



Cache Valley Clear Skies

The Journal of the Cache Valley Astronomical Society



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Vol. 7 Number 3

November 2019

www.cvas-utahskies.org

Meeting Announcement

There will be NO MEETINGS for the months of November and December. Instead, we will be having a Winter Social at Dell Vance's on December 4th. We will send out more information via email.

We also want to thank Tom Westre and Dale Hooper for their presentations at our October meeting.

Hope you all have a safe, clear Holiday Season!!

Upcoming Star Parties and CVAS Events

Nov 4 – STEM Fair River Heights Elementary
Nov 11 – STEM Fair Summit Elementary
Nov 29 – STEM Fair White Pine Elementary

The President's Corner By Bruce Horrocks – CVAS President

As I sit here in my house on this cold night, I must admit I am glad that we didn't have any star parties planned during this cold week. I find the older I get the more I prefer to be in slightly warmer weather when out looking through my telescope. Trying to change eyepieces and turn focus knobs when the temperature is in the single digits just isn't quite what it used to be for me.

A year back or so I contacted Celestron to see just how low of temperatures their telescopes and mounts were designed for. Their response back was that while the telescope alone will be okay with the colder weather, the mounts and hand controllers will start to have problems when temperatures are in the mid 20's degrees. The gears and motors in the mounts will sometime have problems when around 15 degrees. The trick they recommended to me comes from the Celestron users in Canada. They tie a hand warmer or heat pack to the hand controller and wrap an electric blanket around the mount. So, if you like to brave the colder weather and are

having issues with your mounts there are a few ideas you might try.

We would like to thank all of you who supported the star parties this summer. They are very much appreciated and each of the groups I have talked with say they will want us back. I hear many comments on just how smart and knowledgeable the members of the club are in answering questions and providing information about astronomy to those who attend our star parties. We have three STEM (Science, Technology, Engineering, & Math) activities in the month of November. They are at three of the elementary schools in the northern part of the county. We appreciate those of you that can help support and represent our club at these school activities.

I recently read an article talking about the decline in many astronomy clubs around the country. A survey of club members indicated that the majority were made up of older members in the 50+ age category, mainly baby boomers who grew up watching the Apollo missions and the whole development of the NASA and space flights. I see that is also true for our club as well. I am also very pleased to see a renewed interest in space travel thanks to the private sector companies like SpaceX, Blue Origin, Boeing and a few others. I have a few local neighbor kids that like to talk about the future of space travel and also enjoy looking through my telescope.

I hope that each of us will take any opportunity that comes to us to share what we know and help boost the interest of these youth in space and science. Hopefully we can help further and broaden this interest and desire in learning more about our planet and universe. The tools that are available today for amateur astronomers far surpass any that have been in the past and will only get better. But the tool that is most important above all is to have the desire and passion to learn more. Thanks again for all your outreach efforts this summer and fall.

Clear Skies

Double Vision

by Harvey Brown

Galaxies, Nebulae, Open Clusters, Comets, and Double Stars!! These are just some of the different objects that we, as astronomers, try to find in the sky at night. I personally like the Double Stars, or as I call it, "Splitting Doubles".

Retirement has really helped in my enjoyment of searching for Doubles. I have logged over 500 observations since June of this year and about 90% are Double Stars.

I will present only 4 to start out with that I consider good "Showpiece" stars that can be seen practically all year round.

Let me first explain the equipment that I use and how to find information for each double star. Early in the summer, I was able to purchase an Explore Scientific AR 152 6" Refractor. I use the Celestron AVX go-to mount with a power pack from Harbor Freight, which I think is a great power pack (6 hours and the light never went off green). The refractor is equipped with a two speed focuser that helps in fine tuning for the dim stars. Most of my observations have been done with an Explore Scientific 14mm 82° eyepiece and an 8mm 68° Orion Stratus eyepiece. These are the main eyepieces that I use so any Double Stars that are listed have been viewed through one of these and should be able to be seen with an eyepiece equivalent to them. All stars listed should be observable with a 4" telescope.

As for information on how to find and observe the Doubles, I first use the [Star Stellarium Chart](#) Program which is easily downloaded from the web. I also use the [Cartes du Ciel Starchart](#). Next, to find out all the numbers and information on the stars I use [Stelle Doppie](#). Stelle Doppie is a great resource for finding all you information you might want about Double Stars. Once you learn how to navigate it, you can get a lot out of it. And don't worry about signing up, just use it and it will go for a long time before it kicks you off.

Double Star identifications usually include a letter or symbol (preceding a number), which identifies the discoverer of the Double. For instance, the first star $\Sigma 2727$ means that this star was discovered by Friedrich Georg Wilhelm Struve and the number after is in the order that he recorded it. When you look up the stars on Stelle Doppie you will find all sorts of strange letters and numbers listed.

I use three numbers on each star to help find it. First, the HP (Hipparchus) number, and then the SAO (Smithsonian Astrophysical Observatory Star) number and the HD (Henry Draper) number. Most SAO numbers are pre-programmed into the hand controller on the AVX mount and all the stars listed were found this way. I will also give the RA/DEC coordinates, magnitude of each star and the separation, and what I recorded in my log about the Double Star.

We start with a great double in Delphinus that is a great showpiece with both stars very close in magnitude and a good split.

Σ2727 AB γ 2 Gamma 12 Del HIP 102532
SAO 106476 HD 197964

Magnitude Primary: 4.3 Secondary 5.0
Separation 8.9”

RA. 20h 46m 39.47s DEC. +16° 07' 23.4”
Star Name: Al Salib

I recorded: *“This is a beautiful DS – can see the split, both bright – This is the bottom star of Delphinus – a good showpiece DS. Color: Yellow – Yellow This is a physical double.*

Σ2840 AB Cephus HIP 107930
SAO 33819 HD 208095

Magnitude Primary: 5.6 Secondary 6.4
Separation 18”

RA. 21h 52m 01.07s DEC. +55° 47' 48.2”

“A beautiful double – both bright and easy split – In an open field so really stands out- Color: White – White This is a visual double

Σ1694 Camelopardalis HIP 62572
SAO 2102 HD 112028

Magnitude Primary: 5.2 Secondary 5.7
Separation 21.8”

RA. 12h 49m 13.38s DEC. +83° 24' 46.0”

“Nice good Double – both same mag – easy split – good one to show as a physical double – Color: White – White

Σ2280 AB 100 Hercules HIP 88818
SAO 85753 HD 166045
Magnitude Primary: 5.8 Secondary: 5.8
Separation 14.4”
RA. 18h 07m 49.56s DEC. +26° 06' 04.4”

“Another good Double – same magnitude and close but easy split – in an open field so it really stands out – Color: White – White - This is a visual double”

When you type in the number for each of these in Stelle Doppie you use STF in place of the symbol. This is how they know you are looking for Struve. I hope you like these starter stars to look at. I have always enjoyed looking at doubles more than anything and trying to split them. Just remember, it's not your eyes playing tricks on you, it's really “DOUBLE VISION”



Special Announcement

The USU Observatory is having a Public Night on Friday, Nov 1 from 7:30 to 9:30 pm.

The USU Observatory is located on the roof of the Science Engineering Research (SER) building. To reach the Observatory, enter the first floor of the SER building and go to the freight elevator at that floor's northwest corner. Select "Roof" from the elevator's choice of floors.

Parking for the Observatory is available in the surface lots near Utah State University's Caine Performance Hall, which is located at approximately 1090 East 675 North in Logan.

A nice summer comet – C/2018 W2 (Africano)

by Blaine Dickey

A little known but fairly bright comet named C/2018 W2 (Africano) is currently sliding through our evening skies in the constellation Aquarius. This comet was discovered by B.F. Africano on November 27, 2018 as a faint 20th magnitude comet.

If you want to observe it yourselves it will best be seen during the early part of October before moonlight interferes at close to magnitude 9.5. The comet was closest to the sun on September 5, 2019 at a distance of 1.45 Astronomical Units. This comet has an orbital period of nearly 158 years so we will not see it again in our lifetime.

Before it got away I thought I would try to record its motion across the sky. To get a time lapse image I set up my LX200R Telescope in my observatory with my NIKON D5100 DSLR camera attached. Using a program to control the DSLR called NikonBackYard, I set up an imaging sequence. Using my LX200R I typed in the RA and Dec coordinates of the comet from Sky Safari 6 Pro. After the telescope had slewed to the coordinates I had typed in, I took a short 30 second exposure and found the comet nicely placed in my first image. Then I setup the camera to take a sequence of eight 30 second exposures spaced three minutes apart using an ISO setting at 6400.

As each image was recorded I noticed that the comet had moved a short distance from where it was in the previous image.

The image at right was created by stacking all eight images together using DeepSkyStacker Live. This image nicely illustrates the motion of the comet against the background of the sky in a timeframe of about 30 minutes. Comets are fun to follow. You might want to give it a try.

A great website for finding current information about comets is:

<http://www.aerith.net/comet/weekly/current.html>



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.

Observing Images and Notes

By Tom Westre

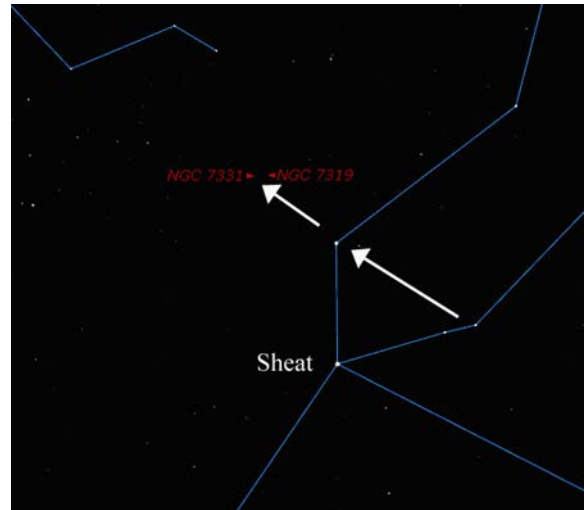
During the month of November the constellation of Pegasus is an easy to locate high in the south. This month I am focusing on two galaxy groups in Pegasus, The Deer Lick Group and Stephen's Quintet.

The Deer Lick Group contains five galaxies. The brightest galaxy is known as NGC 7331 and is bright at magnitude 10.4 even at a distance of 50 million light years.

The other four members are known as NGC 7335 (mag 14.4), NGC 7336, NGC 7337 (mag. 15.2), and NGC 7340 (mag. 14.2). The four smaller galaxies are also known as "the fleas." These fainter galaxies are not connected to NGC 7331. The four smaller galaxies are ten times farther away, so the Deer Lick group is not a true interacting galaxy group.

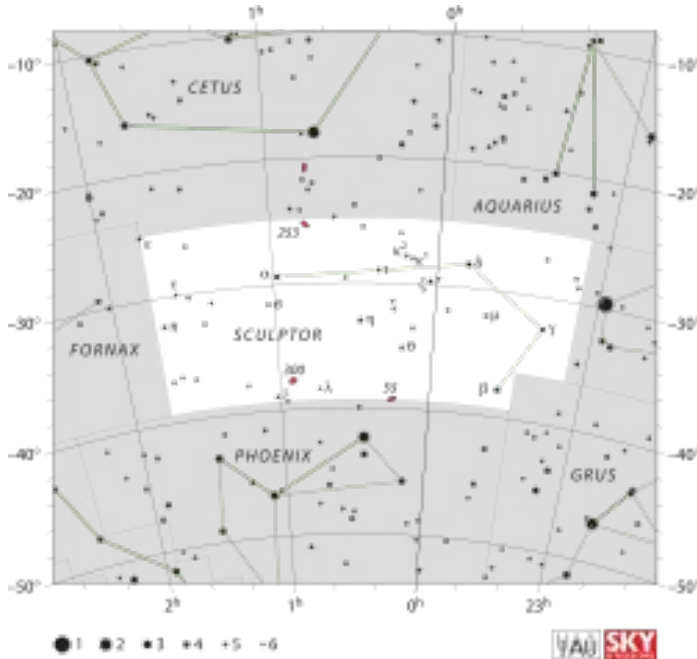
If you look the lower left you will find another group of faint galaxies called Stephen's Quintet, discovered by Edouard Stephen in 1877. These five galaxies are interacting. This group is one half degree southwest of NGC 7331, although they are faint with dark steady skies you might be able see them. The brightest member of this group is NGC 7320 (mag 13.2) at a distance of 40 million light years. The other four members are much farther away, about 300 million light years and will likely merge into one. Those four are gravitationally bound and make up the group called HCG 92 (Hickson Compact Group 92).

These two galaxy groups are unique and worth your time to locate, observe and image.



Spotlight on Sculptor, the Sculptor

Submitted by Dale Hooper



IAU and Sky & Tel - Roger Sinnott & Rick Fienberg

Sculptor never gets very high in the sky from our location. However, it is worth observing because of galaxies, galaxies, galaxies. This is home of the Sculptor group of galaxies near the south galactic pole. One of my favorite galaxies to observe, NGC 253 is part of this group. It should be on everyone's bucket list.

I am only listing the galaxies that rate at least four stars in *The Night Sky Observer's Guide* (Sculptor is in Volume 1). There are a number of additional galaxies which rate three stars which I haven't listed. As usual, the table is organized according to increasing Right Ascension values.

Object	R.A.	Dec.
NGC 7793 (Galaxy mag 9.2)	23h57.8m	-32°35'
κ-1 Sculptoris (Double star)	00h09.3m	-27°59'
NGC 24 (Galaxy mag 11.3)	00h09.9m	-24°58'
NGC 55 (Galaxy mag 8.1)	00h14.9m	-39°11'
NGC 134 (Galaxy mag 10.4)	00h30.4m	-33°15'
NGC 253 (Galaxy mag 7.6)	00h47.6m	-25°17'
NGC 288 (Glob Cluster m8.1)	00h52.8m	-26°35'
NGC 613 (Galaxy mag 10.0)	01h34.3m	-29°25'
τ Sculptoris (Double star)	01h36.1m	-29°54'
ε Sculptoris (Double star)	01h45.6m	-25°03'

Upcoming Events and Anniversaries

Nov 01 - 130th Anniversary (1889), [Edward Barnard Observes Dark Shadows \("Spokes"\) on Saturn's Rings](#)

Nov 02 - [Moon Occults Saturn](#)

Nov 02 - [Moon Occults Dwarf Planet Pluto](#)

Nov 03 - [Daylight Saving - Set Clock Back 1 Hour](#) (United States)

Nov 03 - [Taurids Meteor Shower](#) Peak

Nov 06 - 8th International Cosmic Day

Nov 08 - [Johannes Rydberg's](#) 165th Birthday (1854)

Nov 09 - [Carl Sagan Day](#)

Nov 09 - [Carl Sagan's](#) 85th Birthday (1934)

Nov 11 - [Transit of Mercury Across the Sun](#)

Nov 14 - 50th Anniversary (1969), [Apollo 12](#) Launch (Manned Moon Mission)

Nov 15 - [Dirk Klinkenberg's](#) 310th Birthday (1709)

Nov 17 - [Leonids Meteor Shower](#) Peak

Nov 20 - [Edwin Hubble's](#) 130th Birthday (1889)

Nov 24 - [Venus](#) Passes 1.4 Degrees From [Jupiter](#)

Nov 24 - [Carolyn Hurlless'](#) 85th Birthday (1934)

Nov 24 - 380th Anniversary (1639), [1st Observations of a Transit of Venus](#)

Nov 25 - [Asteroid 17473](#)

[Freddiemercury](#) Closest Approach To Earth (1.103 AU)

Nov 26 - 20th Anniversary (1999), [Galileo](#), Io 25 Flyby

Nov 27 - [Asteroid 23990](#)

[Springsteen](#) Closest Approach To Earth (1.117 AU)

Nov 28 - [Moon Occults Jupiter](#)

Nov 28 - [Mercury](#) At Its Greatest Western [Elongation](#) (20 Degrees)

Nov 28 - 55th Anniversary (1964), [Mariner 4](#) Launch (Mars Flyby Mission)





Nov 29 - [Moon Occults Saturn](#)

Nov 30 - [Moon Occults Dwarf Planet Pluto](#)

Nov 30 - [Asteroid 4305 Clapton](#) Closest Approach To Earth (1.886 AU)

Nov 30 - 410th Anniversary (1609), [1st Telescope Observations of the Moon by Galileo Galilei](#)

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. They plan to start loan out with Preston Jr. High Star Party
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 a year

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, and the CVAS Constitution. I agree to abide by the constitution.

Signature: _____ Date: _____

Bring this form to the meeting or Mail Application to:

Brad Kropp, CVAS Treasurer
1573 E 1425 N
1. Logan, UT 84341

For any questions contact our Treasurer, Janice Bradshaw at lojbrads@yahoo.com
or our Secretary Wendell Waters at wendellw57@comcast.net