



## Cache Valley Clear Skies

The Journal of the Cache Valley Astronomical Society



### CVAS Executive Committee

Pres – Bruce Horrocks  
[bruceh@gembuildings.com](mailto:bruceh@gembuildings.com)

Vice Pres- James Somers  
[james.m.somers@aggiemail.edu.usu](mailto:james.m.somers@aggiemail.edu.usu)

Treasurer- Janice Bradshaw  
[lojbrads@yahoo.com](mailto:lojbrads@yahoo.com)

Secretary – Wendell Waters (435) 213-9230  
[wendellw57@comcast.net](mailto:wendellw57@comcast.net)

Night Sky Network Coordinator –  
Garrett Smith – [GarrettGillSmith@gmail.com](mailto:GarrettGillSmith@gmail.com)

Past President – Dell Vance (435) 938-8328  
[avteam.dell@gmail.com](mailto:avteam.dell@gmail.com)

Public Relations – Lyle Johnson -  
[lyledj@aol.com](mailto:lyledj@aol.com)

Webmaster, Librarian – Tom Westre  
[twestre45@aol.com](mailto:twestre45@aol.com)

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Vol. 8      Number 1

September 2020

[www.cvas-utahskies.org](http://www.cvas-utahskies.org)

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### Meeting Announcement

Due to the ongoing covid-19 crisis, there will be no meetings or other events until further notice. We will for sure let you know when we are planning to get together again. Until then, please stay safe and stay healthy.

Clear Skies!

The CVAS Executive Committee

### The President's Corner By Bruce Horrocks – CVAS President

With the kids returning to school and some cooler temperatures it looks like our summer is winding down and fall will soon be here. Fall has always been my favorite time of the year, warm days, cool nights, and no more mosquitos. The past few nights have been clearer with all that smoke in the skies mostly gone and so I went out to look at a few things. I do enjoy looking at the moon and so I thought I would share a few facts about the moon with you all this month.

First, the moon is about 1/4 the diameter of the earth. And by some strange coincidence that puts it about the same size as our sun when you look at them in the sky. The diameter of the moon is 2,160 miles or so. That would be the distance from Boise, Idaho to New York City. The lunar craters you can see have a large range in size and can give you some idea of the distance you are looking at. The crater Tyco is around 60 miles in diameter and is very easily detected by most



Photo by Bruce Horrocks

telescopes. Also of note is that our moon is the fifth largest natural satellite in our solar system.

Second, the mass of the moon is only about 1.2% that of the earth. It would take 81 moons to have the same mass as the earth. That reduction in mass is also what gives you the reduction in gravity allowing you to only have about 17% of the gravity that you feel on earth. I read a book about the astronauts that were on the moon and they said it made everything feel like you were going in slow motion. When you jumped you went higher and slower than what you would on earth, but when you hit the ground it felt just the same as on earth.

Third, we should be grateful for that moon and its contribution to our tidal action and earth's position from the sun. So much of the life in our ocean depends on tidal actions and without the moon it would be only a fourth of what is. Also, without the moon our earth most likely would not be orbiting the sun in the same spot as we are and so life would be very much different. While I do think it would be pretty cool if we had 2 or 3 moons, I am glad we only have one that helps with so many aspects of this life with its gravity and lunar cycles.

Since the moon is such an easy target to look at I hope that you can all get out and enjoy a look at it this month and maybe take someone along with you to enjoy this beautiful satellite that we get to enjoy here on earth. In October this year we will have 2 full moons, one on the 1<sup>st</sup> and the second on the 31<sup>st</sup>. When this happens the second moon is called a "Blue Moon". Kind of creepy it will happen on Halloween night. Hope you are all doing well and have a great fall.

Bruce Horrocks



**Photo by Bruce Horrocks**



**Photo by Bruce Horrocks**

### **CVAS on Utah Public Radio**

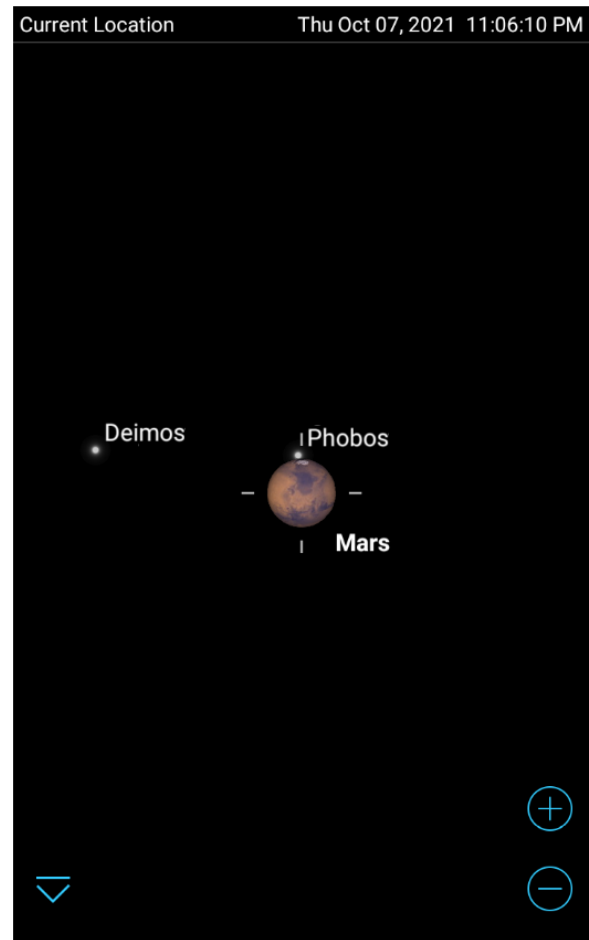
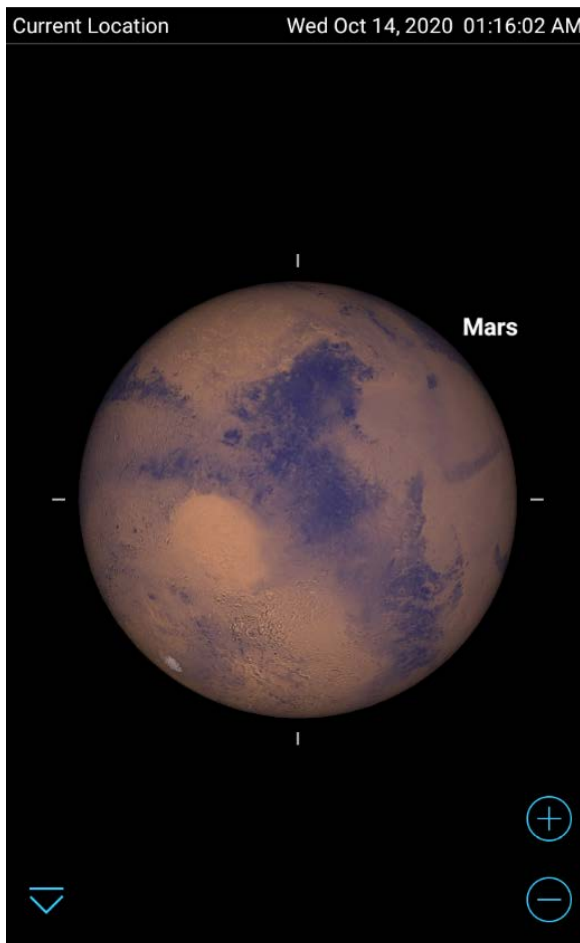
Listen to CVAS on Utah Public Radio each Tuesday at 4:48 pm. Blaine Dickey and Tom Westre are writing weekly astronomy related scripts and recording the program at their station. We are pleased that the folks at UPR have invited us to present a weekly topic on astronomy. You can listen in Logan on 91.5 KUSU-FM, or 89.5 KUSR Logan, with translators 92.1 Brigham City, 89.3 Bear Lake. There are other translators from Soda Springs to St George. You can also listen anywhere on their live stream or download UPR's free app on your smartphone. Check this out at [www.upr.org](http://www.upr.org)

## The opposition of Mars

By Blaine Dickey

In September the planet Mars appears to grow larger and brighter until it reaches opposition on the evening of October 14, 2020. Between now and then and sometime after that is a great time to observe the planet Mars. It will not appear this large and bright for several years to come.

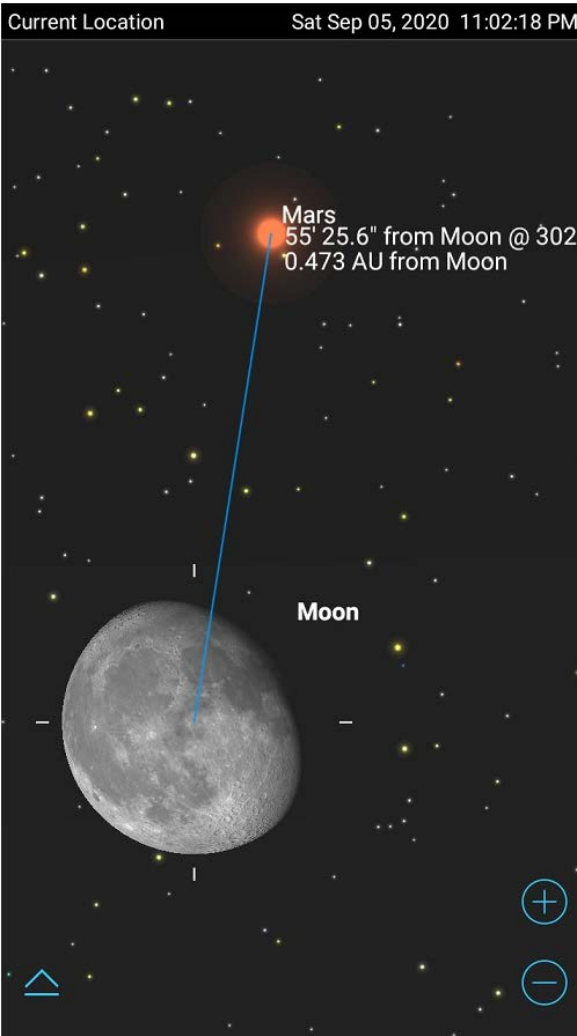
When Mars reaches opposition on the night of October 14 it will appear to be 22.3 arc seconds in diameter at magnitude -2.3 almost as bright as Jupiter. One of the great things about this opposition is that it will also appear high in sky at nearly 54 degrees above the horizon when it transits after midnight making it much easier to see detail on its surface. These two graphics below show relative size of Mars at Opposition, compared to the size at Superior Conjunction.



As you can see this is a great time to observe Mars. Until October the planet is best observed in the early morning hours when it highest in the sky. The reddish hue of Mars and its brightness makes it easy to identify in the constellation Pisces. After opposition in October it will be more convenient to observe Mars in the evening but cloudy weather that we usually get in October makes it more challenging.

When observing, a moderate to high power eyepiece will be helpful in bringing out the detail on the Martian surface. Often people report that using colored filters also increases contrast. Maybe you will be able to spot the ice cap as well.

Finally a nice conjunction will take place on the night of September 5 as the moon rises over the eastern sky here in Cache Valley. At that time the Moon and Mars will be less than 1 degree apart as shown in the graphic below. All graphics for this article are from Sky Safari Pro 6.



## StarNet++ Software By Bruce Horrocks

Occasionally when I take an image I find that there are so many stars in the image that the detail is just a bit lost. There is a free software program out there called StarNet++ that can remove the stars from your image if you want to do that. It is somewhat easy to use and will work on PCs but does require a lot of RAM memory to run. It took me a while to just figure it all out but now I run in directly in my Pixinsite software. Here are a couple of images that have had the stars remove for you to look at. I am not sure how it would work on a galaxy image since I have mostly used it on nebulas. Give it a try if you think you might like it.

Enjoy this special season for Mars and stay well!



## Spotlight on Scorpius, the Scorpion

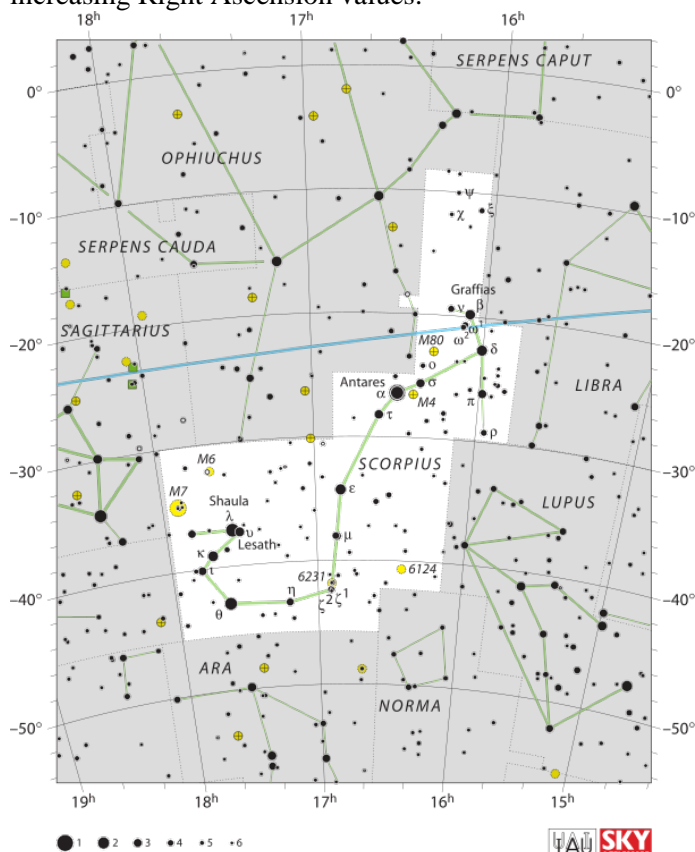
By Dale Hooper

Scorpius is certainly a constellation which really looks like what it represents (that is assuming your southern horizon lets you trace out the stinger). With its position in and near the Milky Way, there are many beautiful objects to be found in this constellation. I was actually surprised when I realized that I hadn't included a spotlight of Scorpius in our newsletter before now. Like Sagittarius it is a shame for us that this constellation is so low in our sky. From the beautiful red supergiant Antares to globular clusters, planetary nebulae, emission nebulae, open clusters and dark nebulae there is much to see.

The name Antares means "rival of Mars" and I confess – a few years ago I mistook it for Mars. Antares is also known as the heart of the Scorpion. This is a huge star! If it was placed in the center of our solar system, its outer atmosphere would lie between the orbits of Mars and Jupiter. Scorpius hold four Messier objects, two are globular clusters (M80 and M4) and the other two are open clusters (M6 and M7).

Objects which rank at least four stars in *The Night Sky Observer's Guide* (Scorpius is in Volume 2) which can be observed with an eight inch scope, have been included. As usual, the table is organized according to increasing Right Ascension values.

Object	R.A.	Dec.
Σ 1998 (Triple Star)	16h04.4m	-11°22'
B Scorpii (Double Star)	16h05.4m	-19°48'
v Scorpii (Double-Double)	16h12.0m	-19°28'
12 Scorpii (Double Star)	16h12.3m	-28°25'
NGC 6072 (Planetary Nebula)	16h16.0m	-36°14'
Messier 80 (Globular Cluster)	16h17.0m	-22°59'
Messier 4 (Globular Cluster)	16h23.6m	-26°32'
NGC 6124 (Open Cluster)	16h25.6m	-40°40'
Antares (Double Star)	16h29.4m	-26°26'
NGC 6153 (Planetary Nebula)	16h31.5m	-40°15'
NGC 6231 (Open Cluster)	16h54.0m	-41°48'
Trumpler 24 (Open Cluster)	16h57.0m	-40°40'
NGC 6259 (Open Cluster)	16h57.0m	-40°40'
Barnard 50 (Dark Nebula)	17h02.9m	-34°24'
Barnard 55 (Dark Nebula)	17h06.6m	-32°00'
Barnard 56 (Dark Nebula)	17h09.1m	-32°06'
NGC 6302 (Planetary Nebula)	17h13.7m	-37°06'
NGC 6337 (Planetary Nebula)	17h22.3m	-38°29'
Messier 6 (Open Cluster)	17h40.1m	-32°13'
Messier 7 (Open Cluster)	17h53.9m	-34°49'



## Special Announcement

The CVAS website is up and operating. I would appreciate any feedback from club members. The website has a Gallery page and club members are invited to email me any images they take with their telescopes. If they include their name, type of telescope and camera that would also be informative. I also have a page for club members to send a picture of their telescopes and/or observatories. I also encourage taking pictures of our meetings, STEM events or star parties for the image gallery. – Tom Westre; Webmaster

## Newsletter Guidelines

It has been suggested by the CVAS Executive Committee that we come up with some guidelines for article submissions for our newsletter.





- We would like all submissions to be sent to Wendell by the 27<sup>th</sup> of each month. Just send him an email with the article as an attachment (wendellw57@comcast.net).
- Please submit your articles as a “Word” document.
- If you have pictures or sky maps that go with your article, please place them in the text where you would like them to be, but also send them as separate attachments in the email.
- Please try to keep them at a reasonable length (500 to 800 words or so).
- Preferred font is Times New Roman
- Perfect spelling and grammar are optional.

Your thoughts and suggestions are always appreciated. After all, this newsletter is for you. Thanks for all of your help in making our newsletter GREAT!! (the editor)

## Upcoming Events and Anniversaries

- Sep 01 - [Edgar Rice Burroughs'](#) 145th Birthday (1875)
- Sep 02 - [Mars Winter Solstice](#)
- Sep 06 - [Moon Occults Mars](#)
- Sep 09 - 45th Anniversary (1975), [Viking 2](#) Launch (Mars Orbiter/Lander)
- Sep 11 - [Neptune At Opposition](#)
- Sep 12 - 850th Anniversary (1170), [Gervase's Observation of Transit of Mars Across Jupiter](#)
- Sep 14 - [John Dobson's](#) 105th Birthday (1915)
- Sep 15 - 55th Anniversary (1965), ["Lost in Space"](#) Debuts on TV
- Sep 18 - 55th Anniversary (1965), 1st Episode of ["I Dream of Jeannie"](#) Airs on TV
- Sep 22 - [Autumnal Equinox](#), [13:31 UT](#)
- Sep 24 - 30th Anniversary (1990), Stuart Wilbur's Discovery of [Great White Spot on Saturn](#)
- Sep 24 - 50th Anniversary (1970), [Luna 16](#) Returns to Earth (1st Unmanned Lunar Sample Return)
- Sep 26 - [International Observe The Moon Night](#)
- Sep 30 - 140th Anniversary (1880), [1st Photo of Orion Nebula](#) Taken by [Henry Draper](#)

## Library Loaner Telescope Program Status

Library	Telescope Donated By	Telescope Placed	Available for Checkout	Library Status
Logan Library	CVAS	6/10/2018	10/15/2018	Loaning out with Holds pending
Logan Library #2	ICON Health & Fitness 	6/18/2019	7/15/2019	Loaning out
Hyrum Library	CVAS	12/11/2018	2/1/2019	Loaning out
Smithfield Library	Occipital, Inc	12/14/2018	4/10/2019	Loaning out
North Logan Library	Utah NASA Space Grant Consortium 	3/4/2019	4/5/2019	Loaning out
Cache County Library (Providence)	INOVAR & CVAS Members	3/1/2019	5/22/2019	Holds on telescope
Lewiston Library	Schreiber Food's 	Last Week of June (Tentative)		Telescope was placed and they are in the process of setting it up.
Richmond Library				Received Telescope
Preston Library	Idaho NASA Space Grant Consortium			Telescope placed.
Mendon Library	Campbell Scientific 	4/8/2019	5/30/2019	Loaning out
Newton Library				Ready for check out

# 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](http://cvas-utahskies.org), and the CVAS Constitution. I agree to abide by the constitution.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Bring this form to the meeting or Mail Application to:

**Janice Bradshaw, Treasurer**  
175 W 700 S  
Wellsville, UT 84339

For any questions contact our Treasurer, Janice Bradshaw at [lojbrads@yahoo.com](mailto:lojbrads@yahoo.com)  
or our Secretary Wendell Waters at [wendellw57@comcast.net](mailto:wendellw57@comcast.net)