

PRESIDENT'S CORNER

by Bruce Horrocks

Greetings, fellow club members! It looks like spring will be here before you know it and, to be honest, I wish we had lots more snow. I have no problem with the warmer temperatures, and I do enjoy being able to go out when the thermometer is at least above freezing. I always worry about frost building up inside some little compartment in my mount, or heaven forbid on the inside of a telescope lens or camera sensor. I guess I am a bit like Goldilocks, I like it when it is not too hot, not too cold, but just right.

We missed most of you at our last month's club meeting! Where have you all been? We realize that due to COVID, many groups and clubs have struggled to maintain memberships due to the lack of meetings and the emphasis on social distancing. We fully understand if you feel it necessary to take added precautions. We also realize that it has been a struggle to find a centrally located meeting place. The library is mostly a pile of rubble nowadays, and so it is for sure out of the question of any future use. We appreciate Tom Westre for securing the Nibley City office building for us each month. The room actually works really well; we just know that it is a bit longer commute for those in the northern part of the county to drive down to. We really would be happy to meet in Logan if we can find a suitable location that will work. If any of you have a good idea, please pass it on to us. Logan City is building a new meeting room that I have been told we can use but it is still a year or so out from completion.



Shannon Horrocks

UPCOMING EVENTS

Meeting

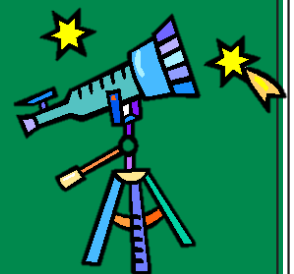
Date: Tuesday, March 15,
2022

Time: 7:00 p.m.

Place: Nibley City Offices
455 West 3200 South
Nibley, UT 84321

Guest Speaker: Lyle Johnson

Subject: Backyard Astronomy



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STEM Events

School STEM events are a great chance for us to share our love of astronomy! We only need two to three people for each event. Contact Bruce to volunteer. Because of the pandemic, a face mask might be required, and we might have last-minute cancellations. During the winter, we stay indoors, so you won't have to worry about getting cold! Upcoming dates:

- March 16: Providence Elementary
- March 31: White Pine Elementary (Richmond)
- April 14: Cedar Ridge Elementary (Hyde Park)

Please plan to arrive at
5:30.

Keep up to date by visiting
our website:



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

This month's meeting will still be held in Nibley and so we would like to encourage you to come and join us.

Last month, we had Hyrum resident Carl Richards come and show us some of his photography of the Milky Way. He had some outstanding images of the night sky and some beautiful foregrounds that made for nice pictures. Carl only uses his camera and no telescopes. He gave us many good reasons to see how you can enjoy the hobby of astronomy without fancy telescopes or gear. We also had a couple of new visitors to our club and one young man, Dean L., was showing me some exceptional images he has been taking with a telephoto lens and his camera (see p. 8). We hope that he will join us again for future meetings.

Tom Westre was our concluding speaker and has given us all the challenge to push ourselves and our equipment to reach of for some distant galaxies that are far, far, away. I really appreciate Tom's enthusiasm for this topic, and while the images are not so beautiful and cool, they really are mind blowing when you think of the distance that you are seeing something from. I was kind of excited to take on this challenge to go see what NGC 169 looked like, so the next night before the moon came up, I took a few 11-minute exposures



Bruce Horrocks

of this to see what I could see. I must add that I have a dual band filter in my optical train, so that kind so reduced some of the effectiveness in my image, but I was able to find it and see something there. Thanks again to Carl and Tom for their presentations, and we do hope to see more of you there this month.

I would also like to thank all of you that have helped with the Cache County School District STEM nights. We greatly appreciate your efforts in doing some of this outreach work and I feel it is a great way to show the kids and parents something they might enjoy doing outside. There is so much of life to enjoy, it really gets me to see so many people spending way too much time inside and not getting out a bit more.

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**A LONG TIME AGO
IN A GALAXY FAR,
FAR AWAY . . .**

Bonnie Schenk-Darrington

Challenges from Our President

- Suggest a new venue for meetings, if you know of a good place.
- Come out and join us at meetings!
- Push yourself and your equipment to capture those distant photons from a galaxy far, far away!

NASA NIGHT SKY NETWORK OUTREACH AWARDS

by Dell Vance

Each year, the Night Sky Network offers awards for clubs that meet the requirements for outreach activities. During the pandemic, the requirements have been very low due to the reduction in activities across the country. CVAS easily meets the requirements each year with our activities. Our outreach activities include:

- Star parties
- STEM (science, technology, engineering, and math) fair participation
- Coordination of the library telescope lending program (we have telescopes in every library in the valley)
- Presentations in our monthly club meetings
- Presentations in local schools, as requested by teachers
- Radio spots on Utah Public Radio (Utah Skies)
- Contributing articles and photos to the newsletter

All of these activities encourage the local community to get involved in astronomy.

For 2021, we had 15 recipients of the awards. Each have participated in at least one of these activities. The



Night Sky Network

recipients are as follows:

- Blaine Dickey
- Dale Hooper
- Bruce Horrocks
- Lyle Johnson
- Brady Mikesell
- Dale Nartker
- Richard Palfreyman
- Byron Ray
- Clark Salisbury
- Bonnie Schenk-Darrington
- James Somers
- Dell Vance
- Wendell Waters
- Tom Westre
- Paul Yamaguchi

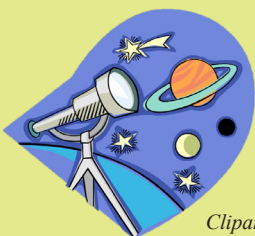


Bonnie Schenk-Darrington

CVAS congratulates and thanks all of the recipients for their support in our club activities. Each recipient receives a certificate and a pin. The pin changes every year, based on NASA discoveries and projects. This year's pin features Mars rover Perseverance and Mars helicopter/scout

Ingenuity.

As a side note, you can log your participation on the Night Sky Network for each of our activities. This would help us remember who participated in each activity for the year. If you need help starting a Night Sky Network account, please contact me at avteam.dell@gmail.com.

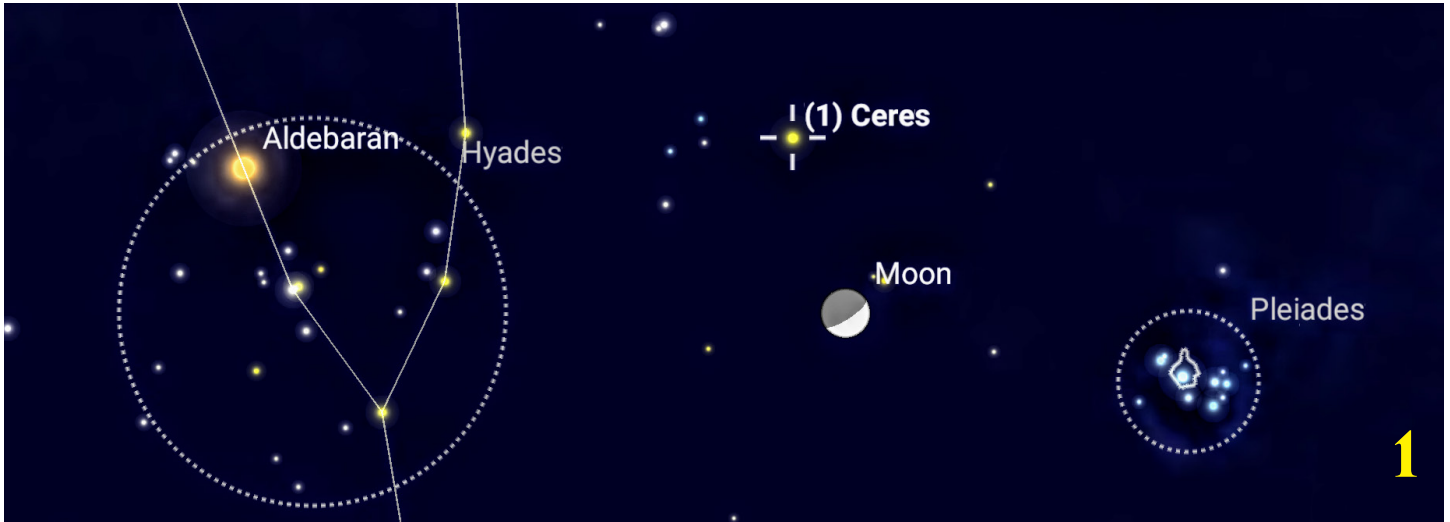


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Got a cool image, story, or article? Please share it with us! Send it to Bonnie at bschenkdarr@gmail.com.

SPRINGTIME CELESTIAL WONDERS

by Blaine Dickey



Now that the winter season is moving on here in northern Utah, it is a good time to look ahead for the next several months to see what is happening in the night sky. Each celestial event is really unique because it will never repeat itself exactly the same ever again.

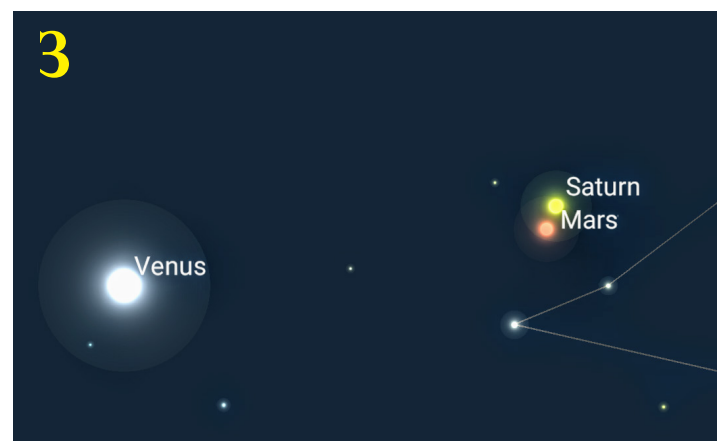
On the evening of **March 8, 2022**, the 37 percent illuminated moon is nearly centered between the red star Aldebaran in Taurus and Messier 45 (the Pleiades). The asteroid Ceres is located just 2 1/2 degrees above the moon as shown in **illustration 1**. A pair of binoculars will show Ceres at magnitude +8.9.

On **March 28** at 6:30 in the morning, a nice group of objects including Mars, Saturn, Venus, and the moon are congregating together in the morning sky, as seen in **illustration 2**.

About a week later on **April 5**, the planets Mars and Saturn will move to within 1/2 degree of each other. Both should be visible in the same telescopic field of view in the morning sky (**illustration 3**).

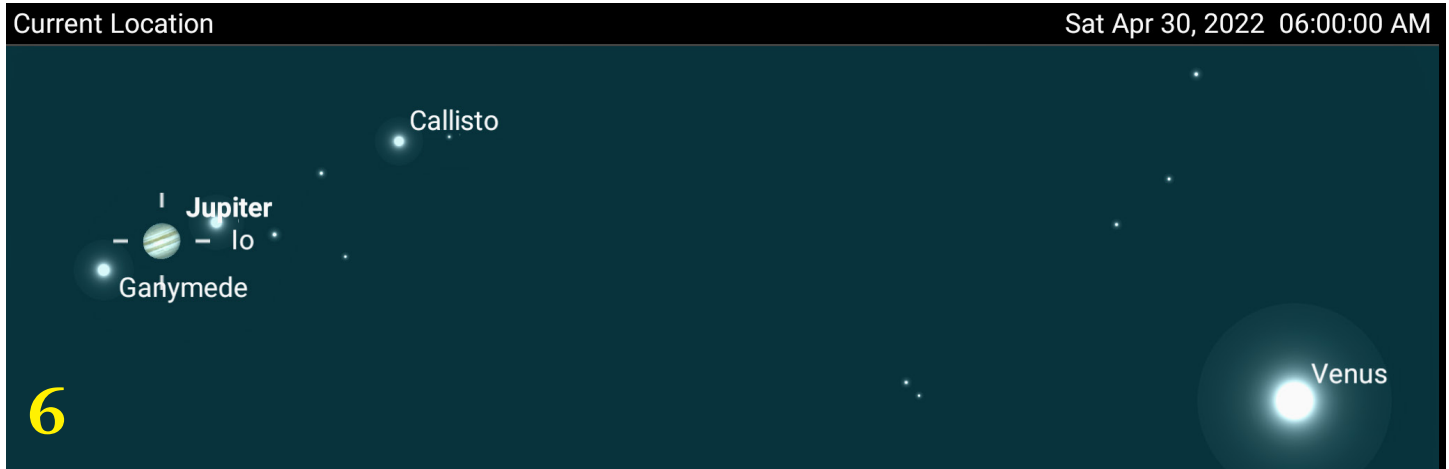
A new comet, C/2021 O3 (PanSTARRS), is coming our way and will be visible in the early evening sky **between April 21 and May 5**, just above the Wellsville mountains in the western sky. It may be visible to the unaided eye, and certainly should be visible with binoculars or any small or large telescope (**illustration 4**).

On the nights of **April 22 and 23**, the Lyrid meteor shower may be seen in the eastern evening sky. This is



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Springtime, cont'd from p. 4



a lesser shower but you can still expect about 20 meteors per hour. The radiant point will be rising around 10:00 p.m., so it will be a late-nighter but you will see meteors that no one else in the world has ever seen before. By finding Vega in Lyra in the northeastern sky, you will know about where the meteors will emanate from. These meteors are related to Comet Thatcher, which was seen in the year 1861. It is possible there could be more meteors because the planets sometimes move meteors toward the Earth in bunches. See **illustration 5**.

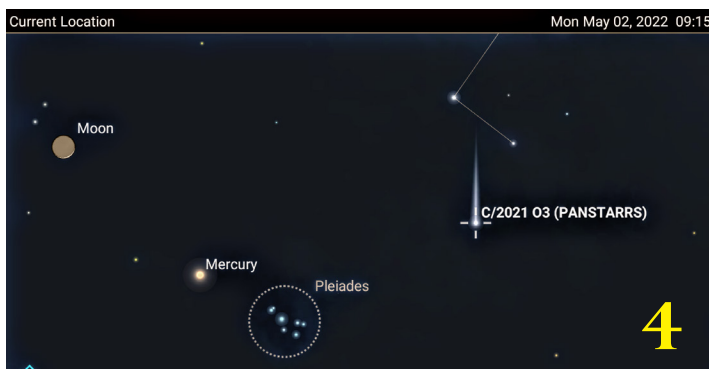
On the early morning of **April 30** a rare conjunction of the planet Venus and mighty Jupiter occurs. These brilliant planets will move to within less than a half degree of each other. Venus will be illuminated by 2/3 at magnitude -4.1. Jupiter, to the left of Venus, will be seen at magnitude -2.1 and is surrounded by three of its moons, Ganymede to its left, and Io and Callisto to its right. Those on the western side of the valley will have the advantage because the conjunction is only 9 degrees above the eastern horizon at 6:00 a.m. See **illustration 6**.

Finally in the early evening of **Sunday May 15**, the



fully eclipsed moon will rise over the mountains to our east after 9:30 p.m. The Earth's shadow will continue to cover the moon until 11:47 p.m. In my opinion, the fully eclipsed moon is one of the most beautiful celestial events, with the exception of a totally eclipsed sun. Seeing the dim, reddish moon hanging in a star-studded sky is indescribable. The past few lunar

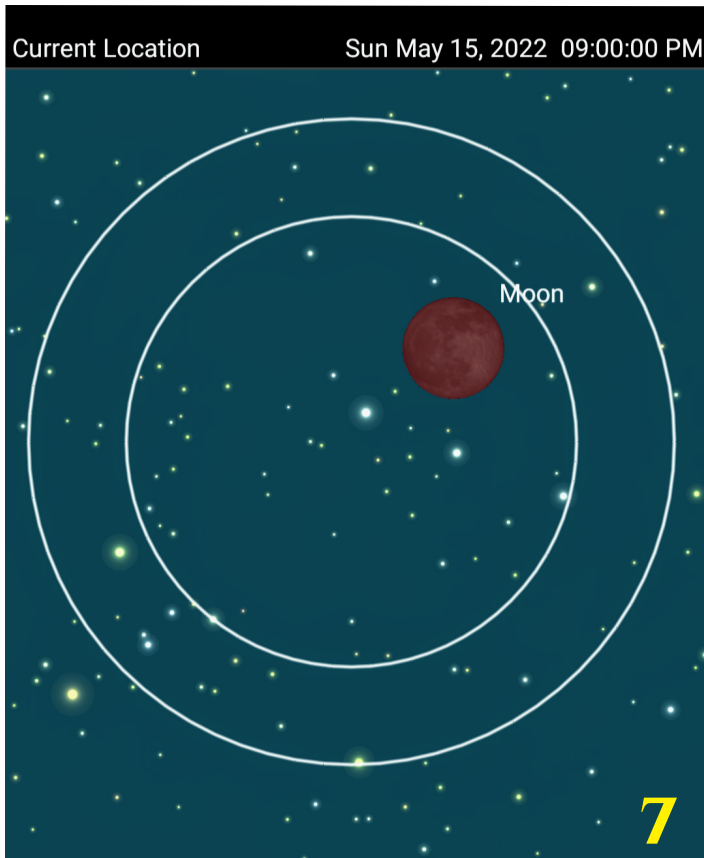
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Springtime, cont'd from p. 5

eclipses have been covered with haze or clouds, so maybe this time we will be favored with better skies and warmer weather. See **illustration 7**.

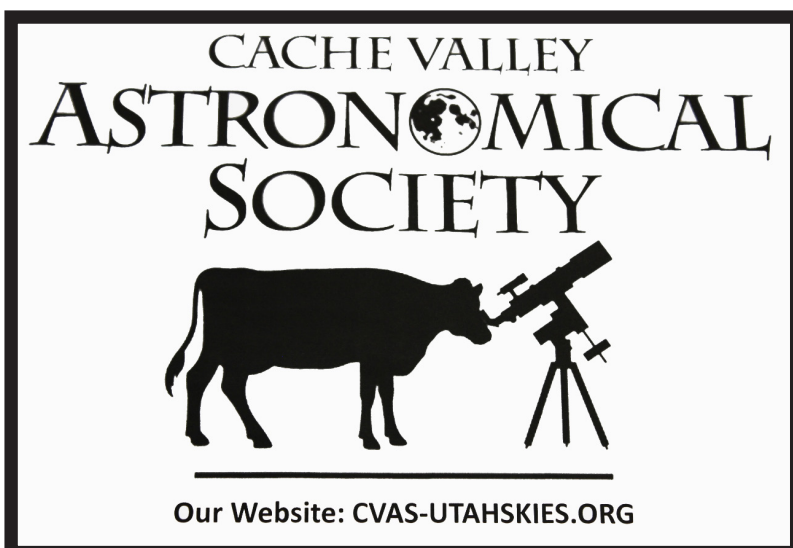
All images in this article are from the SkySafari 6 Pro android App, courtesy of the author.



Summary of Events in This Article

- March 8: Moon between Pleiades and Aldebaran with Ceres
- March 28: Planetary Trio
- April 5: Mars and Saturn within $1/2^\circ$
- April 21–May 5: Comet C/2021 O3 PanSTARRS in western sky
- April 22–23: Lyrid Meteor Shower
- April 30: Venus and Jupiter within $1/2^\circ$
- May 15: Total Eclipse of the Moon

You may wish to keep track of the events you observe by checking off each box.



EXECUTIVE COMMITTEE

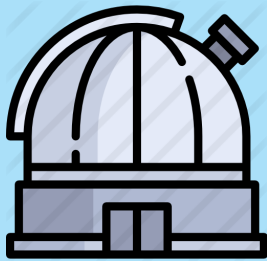
- President: Bruce Horrocks; bruceh@gembuildings.com
- Vice President: James Somers; james.m.somers@aggiemail.edu.usu
- Secretary/Treasurer: Bonnie Schenk-Darrington; bschenkdarr@gmail.com
- Night Sky Network Coordinator: Garrett Smith; GarrettGillSmith@gmail.com
- Past President: Dell Vance; avteam.dell@gmail.com
- Public Relations: Lyle Johnson; lyledj@aol.com
- Webmaster/Librarian: Tom Westre; twestre45@aol.com

President's Corner, cont'd from p. 2

We have three more STEM nights coming up. They are March 16 in Providence, March 31 at White Pine, and the last one is April 14 at Cedar Ridge. Again, these are generally 6:00 to 8:00 and no previous experience is necessary.

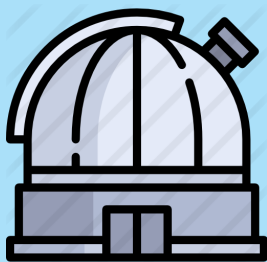
So, to close, I just want to again encourage you all to follow out Tom's challenge and go for something that is way, way, out there. Besides, I hear they are making a Star Wars Obi-Wan Kenobi TV show, and that is where he lived. If there is anything you would like us to address as a topic in our meeting, please let us know and, until then, here is to . . .

Clear Skies,
Bruce Horrocks



**USU
Observatory
Public Night**

The USU Observatory is closed for the winter. The next public night will be in late March or early April. More info available [here](#).



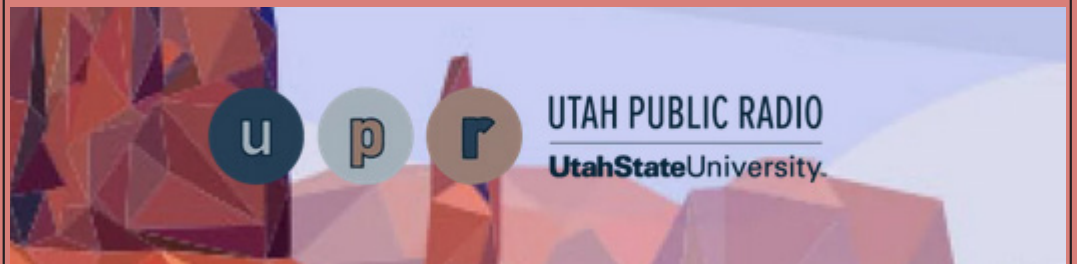
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Need a quick astronomy fix?
Tune in to CVAS's astronomy show on Utah Public Radio!

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](#).



ASTROPHOTOGRAPHY GALLERY

Recent Images by Club Members



Messier 42

Richard Palfreyman

Took this in January using a quadband narrow band filter with my OSC camera of Messier 42, just to see what I could get. This is from 127 subs at 90-second exposure times to try and get some of the surrounding details.



Several Wonderful Pictures

Dean L.

He took some with a Canon Eos 77d with a (old) 24-300mm f/3.5-6.3 for the Milky Way core shots, and for the tracked deep space shots, Dean used a (new) Canon 70-300mm f/4-5.6 with a Sky-Watcher Star Adventurer Mini.

MERCURY-SATURN CONJUNCTION

by Dell Vance

Tomorrow morning, March 2, a half hour before sunrise, four planets will be visible in the southeast. The brightest planet will be Venus at a magnitude of -4.72 and a distance of 50 million miles. Just below it is Mars at a magnitude of 1.25 and a distance of 185 million miles. Remember, the smaller the magnitude number the brighter the object.

The real challenge will be to see the remaining two planets, which will be only a few degrees above the horizon. Mercury and Saturn will be in conjunction with each other. Conjunctions happen when objects in the sky appear to be close to each other. For this conjunction Mercury and Saturn will be less than 1 degree apart (only 42 minutes of angle) and appear to be moving in opposite directions. Mercury will be moving behind the sun after this day, so it won't be seen until April, when it will appear in the evening sky. Saturn, on the other hand, is moving out from behind the sun and will be visible in the early morning sky for the whole month of March. Mercury will be at a magnitude of -0.11 and a distance of 108 million miles. It will be brighter than Saturn, which will be at a magnitude of 0.78 and a distance of 1 billion miles.



Dell Vance

Viewing Mercury and Saturn will take some planning. It will be very close to sunrise, so you want to have a spot where you have a good view of the southeastern horizon. If you are in a valley, it helps to be on the western side of the valley to be able to get a better view of these planets before sunrise. They should be visible about half an hour before sunrise.

You might recall the Grand Conjunction we had between Jupiter and Saturn in December 2020. Conjunction

cont'd on p. 11

Free Online Course: Introduction to Amateur Astronomy



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We advertised this course in our January issue and in our club e-mails. Kalamazoo (Michigan) Astronomical Society has been giving a free introductory astronomy class online. Students who attend all five sessions even receive a nifty certificate!

It's too late to formally join the class. But CVAS has been given special permission to post the YouTube videos of the lectures! So, if you'd like to brush up on your introductory astronomy, here are links to the first four lessons. Once the fifth and final lesson has been posted, we'll post that one, too!

They have a gift shop full of cool stuff and offer many free online lectures, besides the introductory class. You can check out their main website at <https://www.kasonline.org>.

Introductory Astronomy Lessons

[Part 1: Our Place Among the Infinities](#)

[Part 2: Discovering the Night Sky](#)

[Part 3: Binocular Basics](#)

[Part 4: Telescope Tutorial](#)

Part 5: Astrophotography--COMING SOON!

UPCOMING ASTRONOMY EVENTS AND ANNIVERSARIES

- March 2: New moon.
- March 4: Benjamin Franklin Peery, Jr. born in 1922. He was especially interested in cool giant stars, and pioneered astronomy and science education programs targeted at Black children and adults. You can read his obituary [here](#).
- March 5: Jupiter at solar conjunction. Jupiter's orbit will soon take it behind the sun, on the opposite side of the solar system from Earth. You can print a chart to help you find Jupiter in the sky [here](#).
- March 6: Close approach of the moon and Uranus.
- March 6: Carolyn Porco born in 1953 in New York City. She served on the imaging teams for both the Voyager and Cassini missions and is an expert on Enceladus (a moon of Saturn) and planetary rings. You can read more about her [here](#).
- March 7: NASA launched the Kepler observatory in 2009, hoping to discover Earthlike planets orbiting other stars.
- March 12: Conjunction of Mars and Venus at 4:46 a.m. MST.
- March 13: Daylight saving time begins at 2:00 a.m.; set clock ahead one hour.
- March 13: William Herschel discovered the planet Uranus in 1781. He originally believed it to be a comet. (See also Caroline Herschel, below.)
- March 14: Pi Day. You can read a brief history of this mathematical holiday [here](#). It's a great day to enjoy some pie with a mathematically-minded friend!
- March 14: European Space Agency robotic spacecraft Giotto observed Halley's Comet in 1986—the first satellite to fly by and photograph a comet up close. You can read more about it [here](#).
- March 16: Comet 22P/Kopff will be at perihelion (closest approach to the sun). It will be difficult to



see from Cache Valley, however, as its perihelion will be during the daytime here. It will be a maximum of 7 degrees above the horizon at dawn.

- March 16: Robert H. Goddard launched the first liquid-fueled rocket in 1926.
- March 16: Caroline Herschel born in 1750, in Hanover. She eventually immigrated to Bath, England, where she lived and worked with her brother, William. The pair became interested in astronomy. Eventually, Caroline discovered multiple comets, and became the first woman to earn a salary as a scientist and to publish her findings in the *Philosophical Transactions of the Royal Society*. She was widely lauded and received awards and honors for her work in England, Ireland, and Prussia. You can read more about her [here](#).

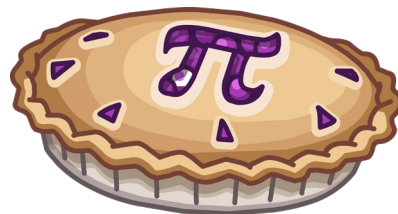
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- March 18: Full moon.
- March 18: NASA's MESSENGER became the first spacecraft to orbit Mercury in 2011.
- March 20: Venus at greatest elongation west (distance from sun) and also at dichotomy (appearing at half phase). It will be shining at magnitude -4.4 during its morning apparition. For more information, look [here](#).

KindPNG

- March 20: Moon at aphelion (farthest point from the sun).



KindPNG

- March 20: Vernal equinox at 9:27 a.m. MDT.
- March 20: Alien Abduction Day. You can read more about this holiday [here](#).
- March 22: Ulugh Beg Mirza born in 1394, in Sultaniyah, Iran. He was the grandson of Timur (Tamerlane). A deputy during his father's rule, he ruled the Mawaraunnahr region, especially the city Samarkand, where he built an observatory that was very sophisticated for its time. He and the

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Conjunction, cont'd from p. 9

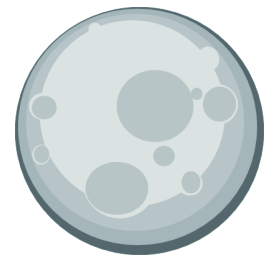
tions happen quite often and can be exciting to see two objects optically close to each other. In the image for the Grand Conjunction, the two planets appear to be right next to each other (only a 6 1/2 minutes of angle away); however they are about 733 million miles away from each other.

For the conjunction between Mercury and Saturn, they appear very close to each other, but they are almost 900 million miles away from each other.

Upcoming, cont'd from p. 10

astronomers he hired calculated the obliquity of the ecliptic, or path of the sun and where it crosses the equator. He also published a star catalogue, the *Zij-I Sultani*, that became the seminal such work until the seventeenth century. You can read more about him [here](#).

- March 23: Moon at perigee.
- March 23: Wernher von Braun born in 1912 in Wirsitz, Posen Province, German Empire.
- March 25: Honore Flaugergues discovered the Great Comet of 1811.
- March 27 – 29: Multiple conjunctions and appulsuses of the moon, Mars, Venus, and Saturn. This might be best viewable through binoculars. *National Geographic UK* calls this “a majestic celestial ballet.” You can read more about it [here](#).
- March 28: Dwarf planet 136472 Makemake at opposition.
- March 29: Moon at perihelion.



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Free Astronomy 101 Textbook Now Available!

In an effort to democratize knowledge, the [OpenStax](#) project produces free digital and inexpensive hard-copy college-level textbooks written by professionals in many fields. You do not have to be a college student to request a copy. You can read more about the new astronomy textbook [here](#). And you can download or order a copy [here](#).

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A LITTLE ASTRONOMY HUMOR



Memebase



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