

Cache Valley Clear Skies

The Journal of the Cache Valley Astronomical Society



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No Meeting This Month

There will be no CVAS meeting in May. Instead we have our annual potluck dinner and Star Party at Mt. Logan Park on May 15th. We will start eating at 6:30pm. We also have a Solar Party planned for May 9th from noon to 2pm at the Logan Library.

The President's Corner By Tom Westre, CVAS President



May is a month of warmer weather and if you haven't got the observing fever yet you should by now. Jupiter is well placed. The four Galilean moons are always interesting to watch from night to night as they orbit the king of the planets. The brilliant planet shines at magnitude -2.1 and remains on view until it sets around 2 a.m. local daylight time. If you aim a telescope at Jupiter, you'll see a 37"-diameter disk with plenty of atmospheric detail.

The most notable features are two dark belts that sandwich a brighter zone coinciding with the planet's equator. Now we have Saturn rising in the east. The beauty of its rings is unsurpassed. The ringed planet rises just before 9:30 p.m. local daylight time and appears highest in the south around 2 a.m. Saturn shines at magnitude 0.1 among the background stars of northern Scorpius. May has many many deep sky targets to view. I am including four images of several of these objects I took with my Celestron 11 and Canon T3i.



Virgo is due south this month. She contains Messier object M98, M99, M100, M85, M86 AND M84, M61. Coma Berenices has M53, M64, M85. Ursa Major has M81 and M82, M108, m97, M109. Canes Venatici (The Hunting Dogs) has M94, M106.



Corvus the Crow contains the famous Sombrero galaxy, Messier 104. But this Corvus also has an interesting interacting pair of galaxies, NGC 4038/4039 called the Antenna. They are magnitude 10 and 11 and consist of two merging galaxies.

Canes Venatici also has two intriguing galaxies, NGC 4631 (The Whale galaxy) and nearby NGC 4656 (The Hockey Stick galaxy). They are close enough to each other that they are causing tidal interactions. Also look for NGC 4627 very near 4631. This trio lies about 25 million light years away.

Here is a challenge, the Markarian Chain. This group of distant galaxies lies near the Virgo—Coma Berencies border and contain eight galaxies in a line. Two of its member, Messier 84 and Messier 86 were seen by Charles Messier in 1781. The Russian Astrophysicist Benjamin E. Markarian wrote an article on this group back in 1961 where we get its name. How many galaxies can you see in your telescopes field of view? Even small telescopes can meet the challenge. Besides M84 and M86 you should be able to see NGC4388, 4387, 4402, 44413, 4425, 4435, 4438, 4458, 4461, 4473, 4477, and 4479. They range from magnitude 8.1 to 12.4. This is a wonderfully rich area of the sky for skygazers. Drop me a line if you get a chance to see this remarkable group of galaxies.

Finally don't overlook the face on spiral galaxy Messier 51 in Canes Venatici one of astronomy's most iconic galaxy along with its close companion NGC 5194. Better known as the Whirlpool galaxy, it is located near the star Alkaid at the end of the Big

Dipper's handle. I have photographed this object many times and never tire of taking its portrait. It's only magnitude 8.4.



There are dozens and dozens of great targets for the Spring..so get out and enjoy. Send us a report of your observations.

Our club has a growing list of members. We now have 58 on our email list. The turnout at our meetings is fairly small so we would love to meet everyone and get to know you better. Rather than have a lecture for May we are planning a potluck picnic at Hyrum Gibbons Mt Logan Park in Logan May 15, from 6:30 pm to 7:30pm. Bring your telescope and we will have a short how to use your telescope for beginners at 7:30 pm. Our star party begins about 9:00 pm, as soon as it gets dark. So bring your spouse, a friend, and your telescope, for a great evening. If you are just getting started in Astronomy there will be club members there to help answer your questions.



Dale set up his solar telescope at the Logan Public Library and had about 20 members of the public take advantage of viewing the sun. We are scheduling another “Sun Party” at the Logan Public Library, Saturday May 9th from noon to 3 pm. If you have a solar scope bring it...if not come and join us anyway.

We are including a picture of club member Jacob Olsen’s new acquisition. Jacob attended our last meeting and we had a great discussion about his first telescope purchase. He finally got his Orion XX12i. A great telescope. We hope to see Jacob and his telescope at our star parties.

We would like to hear from any of our club members regarding their telescopes. Send us a picture and a short article describing your scope and your favorite targets.

You can send them to me, Tom Westre. My email is twestre45@aol.com or you can send your submission to Dale Hooper our newsletter editor at dchooper5@gmail.com.



Images from Last Month’s Spotlight Constellation

- Submitted by Dale Hooper

As you may recall, last month Blaine Dickey submitted images for each of the objects that were highlighted in the March issue for the spotlight on

the constellation Leo. Since my talk at the April meeting was about imaging using the SLOOH observatories, I thought it would be fun to include images of the Coma Berenices spotlight objects (from April) that I was able to image using SLOOH.

One of the limitations of using SLOOH is that you can only have reservations for five objects at any time. Also, since they currently have two of their telescopes down for repair my goal was a bit more difficult than I had expected. I started this project on April 19th so I think if I would have started it earlier in the month I would have been able to get all of the objects. Also, since I started later I had to settle for imaging some of the objects when they were fairly close to the moon.

Enough with the excuses – I was still able to get images of eleven of the 27 spotlight objects and I have reservations for five more. I thought you might also be interested in an image of the Horsehead Nebula (Barnard 33) that I was able to get before I started to get images of the April spotlight objects.

I used the SLOOH twenty inch Corrected Dall-Kirkham telescope located in the Canary Islands for all of the images. Most of the images have been cropped so that they would fit better in the newsletter.



Horsehead Nebula (Barnard 33) - 18 April 2015



NGC 4064 - 22 April 2015



M99 - 27 Apr 2015



M98 - 22 April 2015



NGC 4274, NGC 4283 and NGC 4286 - 27 April 2015



NGC 4251 - 23 April 2015



NGC 4293 - 27 April 2015



NGC 4314 and Two Unlisted Galaxies - 27 Apr 2015



NGC4419 - 5 May 2015



M 100, NGC 4328, NGC 4323, and an Unlisted Galaxy – 26 Apr 2015



NGC 4565 (Needle Galaxy) and NGC 4562 - 19 Apr 2015



M85 and NGC 4394 – 2 May 2015

Spotlight on Virgo

- Submitted by Dale Hooper

Springtime is certainly known as a good time to observe galaxies because the observable constellations are well away from the plane of the Milky Way. So if we are talking about observing galaxies then two of the main constellations to observe are Coma Berenices and Virgo. We looked at Coma Berenices last month so this month we are going to look at Virgo. Virgo, of course is home to the Virgo Cluster of galaxies.

Virgo consists of several reasonably bright stars and we can find blue-white first magnitude Spica by following the old mnemonic of: arc to Arcturus and

spike to Spica. In other words, follow the arc of the handle of the Big Dipper until you get to the orange first magnitude star Arcturus in Bootes. Then continue on with a straight line to Spica in Virgo.

The Virgo Cluster of galaxies consists of about 1300 to 2000 galaxies. There are also a goodly number of really nice multiple stars in Virgo. As usual, all of these objects rate at least four stars in *The Night Sky Observer's Guide* (in this case Volume 2). The tables are organized according to increasing Right Ascension values. I promise not to include images of all of these objects in next month's newsletter!

Object	R.A.	Dec.
NGC 4178 (Galaxy mag 11.4)	12h12.8m	+10°52'
NGC 4179 (Galaxy mag 11.0)	12h12.9m	+01°18'
NGC 4216 (Galaxy mag 10.0)	12h15.9m	+13°09'
NGC 4224 (Galaxy mag 11.8)	12h16.6m	+07°28'
Struve 1627 (Double star)	12h18.2m	-03°57'
Messier 61 (Galaxy mag 9.7)	12h21.9m	+04°28'
17 Virginis (Double star)	12h22.5m	+05°18'
29 Virginis (Double star)	12h18.2m	-03°57'
NGC 4365 (Galaxy mag 9.6)	12h24.5m	+07°19'
NGC 4371 (Galaxy mag 10.8)	12h24.9m	+11°42'
Messier 84 (Galaxy mag 9.1)	12h25.1m	+12°53'
NGC 4388 (Galaxy mag 11.0)	12h25.8m	+12°40'
NGC 4402 (Galaxy mag 11.8)	12h26.1m	+13°07'
Messier 86 (Galaxy mag 8.9)	12h28.5m	+17°05'
NGC 4429 (Galaxy mag 10.0)	12h27.4m	+11°07'
Messier 49 (Galaxy mag 8.4)	12h29.8m	+08°00'
Messier 87 (Galaxy mag 8.6)	12h30.8m	+12°24'
NGC 4517 (Galaxy mag 10.4)	12h32.8m	+00°07'
NGC 4527 (Galaxy mag 10.5)	12h34.1m	+02°39'
NGC 4535 (Galaxy mag 10.0)	12h34.3m	+08°12'
NGC 4536 (Galaxy mag 10.6)	12h34.5m	+02°11'
Messier 89 (Galaxy mag 9.8)	12h35.7m	+12°33'
Messier 90 (Galaxy mag 9.5)	12h36.8m	+13°10'
NGC 4570 (Galaxy mag 10.9)	12h36.9m	+07°15'
Messier 58 (Galaxy mag 9.7)	12h37.7m	+11°49'
Messier 104 (Galaxy mag 8.0)	12h40.0m	-11°37'
Messier 59 (Galaxy mag 9.6)	12h42.0m	+11°39'
Messier 60 (Galaxy mag 8.8)	12h43.7m	+11°33'
NGC 4654 (Galaxy mag 10.5)	12h44.0m	+13°08'
NGC 4666 (Galaxy mag 10.7)	12h45.1m	-00°28'
NGC 4698 (Galaxy mag 10.6)	12h48.4m	+08°29'
NGC 4699 (Galaxy mag 9.5)	12h49.0m	-08°40'
NGC 4754 (Galaxy mag 10.6)	12h52.3m	+11°19'

NGC 4753 (Galaxy mag 9.9)	12h52.4m	-01°12'
NGC 4762 (Galaxy mag 10.3)	12h52.9m	+11°14'
NGC 4845 (Galaxy mag 11.2)	12h58.0m	+01°35'
NGC 4856 (Galaxy mag 10.5)	12h59.3m	-15°02'
NGC 4866 (Galaxy mag 11.2)	12h59.5m	+14°10'
NGC 4958 (Galaxy mag 10.7)	13h05.8m	-08°01'
51 Virginis (Triple Star)	13h09.9m	-05°32'
54 Virginis (Double Star)	13h13.4m	-18°50'
NGC 5247 (Galaxy mag 10.1)	13h38.1m	-17°53'
84 Virginis (Double Star)	13h43.1m	+03°32'
Struve 1788 (Quadruple Star)	13h55.0m	-08°04'
NGC 5363 (Galaxy mag 10.1)	13h56.1m	+05°15'
NGC 5566 (Galaxy mag 10.6)	14h20.3m	+03°56'
105 Virginis (Triple Star)	14h28.2m	-02°14'
NGC 5746 (Galaxy mag 10.3)	14h44.9m	+01°57'
NGC 5813 (Galaxy mag 10.5)	15h01.2m	+01°42'
NGC 5838 (Galaxy mag 10.9)	15h05.4m	+02°06'

CVAS Minutes – April 2015

Tom Westre introduced the format for the meeting. Tom would be the first speaker, followed by Blaine Dickey and the final speaker would be Dale Hooper. Tom mentioned that it has been a great winter for observing. He discussed how with his DSLR he can see a lot of detail with short exposures.

It was announced that April 25th is national Astronomy Day and our planned potluck and star party is set for May 15th. We will probably have the solar scopes set up at the Logan Library on Astronomy Day.

April 21st the Moon passes near Venus and Aldebaran. April 22nd Mercury and Mars will be one degree apart. Tom also discussed details of current unmanned missions and on-going research.

Tom was able to do a lot of imaging over winter. He used his Canon T3i and Celestron C11. He imaged about sixty objects just between April 9th and April 10th.

Blaine has been imaging with his Mallincam Jr Pro video camera. Blaine observes from his home and he is connected to his observatory via wifi. He has

observed planets, the moon and many deep sky objects.

Dale then spoke about his experiences with SLOOH. He acquired a "Mission Card" for SLOOH when Inkley's was going out of business. SLOOH has a set of observatories in Chile and the Canary Islands. SLOOH provides a fairly low cost method of scheduling time on their remote observatories. An option is available for \$5 a month to follow "missions" scheduled by other observers or participate in live shows and other SLOOH "community" events. For \$25 a month an option is available to also schedule time on the remote telescopes to image objects of the observer's choice.

SLOOH provides several tools to help the observer schedule "missions" to observe the objects they would like to image. The observer can have five reservation time slot scheduled at any given time. SLOOH also allows you to see what objects other observers also plan to observe.

It is possible to take snapshots of any of the imaging missions regardless of who schedules it. SLOOH allows you to also download L, R, G and B FITS files for "missions" that you have scheduled so that you can do post processing or combine additional images.

One of the things that is the most fun about SLOOH is to see the images build up over time and listen to Bob Berman (best known as the author of the monthly *Strange Universe* article in *Astronomy Magazine*) explain details about the object being observed.

- Dale Hooper

Upcoming Star Parties

6 May	Solar Party, noon – 3pm, Logan Library
15 May	Pot Luck and Star Party, 6:30pm – Mt. Logan Park

Upcoming Events

3 May	Full Moon
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6 May	Eta Aquarid meteor shower peaks before dawn. However, the waning gibbous moon will reduce the number of meteors observed.
7 May	Mercury at greatest eastern elongation (21°)
14 May	Skylab Launched (1973)
15 May	Uranus 0.2° north of the Moon
18 May	New Moon
22 May	Saturn at opposition (up all night)
25 May	Memorial Day
27 May	Double shadow transit occurs on Jupiter (08:01pm to 10:18pm MDT).