

## PRESIDENT'S CORNER

by Dell Vance



*Ann-Maree Vance*

May has been an interesting month. Hopefully, none of you have been battling floodwaters. We have had some great observing nights. I was able to get some images of the Witch's Broom, C34, in the constellation Cygnus the Swan. I have imaged this before with my 11-inch SCT, but the field of view was a bit narrow. This time I used my 100mm refractor. It gave a much better image of C34. One of the things I enjoy about our hobby is that you can vary your equipment and get another perspective of the same object. It allows me to try lots of methods and equipment.

Our social event on June 9 is changing our location. The flooding and the logistics of getting hot pizza up Blacksmith Fork Canyon was too much of a challenge for us. Instead, we are planning to meet at Willow Park, on the south end, near the entrance to Zootah (419 W. 700 S.). After dinner, we'll scout out a good place for a star party. The social will start at 6:30 p.m.,

*cont'd on p. 2*



*FAV/PNG*

### STAR PARTY SEASON IS HERE!

#### Annual Summer Social

- June 9: Meet at Willow Park at 6:30 p.m., on the south end, near the entrance to Zootah (419 W. 700 S.). Look for more details via email as the date gets closer.

#### Thank You

... for all your work on STEM events this past fall and winter!

Check your email in the near future for a list of upcoming star and solar parties!

Keep up to date by visiting our website:





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

as originally planned. We hope to see you there.

We appreciate all your efforts to support the club activities. We have some solar parties and star parties later this summer. The newsletter articles, Facebook items, and Groups.io items are always very welcome. All these help us to inspire each other to get out there and enjoy our hobby. We can also include our friends and families in the activities. I know several of us are

having small groups over to do some observing. Some are going the extra mile to help small groups with private star parties at youth camps or distant locations.

Thanks again for all your support.

Clear Skies,  
 Dell Vance

*Image courtesy of the author.*

## **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!

# BOOK REVIEW OF NORTON'S STAR ATLAS

by Blaine Dickey

A good star atlas is a prized possession. I have had several during my lifetime, and at the present time I own at least 13 different star atlases. Each one is unique but all have their advantages and disadvantages. There is probably no perfect star atlas, but some come pretty close.

The first complete star atlas that I owned was named *Norton's Star Atlas and Telescope Handbook*, purchased from Edmund Scientific around 1964, when I was about 15 years old. Having built my own telescope, a 6-inch reflector telescope for which I ground the mirror, I realized that I needed a good star atlas to use with my new scope. Norton's star atlas was the one I chose (*figure 1*).

As you can see, this atlas has been used extensively and is in pretty bad shape. The cover is hardbound and the star chart pages are sewn together in such a way that the pages lay flat when the star charts are opened. This is a really nice feature that you don't see often

in atlases or books published today. This atlas has 91 pages and is a generous size of 8 ½ x 11 inches. The index is located near the front of the book, followed by several tables of interesting data that may have been useful back when the book was published. There is a nice glossary of terms, followed by a section on variable stars, nebulae, and many other astronomical terms.

Near the center of the atlas is a large, two-page image of the moon with 300 named craters labeled by number and 26 lunar features labeled by letter. Following this is a section on the planets, meteors and comets, eclipses, occultations, aurorae, hints for observing, and care of your telescope (*figure 2*).

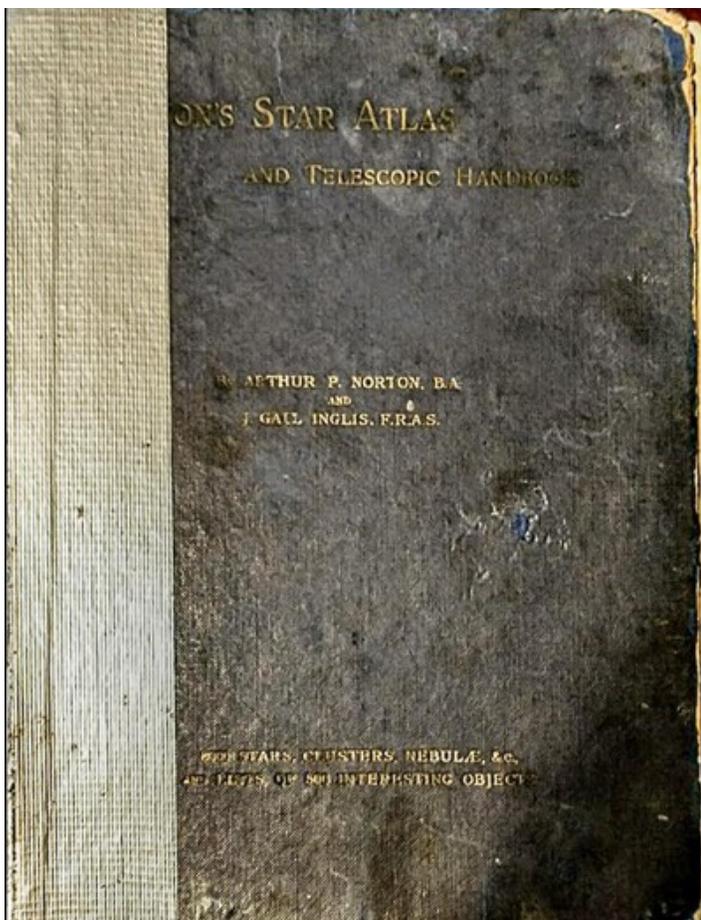


Figure 1

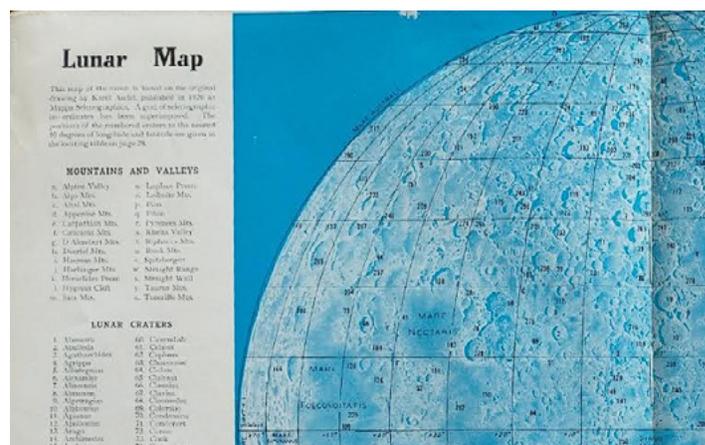
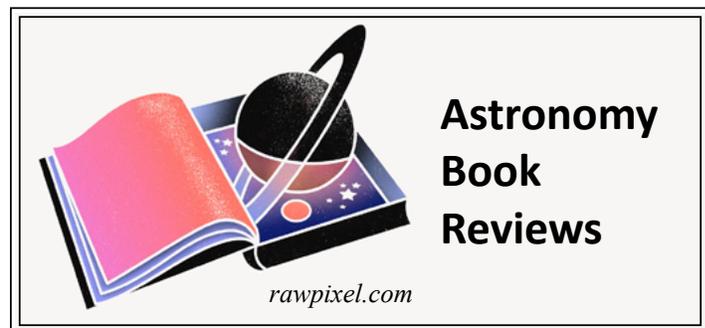


Figure 2

The final section shows 16 maps, two maps per page. These maps were drawn by the author and are some of the best examples of how the stars appear to the unaided eye along with the Milky Way, which is shown in light green (*figure 3*).

The labels are somewhat different than what is used in modern star atlases, especially the deep sky objects.



cont'd on p. 4

Book Review, cont'd from p. 3

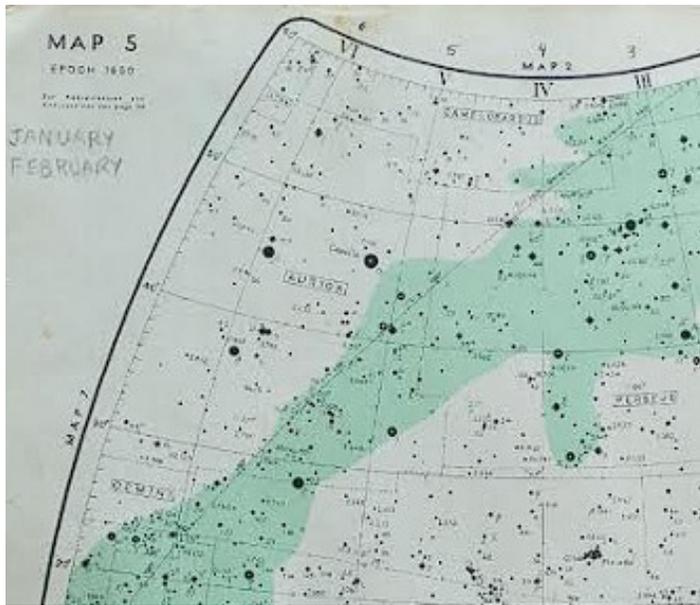


Figure 3

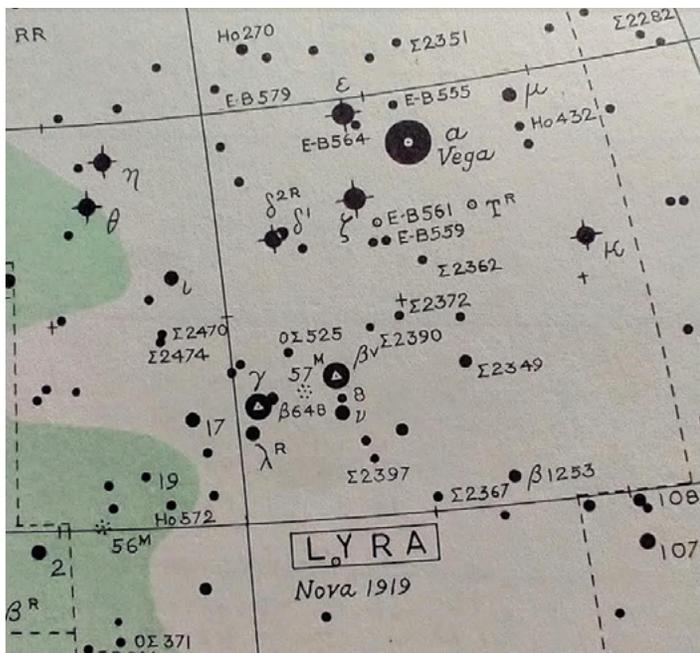


Figure 4

The page showing of the constellation Lyra is a good example. You will notice that M57 is shown with a small M above the number. Another difference is that all deep sky objects are drawn with seven dots, so you can't tell the difference between galaxies, planetary nebula, or star clusters just by looking at the maps. That is okay because all the star charts are accompanied with tables that explain what the object is (figure 4).

Each set of tables starts with double stars: their

**INTERESTING OBJECTS. MAPS 5 & 6.**  
(R.A. II. Hrs. to VI. Hrs. Dec. 60° N. to 60° S.)

**Double Stars.**

		EPOCH 1950.						Notes
R.A.	Dec.	Mag.	P.d.	Dist.	Year	Year		
59	Andromeda	2° 27' 8"	+35° 48'	6.7, 7.2	35'	1876	1923	Relatively fixed.
30	Antaris	2 34.1	+24 26	6.1, 7.1	274'	387	1930	White and blue. Relatively fixed.
ε	"	2 46.5	+17 15	4.9, 8.4	119'	37.2	1928	There is a 10.9 mag. star at 110', d. 25" (1915).
γ	"	2 56.4	+21 8	5.0, 6.4	205'	1.5	1926	Test for 3 inch telescope.
57	"	3 2.0	+25 4	6.6, 6.6	86'	2.2	1929	Triples.
ω	Auriga	4 55.8	+27 49	5.0, 8.0	351'	8.8	1925	P.d. very slowly increasing.
14	"	5 12.2	+32 36	5.0, 7.2	225'	14.5	1922	11 mag. star at 11" distance.
θ	"	5 56.3	+37 13	2.7, 7.9	332'	0.8	1924	Test for 4-inch telescope.
γ	Cass	5 2.6	-35 33	4.7, 8.5	310'	0.9	1926	...
1	Camelopard	4 28.1	+53 48	5.1, 6.2	308'	10.2	1924	Relatively fixed.
65	Cass	2 10.2	-9 38	5.0, 7.8	239'	16.3	1926	Yellow and blue. Relatively fixed. r.p.m.
γ	"	2 40.7	+3 2	3.7, 6.2	293'	3.0	1925	3.7 mag. star yellowish. Little relative move- [uncor.]
h3521	Meridani	2 41.4	-40 44	7.0, 7.1	43'	2.0	1925	...
θ	"	2 56.4	-40 30	3.4, 4.4	87'	8.2	1924	Very slow increase of P.d.
δ	"	3 0.2	-7 53	5.2, 9.2	84'	0.9	1925	Little change.
h3556	"	3 10.7	-44 37	5.2, 9.5	208'	3.1	1925	The 5.9 star is a close double, 0" 5 (1926).
γ, δ16	"	3 16.6	-37 47	4.9, 8.4	202'	7.8	1916	P.d. slowly increasing.
32	"	3 21.8	-3 6	4.0, 6.0	247'	0.0	1925	Topaz and green. Fine contrast.
39	"	4 12.0	-10 23	6.0, 8.5	148'	6.3	1922	Little change.
55	"	4 41.2	-8 53	6.2, 6.7	317'	0.3	1923	Relatively fixed.
ι	Leporis	5 10.0	-11 55	4.0, 10.5	335'	10.5	1928	Relatively fixed.
κ	"	5 10.9	-13 0	5.0, 7.0	260'	2.8	1926	Yellowish and bluish. Relatively fixed.
ρ	"	0 26.1	-20 48	3.0, 8.6	213'	2.5	1916	P.d. increasing.

Figure 5

**INTERESTING OBJECTS. MAPS 5 & 6 - Continued.**  
(R.A. II. Hrs. to VI. Hrs. Dec. 60° N. to 60° S.)

**Variable Stars.**

		EPOCH 1950.						Notes
R.A.	Dec.	Var. of mag.	Spectrum	Period	Year	Year		
ι	Auriga	4° 10' 4"	+43° 41'	3.3-4.1	F5 p	27.14 yrs.	Spectroscopic Biazey.	
α	Ceti	9 16.8	-3 12	1.7-9.6	Me	331 days	Mira. Long period variable.*	
R	Leporis	4 37.3	-14 53	6.0-10.4	N	400 "	Mira's "Crimson Star."	
ε	Orionis	5 52.5	+7 24	0.6-1.1	M1	...	Bistegues. Irregular variable.†	
U	"	5 55.9	+20 11	5.4-12.3	Me	374 days	Long period variable.	
ρ	Persel	3 2.0	+35 39	3.3-4.1	M2	...	Irregular variable.	
β	"	3 4.2	+40 46	2.3-3.5	B8	2-87 days	Algal. The typical Algalid.‡	
λ	Tauri	3 57.8	+19 30	3.3-4.9	B3	3.9 "	Algal eclipsing type.	
R	Trianguli	2 24.0	+34 2	9.8-12.0	Me	270 "	Long period variable.	

**Nebulae and Clusters. (Maps 5 and 6) (Excluded Nov. are those of the N.O.C.)**

1913, M38, Auriga,	5° 25' 3"	+35° 45'	A striking, loose, euciform cluster, in a glorious neighbourhood.
1920, M56, "	5° 33' 0"	+34° 7'	An open cluster of stars of mag. 8-14, regularly arranged. 2" fo Auriga.
2099, M37, "	5° 49' 0"	+32° 33'	Fine open cluster. Ruddy 9th magnitude star near the centre.
1068, M77, Ceti,	2° 40' 1"	-0° 15'	Small, round, faintish nebula, centrally condensed. 1' f & slightly S.
1974, M42, Orionis,	5° 39' 5"	-5° 25'	The Great Nebula in Orion, visible to the naked eye as θ Orionis. A greenish, irregular, fan-shaped mass, best seen with a low power. With higher powers, the bright "Horsehead" region shows a

Figure 6

names, position, magnitude, and separation, with some notes as to how they look. Some of the colors may be a little exaggerated but they are still useful. It is with these charts that I first found M57, double stars, and first-magnitude stars (figure 5).

The facing page lists variable stars and deep-sky objects, with the more common names for the Messier objects but some unusual names for the many other types of objects. The descriptions of the objects tell you what you are looking at and give pretty good descriptions (figure 6).

Unfortunately, this old star atlas is no longer published but has been replaced by a very similar one—but with much updated material. It is called *Norton's 2000*. Star atlases will open new vistas for you and also help you find and observe many objects that you would never have found on your own.

Images courtesy of the author.

# SUMMER FUN WITH THE OGDEN ASTRONOMICAL SOCIETY

by Bonnie Schenk-Darrington

Our friends, the Ogden Astronomical Society, are hosting several summer and fall events you might like to participate in.

## Solar/Star Parties at Antelope Island State Park

Open to the Public

Enjoy an evening of sun- and stargazing at beautiful Antelope Island State Park. The OAS will be on hand before sunset to help you view the sun through telescopes with solar filters. After dark, they will help you view the stars and galaxies. This is a public, come-and-go-as-you-wish event.

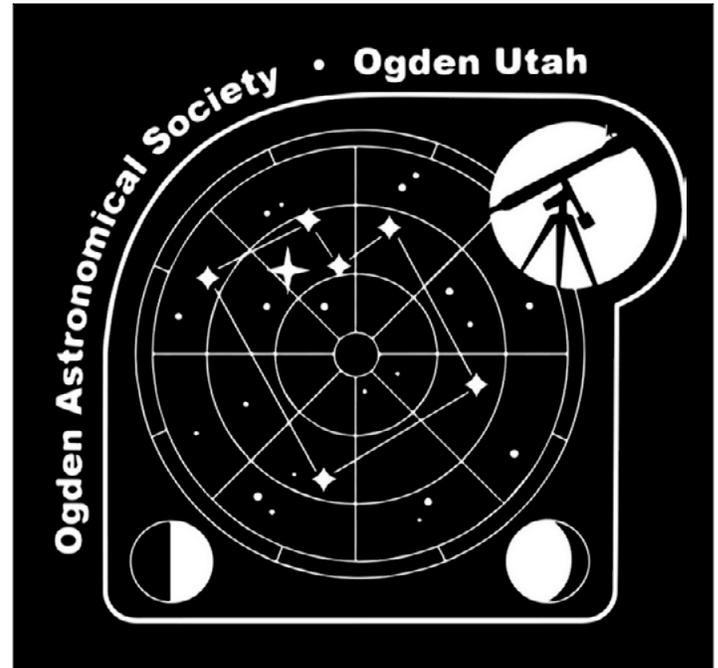
Regular park entry fees do apply, but there is no charge for the solar/star parties. For more information, visit the [AISP events page](#). Contact [tackley@utah.gov](mailto:tackley@utah.gov) with any questions.

- June 24: 7:00pm White Rock Bay Trailhead
- August 12: 7:00pm White Rock Bay Trailhead
- September 9: 6:00pm White Rock Bay Trailhead
- October 21: 5:00pm White Rock Bay Trailhead

## Campouts

For Club Members Only

If you enjoy combining astronomy with camping, you might want to consider joining the OAS so you can participate in these activities. For more information, please visit the [OAS events page](#).



OAS

- July 14–17  
Monte Cristo Campground  
Huntsville, UT-39, Huntsville, UT 84317
- August 18–20  
Monte Cristo Campground  
Huntsville, UT-39, Huntsville, UT 84317
- October 6–8  
Curlew Campground  
Malad City, 22500 West, Malad City, ID 83252



## EXECUTIVE COMMITTEE

- President: Dell Vance; [avteam.dell@gmail.com](mailto:avteam.dell@gmail.com)
- Vice President: Dale Hooper; [dchooper5@gmail.com](mailto:dchooper5@gmail.com)
- Secretary-Treasurer: Bonnie Schenk-Darrington; [bschenkdarr@gmail.com](mailto:bschenkdarr@gmail.com)
- Night Sky Network Coordinator: Dell Vance; [avteam.dell@gmail.com](mailto:avteam.dell@gmail.com)
- Public Relations: Bruce Horrocks; [bruceh@gembuildings.com](http://bruceh@gembuildings.com)
- Webmaster-Librarian: Tom Westre; [twestre45@aol.com](mailto:twestre45@aol.com)

# ASTROPHOTOGRAPHY GALLERY

## Recent Images by Club Members



### Dale Hooper

*Left:* Messier 101, in Ursa Major. *Bottom left:* NGC 4565 in Coma Berenices.

Recently, I've been experimenting with Live stacking, using my MallinCam DS10CTec and SharpCap Pro. Live stacking consists of combining many short exposures into one composite image, usually under software control.

For me, I've found that SharpCap Pro is easier to work with than the MallinCamSky software that came with my camera.

The image of M101 consists of 180, 15-second frames (45 minutes). The image of NGC 4565 consists of 100, 15-second frames (25 minutes).

I wanted to capture a few more frames for the NGC 4565 image but clouds had other thoughts.

Both images were taken with a 14-inch Celestron Edge HD focally reduced to F7.7. I still have a lot to learn, but I've been happy with the initial results.



# ASTROPHOTOGRAPHY GALLERY

## Recent Images by Club Members

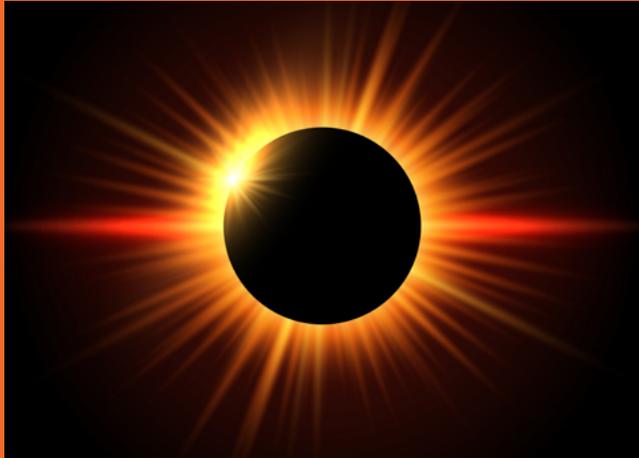


**Dean L.**

*Left:* Whirlpool Galaxy (M51). This was taken with my 8-inch Newtonian. It was a fun image to photograph but I wish I were able to get a sharper view of the galaxy.

*Bottom left and bottom right:* The moon, taken with a 10-inch Vixen Maksutov telescope and a 685nm infrared filter.

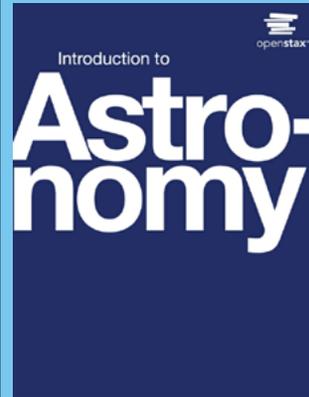




## Eclipse live streams available online!

Would you like to view live streams of solar eclipses? Bookmark [this link](#) so you can view eclipses in real time!

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



Amazon Kindle

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](#).

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



pngset

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

## Your Image Could Be in Cache Valley Clear Skies Next Month!

We all learn when you share your astrophotography with the club!

Send your images to [bschenkdarr@gmail.com](mailto:bschenkdarr@gmail.com)

for publication!

PNGEgg





*Clipart.World and Cliparts Zone*

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](#).

### Free Online Course: Introduction to Amateur Astronomy



*Clipart Library*

Kalamazoo Astronomical Society (in Michigan) hosted a free introductory astronomy class online at the beginning of 2022.

The class is now over but CVAS has been given special permission to post links to the YouTube videos of the lectures! So, if you'd like to brush up on your introductory astronomy, here are links to the lessons!

KAS also has a gift shop full of cool stuff and offers 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: The Art of Astrophotography](#)

# UPCOMING ASTRONOMY EVENTS AND ANNIVERSARIES

by Bonnie Schenk-Darrington

- 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 3: Full moon.
- June 3: Venus at dichotomy. It will look like a half-moon and will be shining brightly at magnitude -4.3.
- June 4: The first reliable record of a total solar eclipse was recorded in 780 BCE in China.
- June 5: Mercury will reach its highest point in the sky, but will still be difficult to observe, since it will be only 10 degrees above the horizon at sunrise. Even so, it will be shining brightly at magnitude 0.4.
- June 6: Moon at perigee; it will look larger than usual because it will be at the closest point in its orbit to Earth.
- 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 Richer, was the first to observe four of Saturn's moons, and was the first person to success-



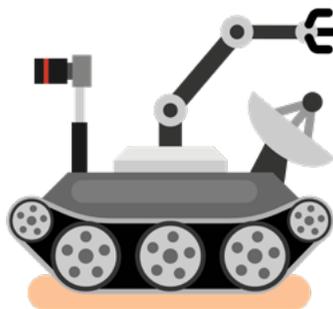
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fully measure longitude on Earth.

- June 9: Conjunction of the moon and Saturn.
- June 10: Last contact with Mars rover *Opportunity* in 2018.
- June 11: Google Earth released in 2001.
- June 14: Conjunction of the moon and Jupiter.
- June 14: Charles Messier discovered Lexell's Comet (D/1770 L1) in 1770.
- June 17: New moon.
- June 21: Summer solstice occurs at 8:54 a.m. MDT.
- June 22: Moon at apogee, its farthest point from Earth in its orbit. It will look smaller than usual.
- June 22: [Royal Greenwich Observatory](#) founded by England's King Charles II in 1675.



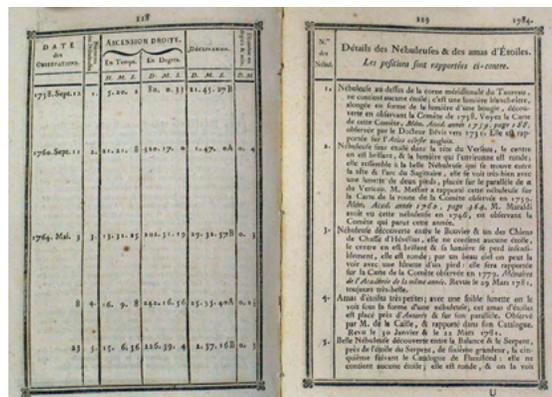
Pixabay



VectorPortal

- 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: Bootid meteor shower peaks.
- June 28: Discovery of Pluto's moon Kerberos in 2011.

- June 30: Neptune commences retrograde motion.
- 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.



Wikimedia Commons



Clark Planetarium

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 16, 23, and 30, 2023, weather permitting.

**Location:** Wheeler Farm  
6351 South 900 East Murray, UT 84121

**Cost:** Free, but you must reserve your tickets [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.

## A LITTLE ASTRONOMY HUMOR



Damon Adams  
@ThatDamonGuy

Imagine if people knocked on your door to talk about science instead of religion. "Hi, we'd just like a quick chat about the possibility of life in the atmosphere of Venus, and thought you might be interested in hearing about phosphine"?

17:59 · 20/9/20 · Twitter for iPhone



# 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](http://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](mailto:bschenkdarr@gmail.com).