

PRESIDENT'S CORNER

by Bruce Horrocks

It seems like July just flew by this year and so here we are with August starting and summer winding down. It will still be hot and dry for the next month so let's keep our fingers crossed that we finish the season with no wildfires filling the skies with smoke. It seems like that happens every year and it is not the best for the forest, or for us and our lungs.

I want to thank all those who came to our summer social. It was fun and we really enjoyed seeing you there! We were glad to see some new faces, as well as some that we haven't seen for a while. If you were unable to make it, we hope that we can see you and an upcoming star party or when our club starts our fall meetings in September. At our club social, we had a short presentation about the James Webb Telescope. It is starting to send some very impressive data back to earth and it should continue to do so for many years to come. It has had several strikes from small meteorites, and even though there has been some minor damage, the scope is still working superbly. We will post the PowerPoint presentation and slides on our website for you to look at.

We also recognized Tom Westre for his many years of service to our club, by presenting him and his wife with a couple of new folding chairs. Tom does so much for our club that goes unnoticed much of the time. He arranges for our meetings to be held at the Nibley City Office building. He has for many years now been the voice of the club for the NPR radio spot that is heard each week throughout the state. He has served for many years on the executive committee and



Shannon Horrocks

that is heard each week throughout the state. He has served for many years on the executive committee and has made countless presentations at our club meetings. Thank you, Tom, for all you do! We do appreciate all of you that help with our club, as well, and hope that you will continue to be a support to our club.

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UPCOMING EVENTS

- Summer is winding down. Check your e-mail for updates on upcoming school star parties and STEM nights.
- Our club meetings start up again on September 21. Details forthcoming!

Keep up to date by visiting our website:



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

has made countless presentations at our club meetings. Thank you, Tom, for all you do! We do appreciate all of you that help with our club, as well, and hope that you will continue to be a support to our club.

I have been contacted by a few schools about doing some star party presentations later this fall. We will be sure to keep you posted when we have these dates firmed up. We had a few solar parties for a couple of county libraries last month, and thanks to all those who helped! One factor you have to consider for solar observations is how to stay out of the sun and avoid a sunburn. While the sun is fascinating to look at, I think I prefer looking at the stars on a cool summer night.

This month will bring a few more planets back into the night sky, so get ready to do some looking at Saturn and Jupiter again. Thanks again to all you for your support and enjoy this last summer month and be safe.

Clear Skies,
Bruce Horrocks



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Challenge from Our President

Thank you for all your support with the club.
Please stay involved!

Get ready for school star parties and STEM nights!

Get out there and enjoy some planet-gazing!

EXECUTIVE COMMITTEE



- President: Bruce Horrocks; bruceh@gembuildings.com
- Vice President: James Somers; james.m.somers@aggiemail.edu
- 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

THE EAGLE NEBULA AND THE MILKY WAY

by Dell Vance

The summer evening skies provides a great view of the Milky Way. Looking toward the south, you can easily find the bright star Antares in the constellation Scorpio (the Scorpion). Moving toward the east about 25 degrees, you come to the Teapot asterism. 25 degrees is equal to the distance from your little finger (which you place on the star Antares) and your thumb when you hold your hand at arm's length from you. Your thumb will be on the asterism of the Teapot, which is in the constellation Sagittarius. Between these two points runs the Milky Way.

This portion of the Milky Way contains several nebulae, star clusters, and other great items. With binoculars, you can see thousands of stars. One nebula in this region is the Messier object M16, or the Eagle Nebula. Within the Eagle Nebula are the Pillars of Creation, which were made famous by the Hubble Space Telescope images. With a 10-inch telescope or larger, you can image the Pillars of Creation.

This region of sky is great for nightscape images.



The Eagle Nebula (M16).

You will often see images with the dark and cloudy region of the Milky Way over some prominent landmark. I have often imaged this in our National Parks. My favorite was the Balancing Rock in Arches in the foreground and the Milky Way in the background.

You don't even need a telescope to take nightscape images. A camera that can keep the shutter open 20 to 30 seconds is adequate. It is best to have a tripod to keep the camera steady for that length of time. Give it a try sometime.

Image courtesy of the author.



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TREASURES OF HERCULES

by Blaine Dickey

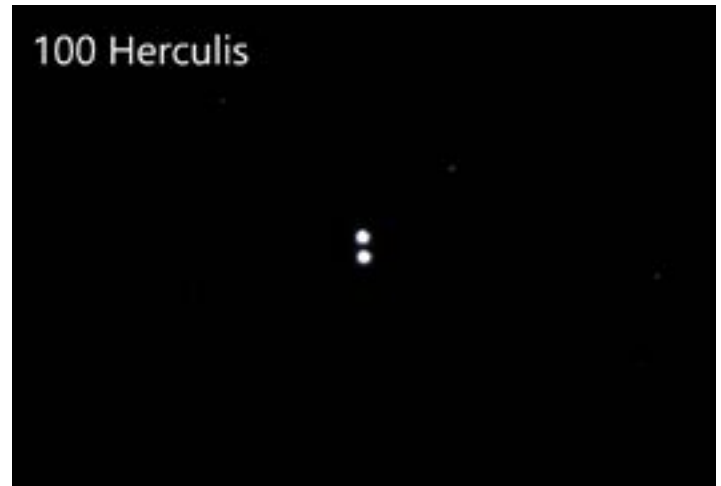
There are some great celestial treasures to be enjoyed in the constellation Hercules, the Hero (named after the son of the god Zeus in Greek mythology).

Mu Herculis is a wide double star with a separation of 35.5 arc seconds, with magnitudes 3.42 and 9.78. The brighter of the pair is a yellow orange subgiant star about twice the diameter of our sun. The dimmer star is actually a close double that orbit each other in 43 years and are separated by about 12 astronomical units (AU). The distance is 27 light-years.



A double star, **Delta Herculis** is also called Sarin, and is an attractive pair. The brighter star is magnitude 3.13. Its dimmer, bluish companion is 8.30 and forms a nice contrast of brightness and color with a separation of 12.7 arc minutes at 75 light-years away.

The next double, **100 Herculis**, is a white pair of stars with identical magnitudes of 5.8 and a separation



of 14 arc minutes. It is about 126 light-years distant.

A bluish planetary nebula, **NGC 6210**, is somewhat irregular in shape, but the attractive bluish color is clearly visible in photographs. Planetary nebulae often look like an out-of-focus star through the eyepiece, sometimes with a small white dwarf visible in their centers.



The constellation Hercules is also home to at least three globular clusters. **Messier 13** is probably the best known globular cluster in the northern hemisphere. Many stars can be resolved in this cluster by an observer with an 8-to 10-inch telescope or larger. With a camera and a telescope, many hundreds of stars are observable. This cluster is estimated to be about 25,000 light-years and is contained in the halo of our Milky Way galaxy.

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Hercules, cont'd from p. 4

Messier 92, a close neighbor of Messier 1,3 is about 1,000 light-years farther away at 26,000 light-years. This globular cluster would be likely be much better known if it were not for its brighter neighbor Messier 13. It is somewhat neglected but is a grand globular in the eyepiece of the telescope. All of images of these globular clusters in this article were taken at the same scale. Messier 92 appears more condensed.



Another little-known globular, **NGC 6229** is much further away at 99,000 light-years. Though it is small, it is worth taking a look at, appearing like a comet in the eyepiece.

A somewhat irregular galaxy, **NGC 6239** is 79 million light-years distant and has a bluish tint.

Finally, here is another image of **C/2017 K2 (Pan-STARRS)**. It is getting brighter and should be visible all summer as it closes in toward the sun at 1.8



astronomical units.

All images courtesy of the author.

GLOBULAR CLUSTERS

by Dell Vance

Around the Milky Way galaxy are about 150 globular clusters. Globular clusters are dense groups of stars, usually containing from 10,000 to millions of stars. They are primarily over 10 billion years old. They are tightly bound gravitationally and have a spherical shape. For our galaxy, they are found in the halo that surrounds the galaxy, and in the bulge. Several globular clusters are included in the Messier Catalogue. A couple of examples include the following:

- M15 in the constellation Pegasus. This cluster contains over 100,000 stars and is believed to be over 12 billion years old. It was discovered in 1746 by Dominique Maraldi. It is visible with binoculars or a telescope. It is positioned just above Enif, the star that is the nose of Pegasus, the flying horse.
- M13 in the constellation Hercules. This cluster contains several hundred thousand stars. It is estimated to be about 11.7 billion years old. It was discovered by Edmond Halley in 1714. It is with-




The globular cluster Messier 15.

in the Hercules Keystone asterism. Look for four bright stars forming a square about a third of the way between Vega and Arcturus. The cluster can be seen visually if the sky is very dark. For a better view, it is best to use binoculars or a telescope.

In small telescopes, globular clusters appear as hazy areas. In larger telescopes, you can differentiate stars in the globular cluster. They are always good targets to find.

Image courtesy of the author.



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!

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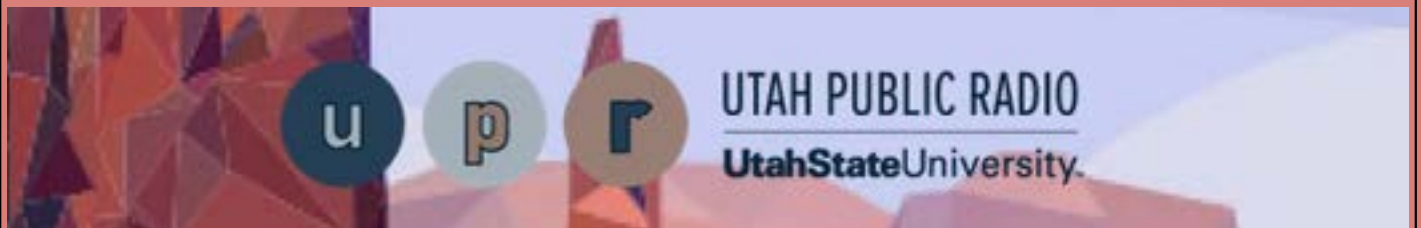
Need a quick astronomy fix?
Tune in to CVAS's astronomy show on Utah Public Radio!

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](#).



UPR USU

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 lessons!

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: The Art of Astrophotography](#)

CVAS SUMMER FUN!



Back row, left to right: Blaine Dickey, Kurt King, Becca L., Mr. L., Paul Yamaguchi, Frank Kenyon, Jean Kenyon, Eldon Darrington, Gabriela Darrington, Dane Darrington, Rob Cook, Dell Vance, Tom Westre, Sylvia Westre. Front row, left to right: Dean L., Bonnie Schenk-Darrington, Bruce Horrocks.



On July 29, CVAS members enjoyed a summer social! We met at the bovery at Heritage Park in Nibley. After a meal of pizza and delicious pot-luck salads and desserts, Bruce gave us a presentation on the James Webb Space Telescope (at left), and we finished up with a star party at Firefly Park.

Photos courtesy of Tom Westre and Bonnie Schenk-Darrington.

CVAS SUMMER FUN!



Club members have participated in many solar parties and star parties this summer! Shown here are highlights of the Nibley Heritage Days Fair on June 18 at Elkhorn Park.

Left: Tom Westre shows a family an image of the sun as they try out his solar scope.

Below left: Bruce Horrocks and Blaine Dickey talk shop under a glowering sky. The weather changed abruptly many times that day.

Below right: Under a friendlier sky, Dell Vance helps kids check out the sun.



Photos courtesy of Bonnie Schenk-Darrington.

REALLY QUITE A LOT OF ASTRONOMY HUMOR

What if they aren't stars at all, but holes poked in the top of the container so we can breathe.



nasa just using 80s school photo background like we ain't gone notice...



There are two kinds of nerds...



"MAY THE FORCE BE--"



"EQUAL TO MASS-TIMES ACCELERATION."



WE BROUGHT IT HOME

It's made of cheese