CACHE VALLEY ASTRONOMICAL SOCIETY
cvas-utahskies.org

# CACHE VALLEY CLEAR SKIES

Journal of the Cache Valley Astronomical Society

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# PRESIDENT'S CORNER

**By Dell Vance**

*Ann-Maree Vance*

May was a blur for me. We had a Star Party at the North Logan Library on May 10. We had seven telescopes/binoculars there for the library patrons to view through. It was well attended. James Somers coordinated the event for us and did a great job. It was also the night of the aurora borealis. That was spectacular! I did some imaging, but was taking 50- to 60-second exposures. It tends to blend the colors so I didn't get the detail that others did. The next night I imaged again; this time the aurora was smaller, but I used 20-second exposures and that worked better. I'm amazed at some of the images our members were getting.

The following Friday, May 17, we had our star party with the Smithfield Library, which Bruce Horrocks coordinated. It also had about six telescopes/binoculars there. I was impressed with a young man who pumped me for information about black holes. It was a fun event.

***cont'd on p. 2***

*Freepik*

## UPCOMING EVENTS

### Club Summer Social

- June 14: 6:30 p.m. at Willow Park.
- The club will provide pizza; please bring a side dish, salad, or dessert to share.
- Solar party after dinner! Please bring your telescope and solar filter.

### Star Parties

- September 27: Newton Library

### Solar Parties

- July 25: Little Wonders Learning Center (Nibley)

### Club Meetings

- Discontinued until September, per our usual seasonal schedule.
- However, please take note that our new meeting schedule will be to meet at 7:00 p.m. on the third Thursday of the month, at the new and improved Logan Library!

Keep up to date by visiting our website:

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

As you may know, Bruce Horrocks is teaching an astronomy class to the Summer Citizens. I did get the opportunity to sit in on some of his presentations. He is doing a great job and they are well attended. Bruce is working out the details for a star party for the Summer Citizens. Be sure to watch the emails as we get those dates. I'm very pleased with all the activities that are going on for the club.

June 14 is the date for our annual CVAS pot luck. We will have it at the Willow Park their by the zoo again. We plan to start about 6:30 p.m. We will have some telescopes there for solar observing. It is for the whole family. The club will provide pizza and paper goods. We encourage you to bring a side dish (salad, chips, etc.) or a dessert. It should be a good night. We will send out a notice via the Group.io email for you to let us know how many from your family are coming. This will help us get an idea of how much pizza to get. Be sure to watch for the email and let us know.

We are getting requests for some events already in July and September. It should be a good summer.

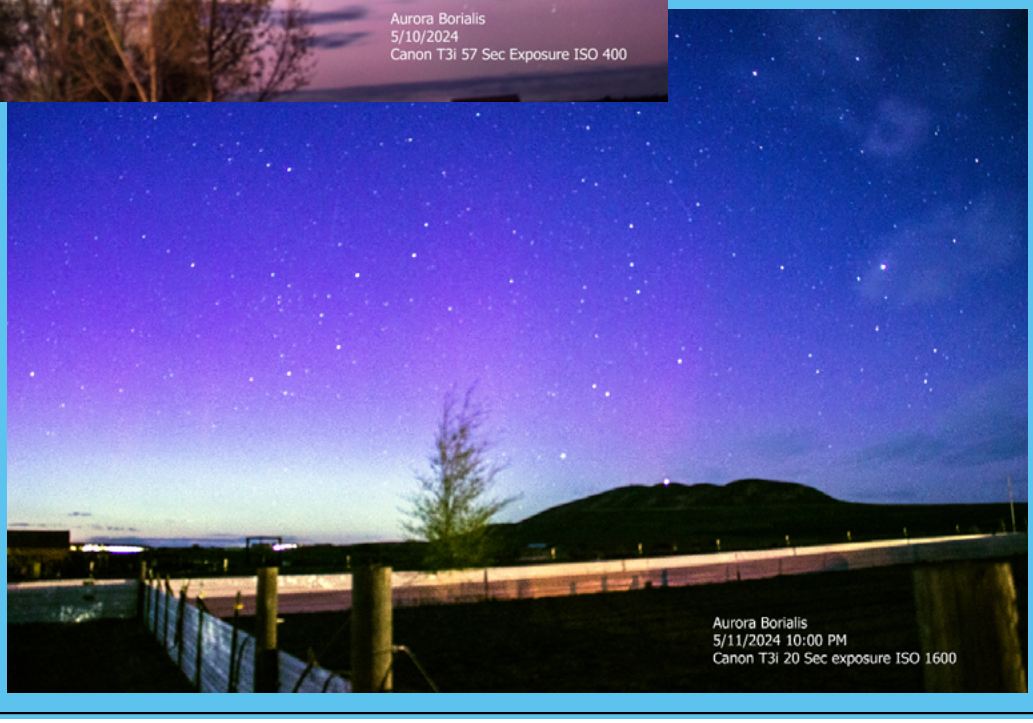
Thanks again for all your support.

Clear skies!

*Images courtesy of the author.*


*Freepik*

*Freepik*



# SURFING THE SKY WITH THE ZWO SEESTAR S-50

**By Blaine Dickey**

In late March of this year, I acquired a ZWO Seestar S-50 smart scope after an engaging presentation by Boyd Edwards at a recent CVAS meeting. Initially, I wasn't fully aware of the scope's capabilities, but it has exceeded my expectations. I enjoy setting it up in my backyard, then retreating indoors to watch captivating deep-sky and solar system images appear on my tablet or smartphone. All the images in this article were captured using my Seestar.

Recently, my interest has turned to a comet expected to grace the western sky with a magnitude of 0.0 in early October. In this article you will find an image of Comet C/2023 A3 (Tsuchinshan-ATLAS) which, despite still being located between the orbits of Mars and Jupiter, is already developing a promising tail (figure 1). This comet has the potential to become one of the great comets of this century!

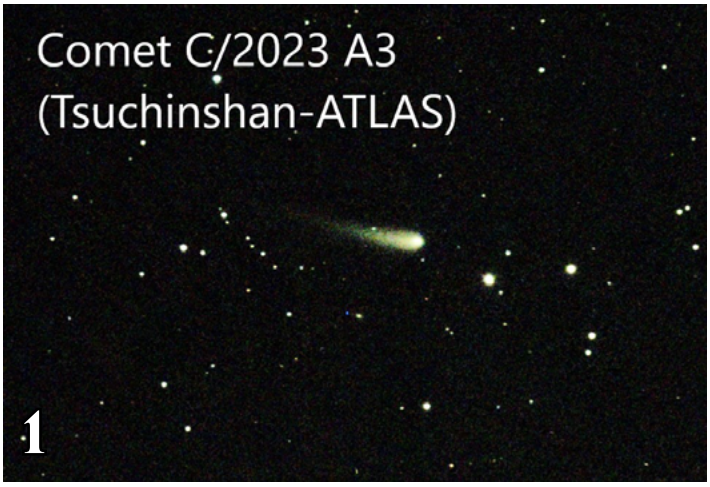
PIC 1

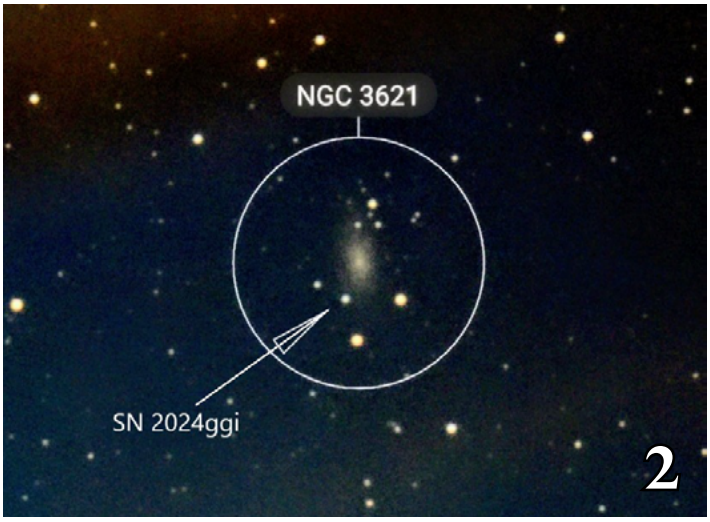
Additionally, the supernova SN 2024ggi recently appeared in the galaxy NGC 3621 and was clearly visible in the included image. At the time, it measured around magnitude 11.7. Consider that all the stars in the picture belong to our Milky Way galaxy, except for the supernova, indicated by an arrow. This realization highlights the intrinsic brightness of the supernova at a distance of 22 million light-years within the galaxy NGC 3621 (figure 2).

Furthermore, I was pleasantly surprised to count 12 galaxies surrounding Messier 86 (figure 3). Messier 86 itself lies approximately 57 million light years away, while IC 3349—one of the faintest galaxies in the image—resides at a staggering 79 million light-years from us.

During my observations, I also turned my attention to some of the familiar Messier objects: Messier 17 (figure 4), 27 (figure 5), 20 (figure 6), and 101 (figure 7). I also imaged the moon (figure 8). The Seestar performed admirably in capturing their details as seen in the included images.

The scope autofocuses and has a built-in dew heater, solar filter (see figure 9), and light pollution filter. It finds the object by plate solving and then centers it and tracks the image automatically. It also processes,





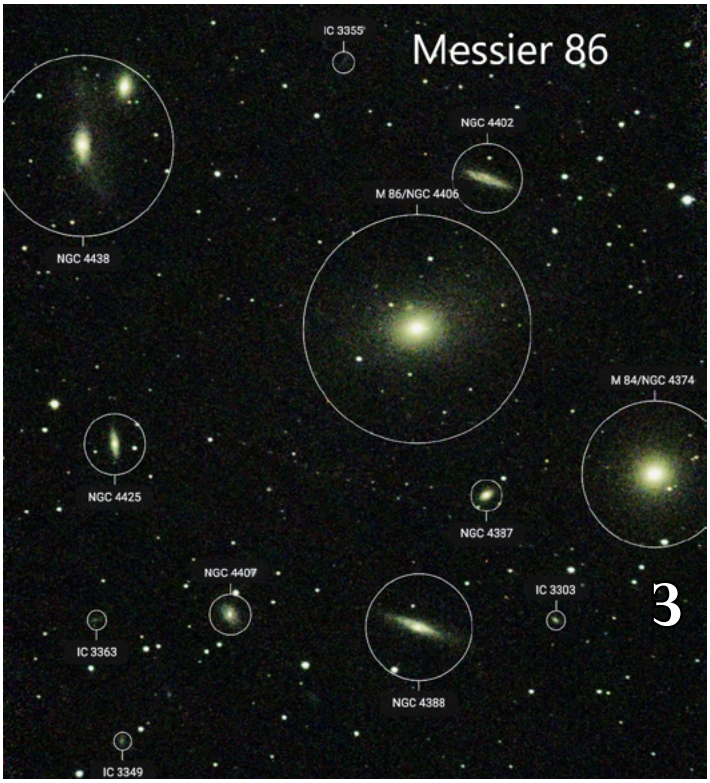
*cont'd on p. 4*

## *Seestar, cont'd from p. 3*

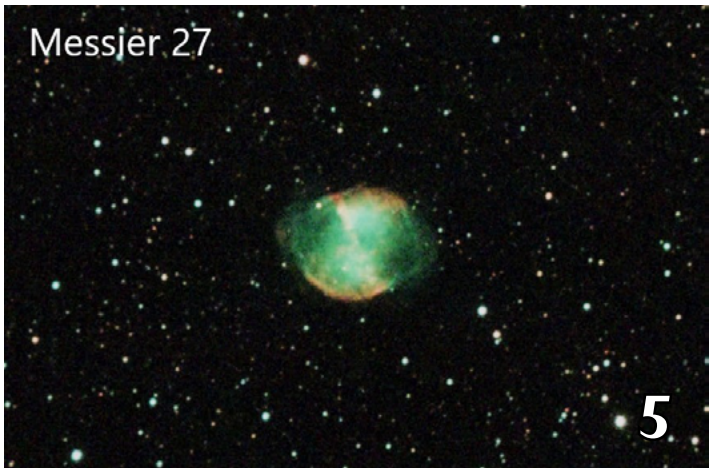
stacks, and saves the image automatically; the image can be then transferred to a computer or phone via a cord or Wi-Fi. It comes with a sturdy tripod and weighs just five pounds; it stores in a hard foam case.

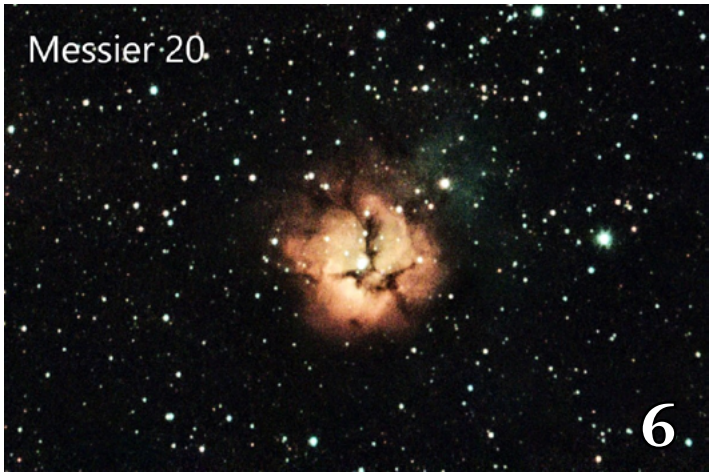
Lastly, the convenience of setting up, operating, and dismantling this scope is remarkable. Its portability makes an excellent travel companion, and the image quality surpasses my initial expectations, despite its modest 2-inch objective lens.

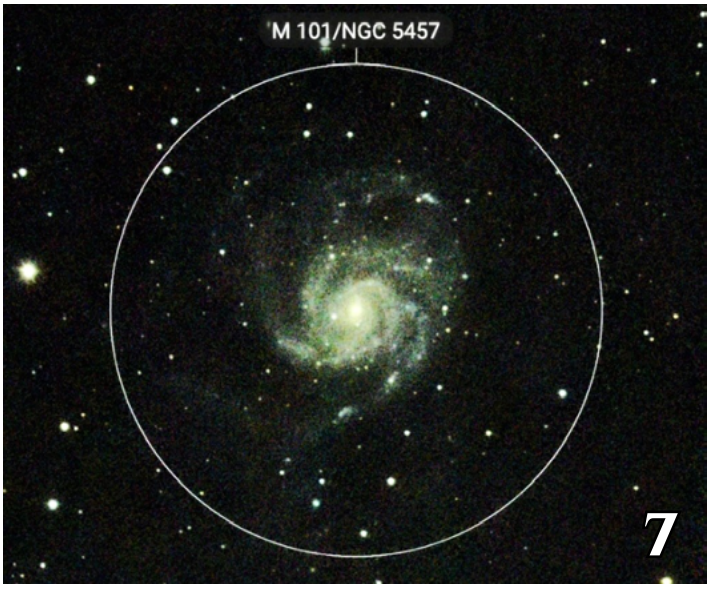
*Images courtesy of the author.*

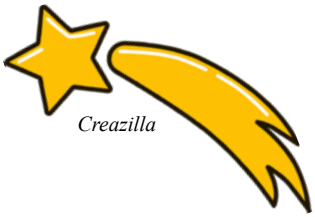





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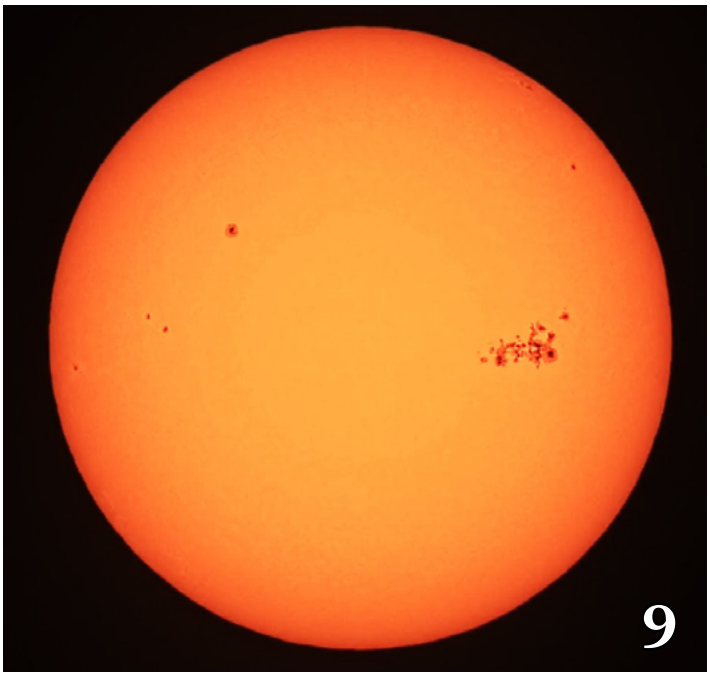
*Seestar, cont'd from p. 4*



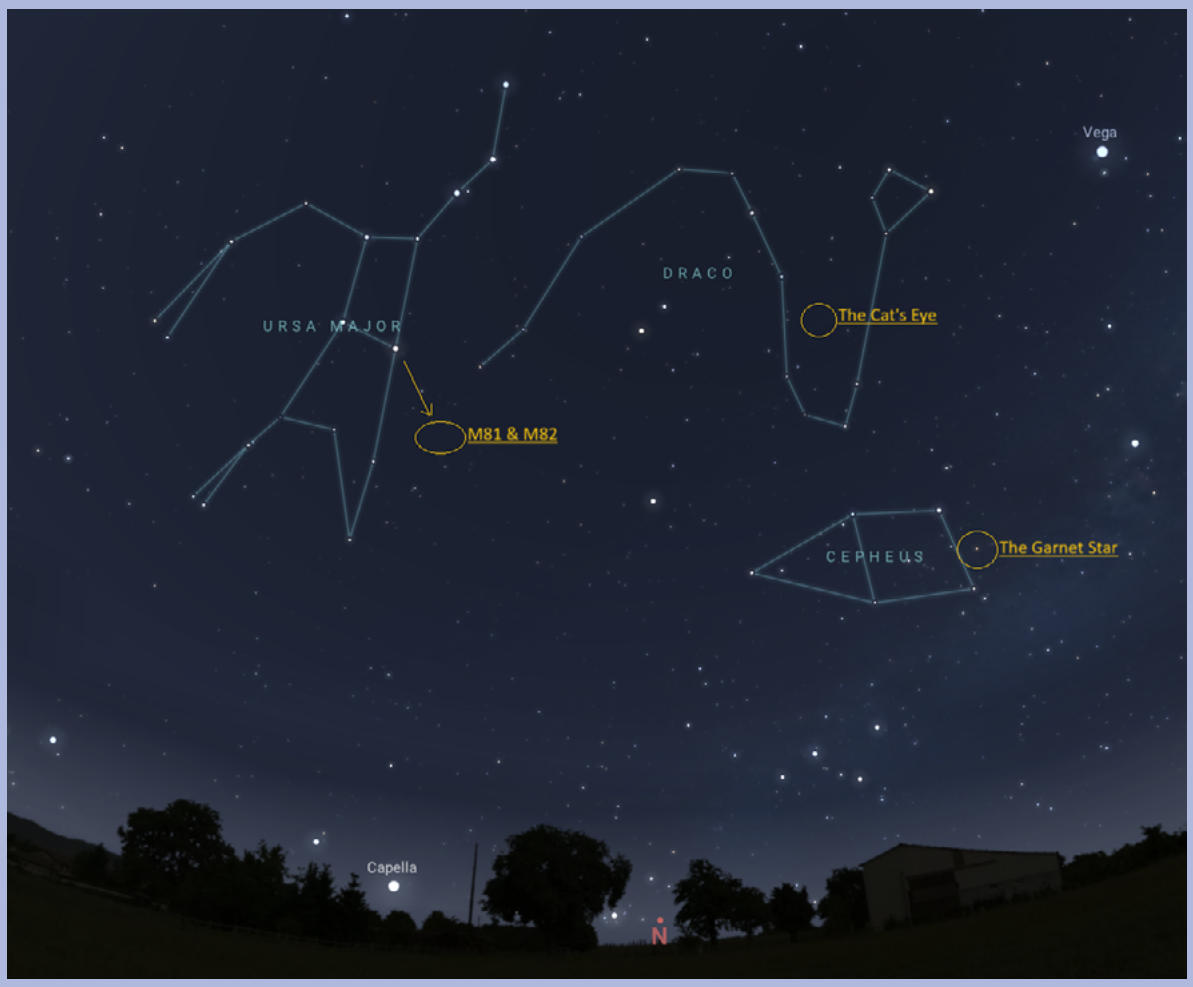
Mark your calendars for Saturday, September 14, 2024, the next International Observe the Moon Night. Join hundreds of thousands of people from all over the world in learning about lunar science and exploration, taking part in celestial observations, and honoring cultural and personal connections to the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

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

# CONSTANT COMPANIONS: CIRCUMPOLAR CONSTELLATIONS, PART III

**by Kat Troche**

In our final installment of the stars around the North Star, we look ahead to the summer months, where depending on your latitude, the items in these circumpolar constellations are nice and high. Today, we'll discuss **Cepheus**, **Draco**, and **Ursa Major**. These objects can all be spotted with a medium to large-sized telescope under dark skies.




*From left to right: Ursa Major, Draco, and Cepheus. Credit: Stellarium Web.*

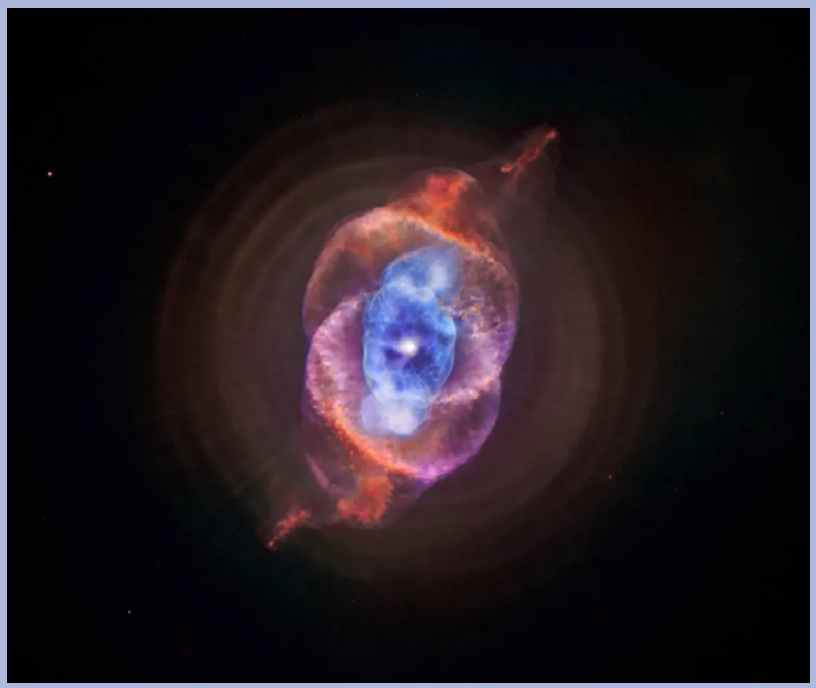
- **Herschel's Garnet Star:** Mu Cephei is a deep-red hypergiant known as the Garnet Star, or Erakis. While the star is not part of the constellation pattern, it sits within the constellation boundary of Cepheus, and is more than 1,000 times the size of our sun. Like its neighbor Delta Cephei, this star is variable, but is not a reliable Cepheid variable. Rather, its brightness can vary anywhere between 3.4 to 5.1 in visible magnitude, over the course of two to twelve years.

***cont'd on p. 7***

*Circumpolar, cont'd from p. 6*

*Herschel's Garnet Star. Credit: Wikimedia Commons.*

- **The Cat's Eye Nebula:** Labeled a planetary nebula, there are no planets to be found at the center of this object. Observations taken with NASA's Chandra X-ray Observatory and Hubble Space Telescopes give astronomers a better understanding of this complex, potential binary star, and how its core ejected enough mass to produce the rings of dust. When searching for this object, look toward the "belly" of Draco with a medium-sized telescope.



*This composite of data from NASA's Chandra X-ray Observatory and Hubble Space Telescope gives astronomers a new look for NGC 6543, better known as the Cat's Eye nebula. This planetary nebula represents a phase of stellar evolution that our sun may well experience several billion years from now. Credit: X-ray: NASA/CXC/SAO; Optical: NASA/STScI.*

***cont'd on p. 8***

***Circumpolar, cont'd from p. 7***

- **Bode's Galaxy and the Cigar Galaxy:** Using the arrow on the star map, look diagonal from the star Dubhe in Ursa Major. There you will find Bode's Galaxy (Messier 81) and the Cigar Galaxy (Messier 82). Sometimes referred to as Bode's Nebula, these two galaxies can be spotted with a small- to medium-sized telescope. Bode's Galaxy is a classic spiral shape, similar to our own Milky Way galaxy and our neighbor, Andromeda. The Cigar Galaxy, however, is known as a starburst galaxy type, known to have a high star formation rate and incredible shapes. This image composite from 2006 combines the power of three great observatories: the Hubble Space Telescope imaged hydrogen in orange, and visible light in yellow-green; Chandra X-Ray Observatory portrayed X-ray in blue; and the Spitzer Space Telescope captured infrared light in red.

*This stunning Hubble image was assembled using observations in visible and infrared light. The galaxy's spiral arms, which wind all the way down into its nucleus, are made up of young, bluish, hot stars formed in the past few million years. Credit: NASA, ESA and the Hubble Heritage Team (STScI/AURA).*

***cont'd on p. 9***


*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 10:00, Clark Planetarium will host a star party and fun activities for the kids!

**Dates:** June 7, July 5, and August 24, weather permitting.
**Location:** Wheeler Farm
6351 South 900 East Murray, UT 84121
**Cost:** Free, but you must reserve your tickets here.

***Circumpolar, cont'd from p. 7***

*The Cigar Galaxy. Credit: NASA, ESA, CXC, and JPL-Caltech.*

*Image of Herschel's Garnet Star courtesy of Wikimedia Commons. All other 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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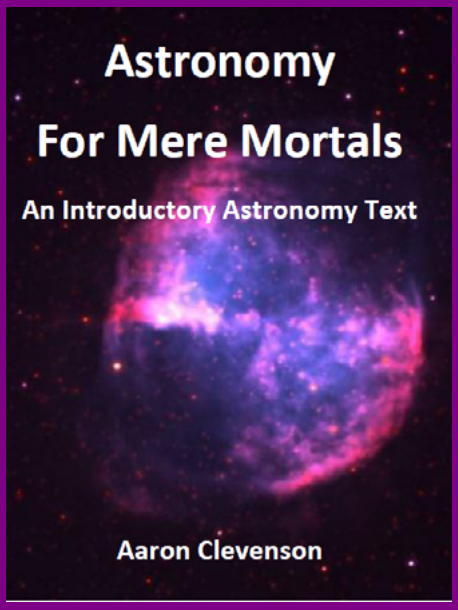
## Hey, Astronomy Hero!
## What's Your Origin Story?

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 at bschenkdarr@gmail.com!




*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*

## ATTENTION LIBRARY TELESCOPE COORDINATORS!

*iStock and Creazilla*

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!

CACHE VALLEY ASTRONOMICAL SOCIETY

Our Website: CVAS-UTAHSKIES.ORG

## EXECUTIVE COMMITTEE

- President: Dell Vance; avteam.dell@gmail.com
- Vice President: Dale Hooper; dchooper5@gmail.com
- Secretary-Treasurer: Bonnie Schenk-Darrington; bschenkdarr@gmail.com
- 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

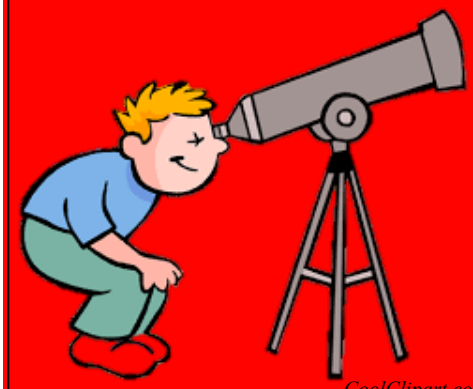
ClipartMax

## USU Observatory Update

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


Classroom Clipart

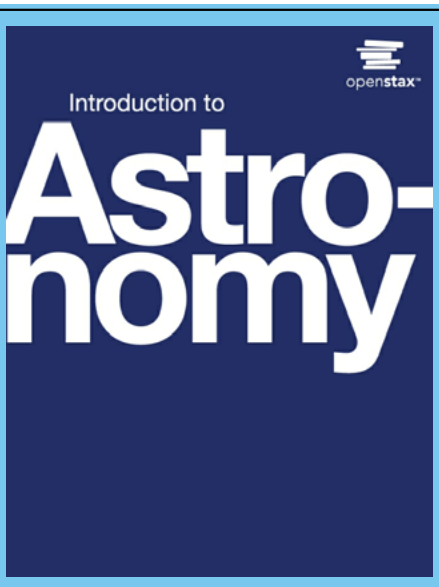
**You can see CVAS events on the NASA Night Sky Network calendar at https://nightsky.jpl.nasa.gov/clubs-and-events.cfm. If you don't yet have access to the NSN website, please let a member of the Executive Committee know! We can add you to the roster and help you create a login and password.**



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.




## New 2nd Edition of Free Astronomy 101 Textbook Now Available!

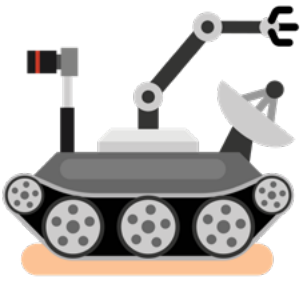
In an effort to democratize knowledge, the OpenStax project produces free digital and inexpensive hard-copy college-level textbooks written by professionals in many fields. You do not have to be a college student to request a copy. You can read more about the new astronomy textbook here. And you can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

# UPCOMING ASTRONOMY EVENTS AND ANNIVERSARIES

**by Bonnie Schenk-Darrington**

*Shutterstock*

- June 1: Kip Thorne born in 1940. Thorne, a native of Logan, Utah, and graduate of Utah State University, won the Nobel Prize in 2017 for his work on the Laser Interferometer Gravitational-Wave Observatory (LIGO) with two colleagues. A street in Logan is named after him. You can read all about it here.
- June 2: *Surveyor 1* landed on the moon in 1966.
- June 3: Ed White became the first American to walk in space in 1965.
- June 2: Conjunction of the moon and Mars.
- June 4: The first reliable record of a total solar eclipse was recorded in 780 BCE in China.
- June 4: Conjunction of Jupiter and Mercury.
- June 6: New moon.
- June 6: Mikhail Lomonosov discovered Venus's atmosphere in 1761.
- June 6: Godefroy Wendelin was born in 1580. He was a Roman Catholic priest who observed the moons of Jupiter, endeavored to calculate the distance between Earth and the moon, and wrote extensively on mathematics and astronomy. The moon crater Vendelinus is named after him.
- June 8: Giovanni Cassini was born in 1625. He was an astronomer, expert in hydraulics, and engineer. He helped found the Paris Observatory under King Louis XIV. He studied the parallax with colleague Jean Richter, was the first to observe four of Saturn's moons, and was the first person to successfully measure longitude on Earth.
- June 10: Last contact with Mars rover *Opportunity* in 2018.
- June 11: Google Earth released in 2001.



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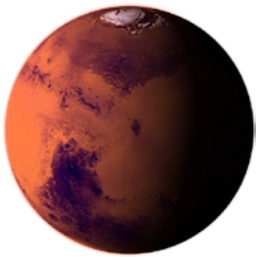

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- June 13: Lyudmila Chernykh was born in 1935 in Russia, Soviet Union. She had a talent for discovering minor planets, such as 2127 Tanya and 2212 Hephaistos.
- June 20: Summer solstice. 2024's solstice will be the earliest summer solstice since 1796. You can read all about it here.
- June 21: Full moon.
- June 22: The Boötid meteor shower peaks.
- June 22: Royal Greenwich Observatory founded by England's King Charles II in 1675.
- June 24: Carolyn S. Shoemaker was born in 1929. She was a co-discoverer of Comet Shoemaker-Levy 9.
- June 24: William Huggins made the first photographic spectrum of a comet (1181 III) in 1881.
- June 26: Discovery of Saturn's moons Surtur, Jarnsaxa, Greip, and Loge in 2006.
- June 26: Charles Messier born in 1730. He published a catalogue of nebulae and star clusters.
- June 27: Moon occults Saturn.
- June 28: Discovery of Pluto's moon Kerberos in 2011.
- June 28: Moon occults Neptune.
- June 29: Saturn begins retrograde motion.

*Vecteezy*

- June 30: International Asteroid Day. This holiday was declared by the United Nations, and occurs on the anniversary of the Tunguska event in 1908, in which an asteroid struck Siberia, leveling over 800 square miles of Siberian forest. The holiday raises awareness about protecting Earth from asteroid threats.

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# 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.

_____

_____

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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:_____

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Bring this form to the meeting or contact **Bonnie Schenk-Darrington, Secretary/Treasurer** at bschenkdarr@gmail.com.