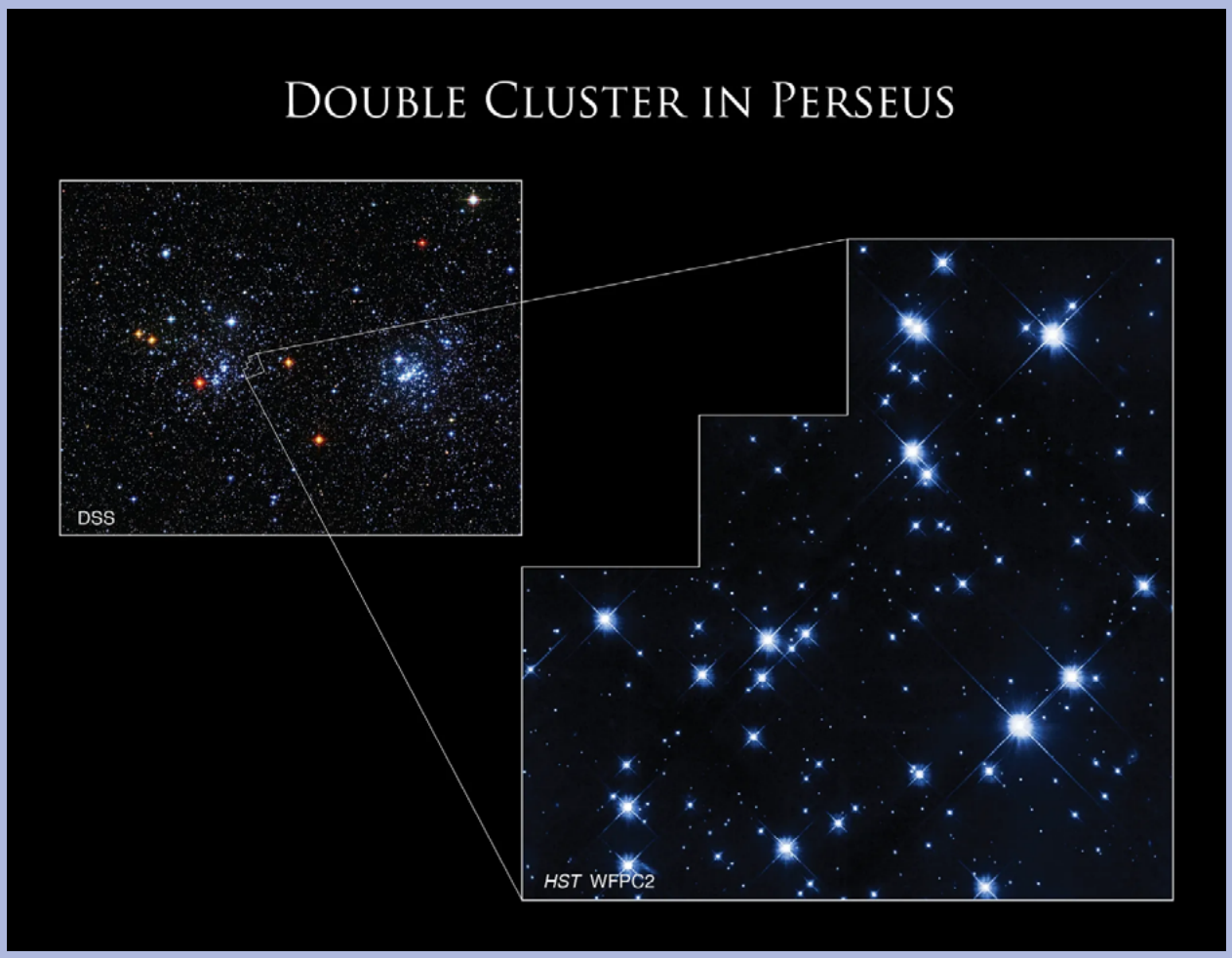
As the seasons shift from winter to spring, heralding in the promise of warmer weather here in the northern hemisphere, our circumpolar constellations remain the same. Depending on your latitude, you will be able to see up to nine circumpolar constellations. This month, we'll focus on **Lynx**, **Camelopardalis**, and **Perseus**. The objects within these constellations can all be spotted with a pair of binoculars or a small to medium-sized telescope, depending on your Bortle scale—the darkness of your night skies.

In the appearance of left to right: constellations Perseus, Camelopardalis, and Lynx in the night sky. Also featured: Cassiopeia as a guide constellation, and various guide stars.

- **Double Stars**: The area that comprises the constellation Lynx is famous for its multiple star systems, all of which can be separated with a telescope under dark skies. Some of the notable stars in Lynx are the following:
  - **12 Lyncis** – a triple star that can be resolved with a medium-sized telescope.
  - **10 Ursae Majoris** – a double star that was once a part of Ursa Major.
  - **38 Lyncis** – a double star that is described as blue-white and lilac.
- **Kemble's Cascade**: This asterism located in Camelopardalis, has over 20 stars, ranging in visible magnitude (brightness) and temperature. The stars give the appearance of flowing in a straight line leading to the Jolly Roger Cluster (NGC 1502). On the opposite side of this constellation, you find the asterism **Kemble's Kite**. All three objects can be spotted with a pair of binoculars or a telescope and require moderate dark skies.

cont'd on p. 17

Circumpolar, cont'd from p. 16



A ground-based image from the Digitized Sky Survey (DSS) in the upper left shows Caldwell 14, the Double Cluster in Perseus, with an outline of the region imaged by Hubble's Wide Field and Planetary Camera 2 (WFPC2).

- **Double Cluster**: The constellation Perseus contains the beautiful Double Cluster, two open star clusters (NGC 869 and 884) approximately 7,500 light-years from Earth. This object can be spotted with a small telescope or binoculars and is photographed by amateur and professional photographers alike. It can even be seen with the naked eye in very dark skies. Also in Perseus lies **Algol, the Demon Star**. Algol is a triple-star system that contains an eclipsing binary, meaning two of its three stars constantly orbit each other. Because of this orbit, you can watch the brightness dim every two days, 20 hours, 49 minutes, for 10-hour periods at a time. For a visual representation of this, revisit NASA's What's Up: November 2019.

Images courtesy of NSN.

This article is distributed by NASA's Night Sky Network (NSN).
The NSN program supports astronomy clubs across the USA dedicated to astronomy outreach. Visit https://nightsky.jpl.nasa.gov/ to find local clubs, events, and more!

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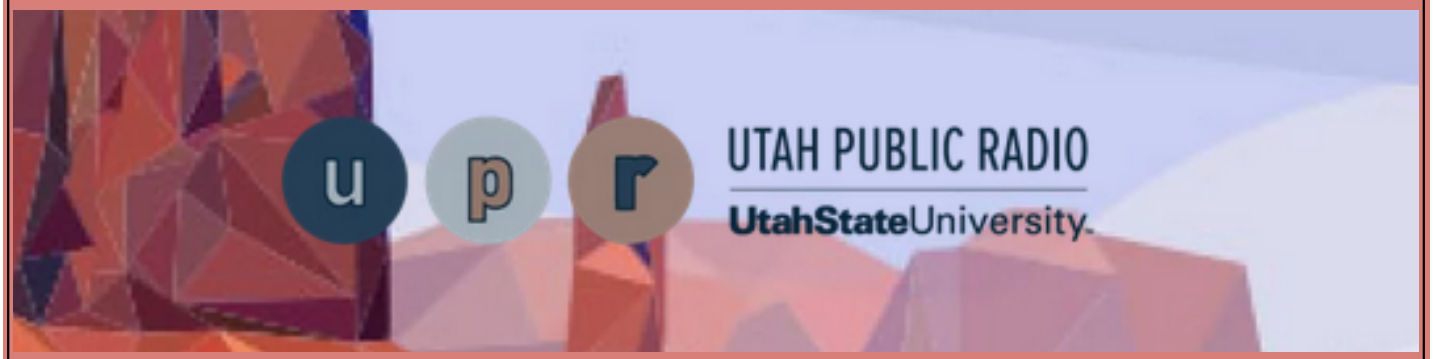
Need a quick astronomy fix?
Tune in to CVAS's astronomy show on Utah Public Radio!

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.



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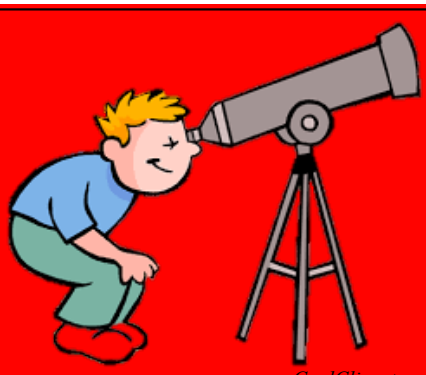


CoolClipart.com

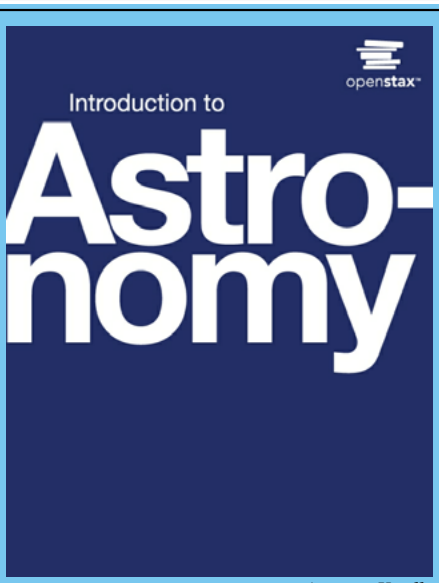
Stumped? Befuddled?? Bamboozled???
Telescope Help Is Available!

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.

Wheeler Farm

Come enjoy a unique, family-friendly experience. Come while it's still light out to take a look at the animals and have some hot chocolate. At 9:00, Clark Planetarium will host a star party and fun activities for the kids!

Date: May 10, 2024, weather permitting.
Location: Wheeler Farm
6351 South 900 East Murray, UT 84121
Cost: Free, but you must reserve your tickets here.



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Hey, Astronomy Hero! What's Your Origin Story?

CVAS members are astronomy superheroes who share their love of astronomy with the galaxy! (Or, at least with the people of Earth!)

What piqued your interest in astronomy? Please tell us! Send your article to Bonnie for inclusion in next month's newsletter!

A LITTLE ASTRONOMY HUMOR

ATTENTION! This is a JOKE. Do NOT try it! You WILL go blind!

I Can Has Cheezburger and 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.