

Cache Valley Clear Skies

The Journal of the Cache Valley Astronomical Society



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www.cvas-utah.org

Meeting Announcement

Our monthly meeting will be held on Friday, April 17, 2015 at 7:30pm at the Physics Conference Room (room 244) in the Science Engineering Research (SER) building directly east of the library. This month we will have several talks about astronomical imaging. Blaine Dickey will discuss some further images that he has taken with his Mallincam and 12 inch Meade SCT. Tom Westre will discuss the recent images that he has taken and Dale Hooper will discuss a subscription based remote observatory tool available to the public called SLOOH.

The President's Corner By Tom Westre, CVAS President



I have just been thinking how nice the weather has been since Jan 1. My last night in my observatory in 2014 was Oct 28. However since, Jan 1 2015 I

have been in my observatory 5 times in January, twice in February, four times in March. Not bad for that time of year. Each time I was able to take a series of images, so I have been able to cover some interesting winter deep sky objects usually avoided due to very cold weather.

In March we announced a Messier Marathon. Jim and Dell took me up on my invitation to join me for a Messier Marathon at my observatory. We had a great time. But we ended up only doing a half marathon. But we did manage to view 50 objects before calling it quits at about 12:30 am. I would like to call your attention to Mark Bratton's article, "William Herschel's Extraordinary Night of Discovery" in the April 2015 Sky and Telescope. Herschel was a very accomplished observer of the 18th century. He was especially interested in nebula and published three catalogs of objects in 1785 which later led to the useful New General Catalog of Nebula and Clusters of stars in 1888. On one particular night, April 11, 1785 he and his equally famous sister Caroline, who assisted him, swept the area in Leo and Leo Minor. During that one night they located 74 objects. Bratton's article describes each of these objects and provides a table of all 74 on pages 41-42. If the weather cooperates it would be interesting if we could challenge ourselves to follow Herschel's achievement. Let me know if you like this idea. Here is the link to the Herschel Spring for a pdf or Excel list of all the objects he listed that

night. <http://www.skyandtelescope.com/sky-and-telescope-magazine/beyond-the-printed-page/herschel-sprint/>

Lyle sent me a reminder that this year will see a lot of spacecraft reaching their destinations.

- During April, the Dawn spacecraft will start sending the first close-up photos of Ceres, the dwarf planet in the asteroid belt
- During July, the New Horizons spacecraft will start sending the first close-up photos of Pluto and its moons
- During late summer, the Rosetta spacecraft will give us front-row seats as comet 67P swings around the sun

Our upcoming club activities include our April Lecture (April 17), April is Astronomy Month, and this is a good time to make the public aware of astronomy and our club. Would some of you like to join me in setting up my solar telescope at the Logan Public library Saturday April 11 from noon to 2 pm? May might be a great month to plan a club potluck dinner and then have a star party that evening. Let me know if you can support that activity.

I want to bring to your attention our new website design, at cvas-utah.org. We are in the process of updating the website. I would like to have your feedback. We will be expanding the section for members submitting photos. So I hope you take advantage of this.

Finally, just a note about dues. To be a member of CVAS we call for dues of \$20 a year. With that membership you get the monthly newsletter, our club telescope at 10 inch Dobsonian is available, many handouts, and the website (cost \$50 a year), are available. We still hope to

get a 501 (c) (3) tax exempt status to allow for donations. But that costs \$400 just to apply. So far we are falling short of this goal. CVAS is a great club and we have the potential to make the public aware of a great hobby, astronomy. Thanks for all you do.

Photos from the President

- Submitted by Tom Westre

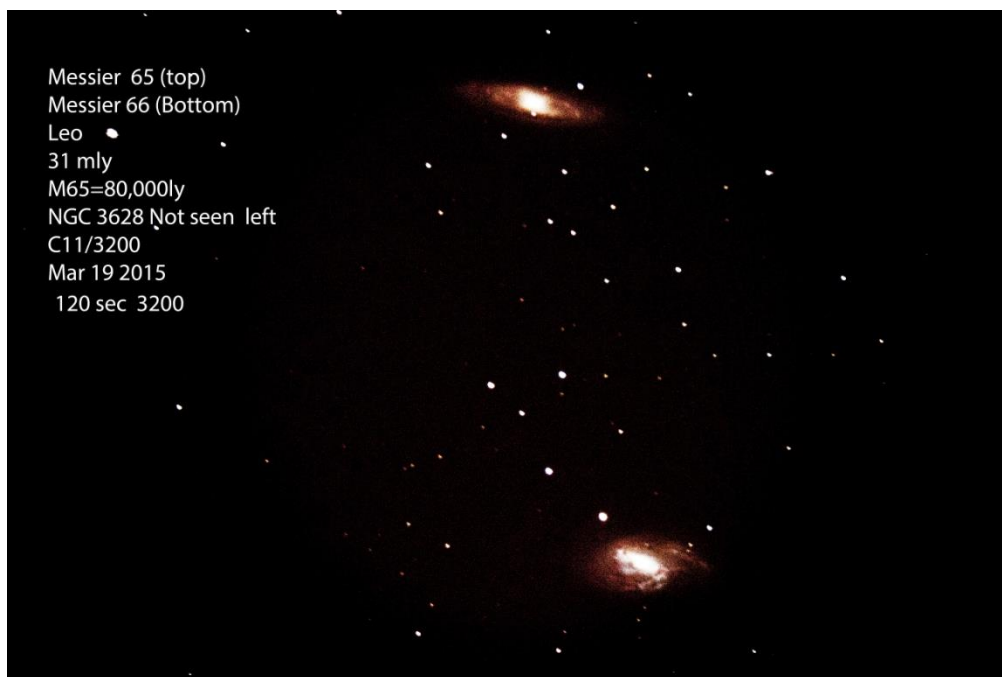


Image of M105, NGC 3384 and NGC 3380 taken by Tom Westre, March 19, 2015

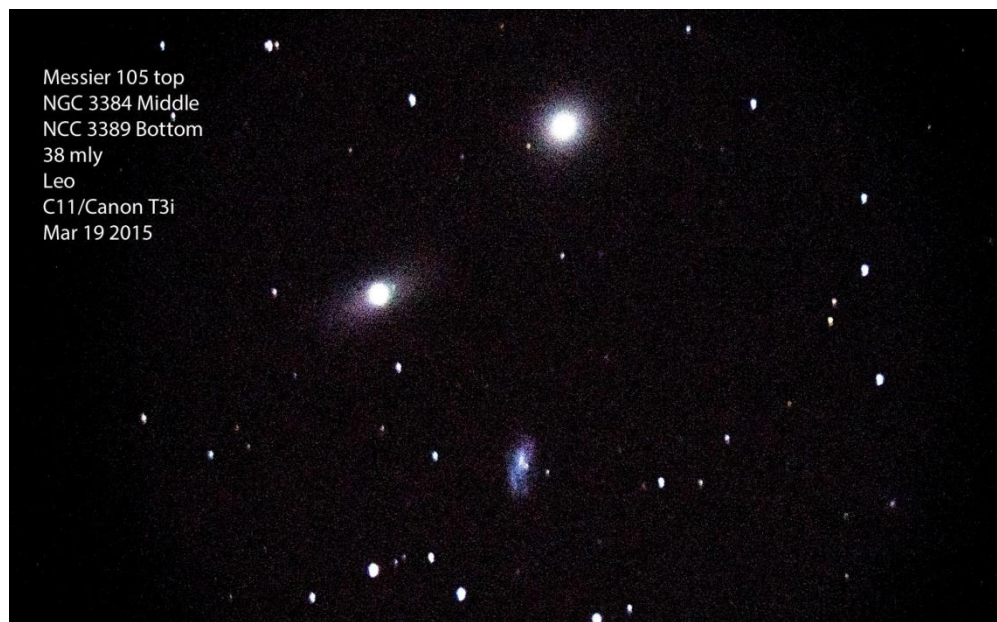


Image of Messier 65 and 66 in Leo taken by Tom Westre, March 19, 2015

The constellation Leo the Lion rises in the east during spring. Leo is an ancient constellation going back to the ancient Egyptians. The bright star Regulus is the Alpha star which means "Little King" The star was named by Copernicus. Regulus is located in the handle of the sickle and lies almost on the ecliptic at a distance about 71 light years. It is about 100 times brighter than our sun. Leo contains many distant galaxies. Some of the brighter galaxies are"

M 65	NGC	2903
M 66	NGC	3227
M95	NGC	3521
M96	NGC	3628
M105		

Messier Marathon from the North Country

— Submitted by Dale Hooper

As I mentioned in the newsletter last month, I decided to try the Messier Marathon from Curlew State Park in Idaho which is about seven miles north of Snowville, Utah. I was able to observe with a couple members of the OAS and their spouses. I had hoped that some CVAS members might show up – but there is always next time.

The weather reports weren't making things look too promising. But, it looked like the clouds would at least cooperate for a while.

In spite of dealing with some form of clouds all night, the marathon went pretty well for me. I was very surprised how dry it was. Normally we end up fighting dew as the night progresses, but I kept checking my table and books and they were completely dry all night long. Since the marathon was earlier this year I was actually able to get all but one of the three tough early objects. This made it so that the tough objects were a bit higher in altitude and it got darker a bit sooner. I could see M77 with averted vision and I also could barely see M33. But I missed M74 as usual.

I was able to get through M104 (which was pretty washed out by the clouds) by midnight. Because of

the clouds a lot of my notes indicated that many objects looked cometary. This made me think about Charles Messier and that the reason he originally observed these objects was to see if they were comets.

The objects in Hydra were still pretty low at midnight so this allowed me to take a nap from just after midnight until a bit after 3am before catching M68 and M83 in Hydra. From there things went pretty well in spite of the continued clouds - until I got to Sagittarius. I was surprised that I made it through the Sagittarius open clusters because the clouds were getting worse. By the time I got to M20 and M8 the clouds were really starting to get bad - so I could just barely make out a bit of the nebulosity.

I was able to barely see the two globular clusters M28 and M22 just a bit after 6am. When M22 looks bad - you know you are in trouble. At that point I could see that the clouds were telling me that I was done.

For this marathon I was able to see 99 of the 110 Messier objects (I used NGC 5866 for M102). So this is the best I've done in about the past seven or eight years.

Images from Last Month's Spotlight Constellation

- Submitted by Blaine Dickey

As you may recall, the spotlight constellation for last month was Leo. Blaine Dickey went above and beyond observing the listed objects. He imaged them with his MallinCam Jr. Pro and sent them along to us so that we could also enjoy them.



2015-03-12 22:11:01
MallinCam Jr. Pro/PC - Color EXview HAD CCD
Integrating: 10 of 30 sec., Frames: 6 of 6
M96 Galaxy



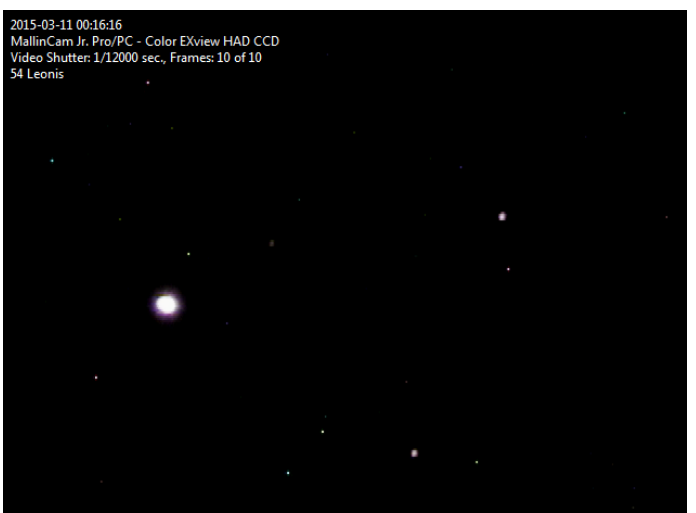
2015-03-12 22:36:53
MallinCam Jr. Pro/PC - Color EXview HAD CCD
Integrating: 17 of 30 sec., Frames: 5 of 5
NGC 3412 Galaxy



2015-03-12 22:17:51
MallinCam Jr. Pro/PC - Color EXview HAD CCD
Integrating: 26 of 30 sec., Frames: 6 of 6
NGC 3377 Galaxy



2015-03-11 00:16:16
MallinCam Jr. Pro/PC - Color EXview HAD CCD
Video Shutter: 1/12000 sec., Frames: 10 of 10
54 Leonis



2015-03-12 22:30:57
MallinCam Jr. Pro/PC - Color EXview HAD CCD
Integrating: 6 of 30 sec., Frames: 6 of 6
M105 and NGC 3384 Galaxies



2015-03-12 22:44:34
MallinCam Jr. Pro/PC - Color EXview HAD CCD
Integrating: 15 of 30 sec., Frames: 5 of 5
NGC 3489 Galaxy



2015-03-12 22:50:27
MallinCam Jr. Pro/PC - Color EXview HAD CCD
Integrating: 7 of 30 sec., Frames: 5 of 5
NGC 3521 Galaxy



2015-03-12 23:11:09
MallinCam Jr. Pro/PC - Color EXview HAD CCD
Integrating: 8 of 30 sec., Frames: 4 of 5
M66 Galaxy



2015-03-12 22:55:41
MallinCam Jr. Pro/PC - Color EXview HAD CCD
Integrating: 19 of 30 sec., Frames: 5 of 5
NGC 3593 Galaxy



2015-03-12 23:16:13
MallinCam Jr. Pro/PC - Color EXview HAD CCD
Integrating: 7 of 30 sec., Frames: 5 of 5
NGC 3628 Galaxy Edge on

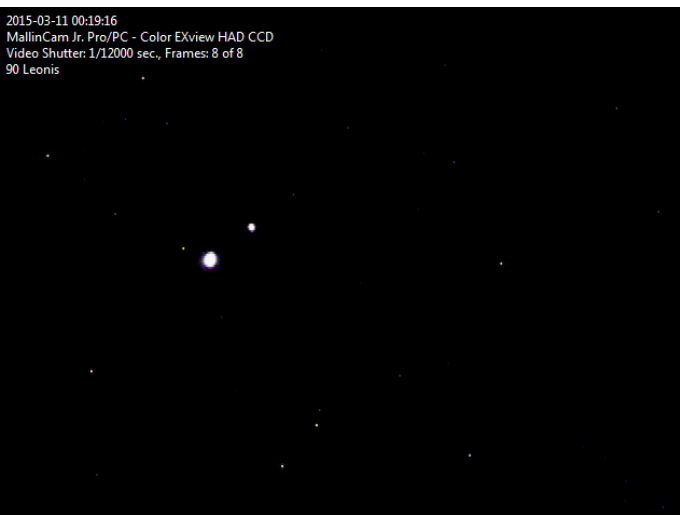


2015-03-12 23:01:29
MallinCam Jr. Pro/PC - Color EXview HAD CCD
Integrating: 6 of 30 sec., Frames: 5 of 5
M65 Galaxy



2015-03-12 23:20:39
MallinCam Jr. Pro/PC - Color EXview HAD CCD
Integrating: 5 of 30 sec., Frames: 5 of 5
NGC3705 Galaxy





Spotlight on Coma Berenices

- Submitted by Dale Hooper

Coma Berenices, Berenice’s Hair is a very non-descript constellation nestled between Canes Venatici, Bootes, Leo and Virgo. In fact, it is so lacking in bright stars that it doesn’t even show up on the skymaps.com star chart. But, like Canes Venatici what it lacks in bright stars it makes up for with great deep sky objects.

NGC 4565 is a beautiful example of an edge on spiral galaxy and should be on everyone’s bucket list. Coma Berenices (abbreviated as COM) has a couple really nice triple stars, tons of galaxies to observe and a very nice globular cluster M53. As usual, all of these objects rate at least four stars in *The Night Sky Observer’s Guide* (in this case

Volume 2). The table is organized according to increasing Right Ascension values.

Object	R.A.	Dec.
NGC 4064 (Galaxy mag 11.4)	12h04.2m	+18°27’
Messier 98 (Galaxy mag 10.1)	12h13.8m	+14°54’
NGC 4251 (Galaxy mag 10.7)	12h18.1m	+28°10’
Messier 99 (Galaxy mag 9.9)	12h18.8m	+14°25’
NGC 4274 (Galaxy mag 10.4)	12h19.8m	+29°37’
NGC 4293 (Galaxy mag 10.4)	12h21.2m	+18°23’
NGC 4314 (Galaxy mag 10.6)	12h22.6m	+29°53’
Messier 100 (Galaxy mag 9.3)	12h22.9m	+15°47’
Melotte 111 (Open cluster)	12h25m	+26°
Messier 85 (Galaxy mag 9.1)	12h25.4m	+18°11’
NGC 4414 (Galaxy mag 10.1)	12h26.4m	+31°13’
NGC 4419 (Galaxy mag 11.2)	12h26.9m	+15°03’
NGC 4448 (Galaxy mag 11.1)	12h28.2m	+28°37’
NGC 4450 (Galaxy mag 10.1)	12h28.5m	+17°05’
NGC 4473 (Galaxy mag 10.2)	12h29.8m	+13°26’
NGC 4494 (Galaxy mag 9.8)	12h31.4m	+25°47’
Messier 88 (Galaxy mag 9.6)	12h32.0m	+14°25’
Messier 91 (Galaxy mag 10.2)	12h35.4m	+14°30’
NGC 4559 (Galaxy mag 10.0)	12h36.0m	+27°58’
NGC 4565 (Galaxy mag 9.6)	12h36.3m	+25°59’
NGC 4689 (Galaxy mag 10.9)	12h47.8m	+13°46’
NGC 4710 (Galaxy mag 11.0)	12h49.6m	+15°10’
NGC 4725 (Galaxy mag 9.4)	12h50.4m	+25°30’
35 COM (Triple Star)	12h53.3m	+21°14’
Messier 64 (Galaxy mag 8.5)	12h56.7m	+21°41’
Messier 53 (Glob Clstr m7.5)	13h12.9m	+18°10’
Burnham 800 (Triple Star)	13h16.9m	+17°01’

CVAS Minutes – March 2015

Tom Westre showed his “President’s Photo of the Month”. Tom encouraged everyone to email their photos and get them included in the newsletter. Tom mentioned that recent reports show that the Milky Way may be 50% larger than expected. He also discussed the geysers on Saturn’s moon Enceladus.

It is Messier Marathon time and Tom is hosting a marathon at his home.

Lyle introduced his Dad, Dr. Hollis R. Johnson. Dr. Johnson is an Emeritus Professor of Astronomy from

Indiana University. Dr. Johnson also taught as a visitor at many other universities.

His talk was about the Big Bang – Everything from Nothing? Until a few hundred years ago the Earth was thought of as the center of the universe. He discussed the concept of what is everything and that the net energy of the universe is zero but there is no empty space. Dr. Johnson stated that even without particles there are still energy fields.

Edwin Hubble showed that far away galaxies are moving away from us. The universe is expanding but there is no center and no edge. Hubble showed a correlation between recession velocity and distance. If we follow this backwards there was a time when everything was very close together and very hot. Fred Hoyle coined the term “Big Bang” but didn’t accept it. Evidence of the big bang is the expansion, the cosmic background radiation, and the ratios of the lightest elements.

Astronomers used type 1A (white dwarf) supernovae to show that the expansion rate of the universe is actually accelerating.

Dr. Johnson also answered questions from a variety of subjects including the multiverse. In this case, universes would move quickly away after forming which limits our ability to test the theory.

- Dale Hooper

12 Apr	Yuri Gagarin, first man to orbit Earth (1961)
18 Apr	New Moon
22 Apr	Lyrid meteor shower peak
25 Apr	Hubble Space Telescope deployed from Space Shuttle Discovery (1990). See Apr 2015 Astronomy Magazine Special Edition
25 Apr	Astronomy Day

Upcoming Star Parties

May TBD Pot Luck and Star Party – Stay tuned for details.

Upcoming Events

2 Apr	First photograph of the Sun (1845)
3 Apr	Luna 10, first craft to orbit moon (1966)
4 Apr	Full Moon – Total Lunar Eclipse
8 Apr	The Moon passes 2 degrees north of Saturn
10 Apr	Venus passes 3 degrees south of the Pleiades