



## Cache Valley Clear Skies

The Journal of the Cache Valley Astronomical Society



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

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### Meeting Announcement

Our March meeting will be held **Wednesday, March 27<sup>th</sup> at 7 pm in Room 840 of the main BTC Campus.** Enter on the east side of the building located at 1301 North 600 West. John Vanderford of USU will be discussing Meteorites.

### Upcoming Star Parties

There are no “official” star parties scheduled for the month of March, but that doesn’t mean you can’t put one together on your own!! (if the skies every clear up.)

### Special Announcement

If you can help out with the STEM fairs in March or April, please contact Dell Vance or Bruce Horrocks (see Dell’s article for more info).

### The President’s Corner By Dell Vance, CVAS President



February was a tough month for me as far as observations go. I made it out for about an hour, early on in the month, and nothing for the rest of the month. However, that is not to say it has been a slow month for CVAS.

During this month we received two telescopes for the Library Loaner Telescope Program. One was donated by Utah NASA Space Grant Consortium. It has been modified and is ready to be placed in the North Logan Library. The

other telescope was donated by INOVAR and Bruce Horrocks. We hope to place it in the Cache County Library in Providence once it is modified. We will have more information in next month's Newsletter about these two donations. This will bring us up to 5 libraries in the Cache Valley participating in the program. There are a total of 10 libraries in the valley, so we are 50% complete.

It is sometimes more difficult to get a telescope into the hands of the patrons than we had thought. I have talked to some of the libraries about what it takes to make this happen. It often requires a policy to be written and then reviewed by the Library Board. These board meetings can be monthly, every other month, or even quarterly. With the holiday season that makes it even more difficult, because some meetings are deferred. I really appreciate all the work done by the librarians to make this happen.

At the time of writing for this article we have not yet had our February Meeting. I am confident that it will be well received. It is on Black Holes. This is always a popular topic. The March Meeting will be Wednesday 27, 2019 and will be presented by John Vanderford. The presentation will be on meteors and meteorites. John has been the NASA Outreach Director for several years and is recently retired. We are very excited to have him as a presenter.

We still have some outreach opportunities with the Cache County School District as we mentioned last month. The Wellsville Elementary STEM Fair was very successful, and we have heard good reports about the efforts of Bruce Horrocks and Harvey Brown. We have been asked to do three more elementary schools.

- Cedar Ridge Elementary, Hyde Park - March 20, 6-8 PM (covered)
- Greenville Elementary, North Logan – March 21, 5-7 PM (need two more volunteers)
- Lincoln Elementary, Hyrum – April 11, 6-8 PM (need two more volunteers)

Also, in February Tom Westre and Blaine Dickey have been presenting astronomy items on the Utah Public Radio. These are 90 sec spots that air every Tuesday at 4:48 PM. You can listen to them on the NPR channels or on the internet at UPR.org with a live feed. They have been doing a great job.

I did an experiment with my telescope to see the effects of a focal reducer. Here are two photos of the Orion Nebula. One is with an f/6.3 focal reducer which gives a bigger field of view and the other is without a focal reducer. It is fun to see the difference.



March should be a great month to get out and do some observing. Be sure to watch for the opportunities.

Thanks again for your great support.  
Clear Skies!

# Deep Sky Observer

By Blaine Dickey

Recently I purchased a new Mallincam SkyRaider ds287c video camera. This Camera is supposed to have the most sensitive CMOS chip made so far. It certainly seems to be very sensitive. Most of the images shown in this article were less than 10 seconds long, and most were considerably shorter. Because the weather has been so poor, I had not had much time to try it out. When it finally cleared up one evening I took it for a spin. I attached the camera to the LX200R 12 inch Telescope in my observatory. Most of these images were of objects in the constellation Orion.

The first object I imaged was Messier 42 the Great Orion Nebula as seen in Figure 1. The colors and details are spectacular. Messier 43 seen in Figure 2 is in the same neighborhood and is often overlooked but it is also a wonderful object to image. Often we visit the more famous objects in each constellation but as you can see displayed here there are other treasures that are worth taking a look at in Orion. Double Star HR 1648 a Carbon Star seen in Figure 3 is noticeably red and has a dimmer yellowish companion. Multiple Star HR 1507 seen in Figure 4 has 5 stars grouped closely together.

Possibly few of us have seen the Horse-head Nebula with our eyes through a telescope but if you look closely at Figure 5 it's outline does show up faintly visible even from my modestly light polluted skies here in Millville.

Figure 6 is an image taken of a faint galaxy NGC 1667 near Orion in the constellation Eridanus. My catalog told me it was in Orion, but further investigation shows it just south of the border of Orion, so I thought I would include it anyway.

Figure 7 shows a new comet C/2018 Y1 (Iwanmoto) that has sped by earth in February. It was closest to earth on the 12<sup>th</sup> of February. It was a cold night on the 7<sup>th</sup> of January when this image was taken with my DSLR with a 6" telescope.



Figure 1 Messier 42



Figure 2 Messier 43



Figure 3 HR1648 Carbon Star



Figure 4 HR 1507 Multiple Star

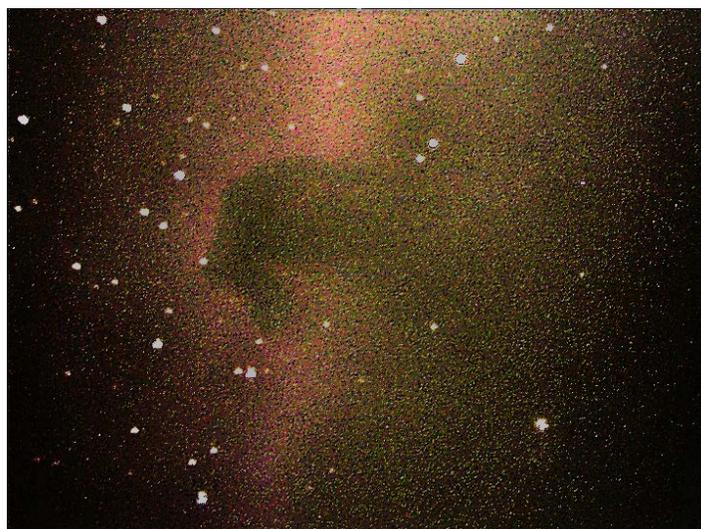


Figure 5 Horse Head Nebula

Also I took another image of the Messier 42

Figure 8 with the DSLR through my 6 inch scope. You may wish to compare it with the image in Figure 1 with the Mallincam. Figure 1 was 1 second compared with 20 seconds using the DSLR.

So far I am pleased with my new Mallincam, and look forward to using it this spring, summer, and fall to see what's up there.



Figure 6 NGC 1667 Galaxy in Eredanus



Figure 7 Comet C/2018 Y1 (Iwamoto)

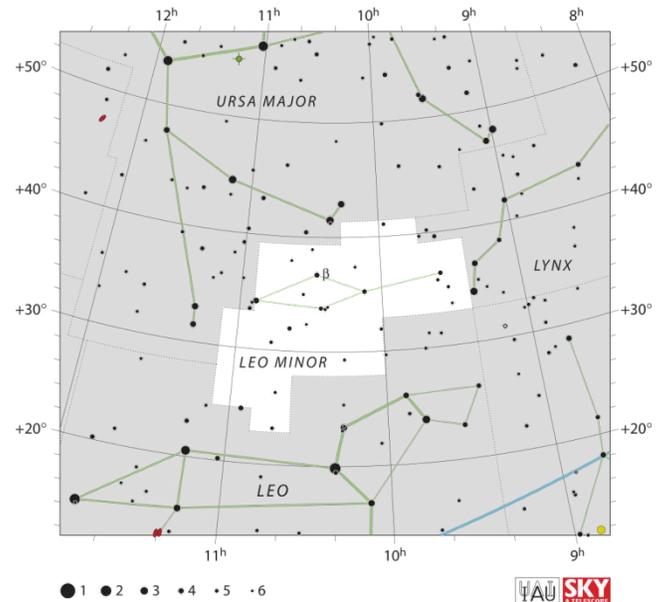


Figure 8 Messier 43 thru DSLR on 6'' scope

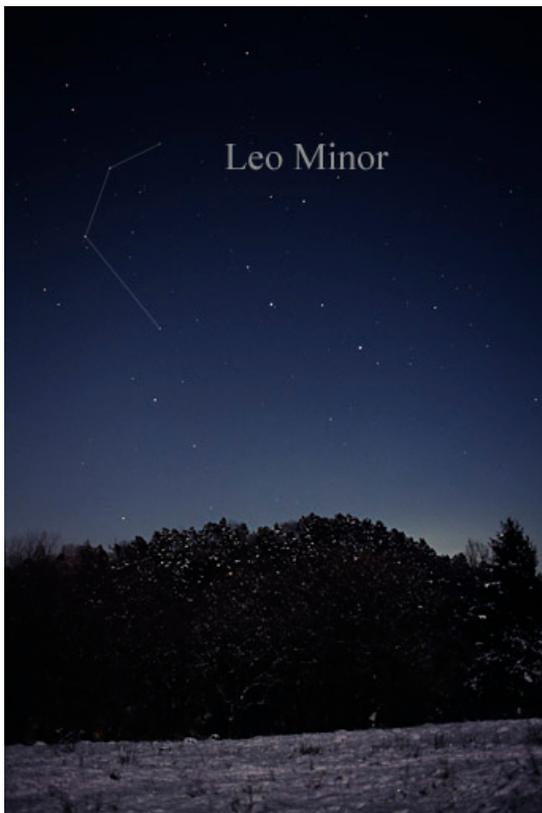
# Spotlight on Leo Minor, the Small Lion

By Dale Hooper

Leo Minor doesn't show up as a named constellation on our monthly sky map. But it is represented by the three stars shown between Ursa Major and Leo. Leo Minor is very well placed in March. It is a smaller constellation and doesn't have any bright stars but it does contain the same type of objects as other constellations in its general area – galaxies. It is well worth exploring this region which isn't nearly as well known as Virgo or Leo. Most of these galaxies beg for at least an eight to ten inch telescope, but you will be well rewarded for observing them



IAU and Sky & Tel -Roger Sinnott & Rick Fienberg



The constellation Leo Minor as it can be seen with the unaided eye.  
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Objects which rank at least three stars in *The Night Sky Observer's Guide* (Leo Minor is in Volume 2) have been included. As usual, the table is organized according to increasing Right Ascension values.

Object	R.A.	Dec.
NGC 2415 (Galaxy mag 10.9)	09h24.3m	+34°31'
R Leo Minoris (Variable star)	09h45.6m	+34°31'
NGC 3003 (Galaxy mag 11.9)	09h48.6m	+33°25'
NGC 3021 (Galaxy mag 12.1)	09h51.0m	+33°33'
NGC 3245 (Galaxy mag 10.8)	10h27.3m	+28°30'
NGC 3254 (Galaxy mag 11.7)	10h29.3m	+29°30'
NGC 3277 (Galaxy mag 11.7)	10h32.9m	+28°31'
NGC 3294 (Galaxy mag 11.8)	10h36.3m	+37°20'
NGC 3344 (Galaxy mag 9.9)	10h43.5m	+24°55'
NGC 3414 (Galaxy mag 11.0)	10h51.3m	+27°19'
NGC 3432 (Galaxy mag 11.2)	10h52.5m	+36°37'
NGC 3486 (Galaxy mag 10.5)	11h00.4m	+28°58'
NGC 3504 (Galaxy mag 10.9)	11h03.2m	+27°58'

## Spacesuits Not Required

By Lyle Johnson

Have you ever thought about how surprising it is that you do not wear a highly sophisticated million-dollar spacesuit?

Our solar system includes a star, four rocky planets, four gaseous planets, many dwarf planets, perhaps 200 or more moons, and innumerable asteroids and comets. Yet among all of these objects, there is only one on which you could survive for more than a few minutes without a very complex spacesuit. Consider the two nearest planets as examples. If you were to step outside in your street clothes on Venus, you would be crushed by the weight of the atmosphere – equal to the pressure one kilometer deep in the earth’s ocean. If not for that, Venus’ temperature of 800°F would kill you instantly. At least you would not have time to die from the poison in the atmosphere.

Walking your dog on Mars would not be much more pleasant. Most of the planet is bitterly cold, there is not nearly enough oxygen to breathe, and your organs would outgas and rupture within a few minutes due to the extremely low atmospheric pressure.

What make the earth unique in the entire solar system? The earth is at the right distance from the sun. It has a magnetic field and an ozone layer that deflect most of the sun’s harmful radiation. It has breathable air and an average temperature of 59°F. It has a vast amount of liquid water and dry land with water-regulating, nutrient-cycling soil. It has millions of species of plants and animals

To reach another object like the earth, we would have to travel at least several light years – one light year being 5,900,000,000,000 miles.

As I have observed and learned about the solar system and the Milky Way Galaxy, my appreciation has grown astronomically for our own incredible planet, a beautiful oasis in a dark, cold and vast amount of space.

## CVAS Loaner Telescope

CVAS provides a 10 inch Dobsonian telescope to club members. Contact Garrett Smith to make arrangements to use this telescope. Garrett can be contacted by email at [GarrettGillSmith@gmail.com](mailto:GarrettGillSmith@gmail.com).



### 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](mailto: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

Mar 01 - Moon Occults Saturn  
Mar 02 - Moon Occults Dwarf Planet Pluto  
Mar 03 - 55th Anniversary (1959), Pioneer 4 Launch  
Mar 04 - 40th Anniversary (1979), Voyager 1's  
Discovery of Jupiter's Rings  
Mar 05 - 40th Anniversary (1979), Voyager 1, Jupiter  
Flyby  
Mar 05 - 40th Anniversary (1979), Steve Synnott's  
Discovery of Jupiter Moon Thebe  
Mar 08 - 40th Anniversary (1979), Linda Morabito's  
Discovery of Volcanoes on Io  
Mar 09 - International Day of Planetariums  
Mar 09 - [Yuri Gagarin's](#) 85th Birthday (1934)  
Mar 10 - Daylight Saving - Set Clock Ahead 1 Hour  
(United States)  
Mar 14 - [Albert Einstein's](#) 140th Birthday (1879)  
Mar 17 - 120th Anniversary (1899), William Pickering's  
Discovery of Saturn Moon Phoebe  
Mar 20 - Vernal Equinox, 21:58 UT  
Mar 21 - Supermoon  
Mar 21 - 335th Anniversary (1684), Giovanni Cassini's  
Discovery of Saturn Moon Tethys & Dione  
Mar 22 - [Ulugh Beg's](#) 625th Birthday (1394)  
Mar 23 - Mars Spring Equinox  
Mar 23 - [Pierre Simon Laplace's](#) 270th Birthday (1749)  
Mar 27 - 50th Anniversary (1969), Mariner 7 Launch  
(Mars Flyby Mission)  
Mar 28 - 70th Anniversary (1949), Fred Hoyle Coins the  
Term "Big Bang"  
Mar 29 - Moon Occults Saturn  
Mar 29 - Moon Occults Dwarf Planet Pluto  
Mar 29 - 45th Anniversary (1974), Mariner 10, 1st  
Mercury Flyby

### In Case You Missed It

If did not attend our monthly CVAS meeting on Wed. Feb. 27, you missed out. Paul Ricket from the U of U gave a fantastic presentation on Black Holes. He had a terrific power-point with lots of visuals and videos. Those who attended learned a lot more about space-time, about how “gravity wells” affect space-time, and whole lot about how black holes affect the galaxies around them and even the universe as a whole. All in all it was a great meeting.

## Best CVAS Images

By Bruce Horrocks



This was our February target to image it is the nebula in [NGC2438](#). I took this on February 1, I think it was the only night at wasn't cloudy. I used my Celestron C11 Edge with a Hyperstar lens shooting at f/2 with a ZWOASI 294 pro camera. It is a compilation of 7 – 30 second exposures. It was really low in the southern sky so I was surprised to get any image at all. Hope next month is better for the weather.

### Did You Know?

Did you know that every month our newsletter contains several hyperlinks? Just look for the blue underlining in each article. If you are connected to the internet, you can use these to open up a webpage to learn more about the subject. Or, if the hyperlink is on an email address, you can use the link to send an email to that person. If you are using a mobile device to read the newsletter (like an iPhone or tablet) just tap on the link and your web browser (or email program) will open. If you are using your desktop PC, just hold down the CTRL while you left-click on the link with your mouse. As an example, look at the entry on Mar 14<sup>th</sup> in our “Events and Anniversaries” article on this page. You will see that it is Albert Einstein’s 140<sup>th</sup> birthday. If you click on his name, your web browser will open to his Wikipedia page, and you can read all about him!!

# 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.

\_\_\_\_\_

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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: \_\_\_\_\_

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Bring this form to the meeting or Mail Application to:

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

For any questions contact our Treasurer at [brad.kropp@usu.edu](mailto:brad.kropp@usu.edu) or our Secretary Wendell Waters at [wendellw57@comcast.net](mailto:wendellw57@comcast.net)