



## 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

We will be having a Zoom club meeting on Wednesday, Jan 27<sup>th</sup> at 7:00 pm. We will let you know more as the date gets closer. We hope you will all be able to join us.

Clear Skies!

The CVAS Executive Committee

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

Happy New Year to you all! On behalf of the Executive Committee we hope you all are doing well and are anxious to get going on a new year of astronomy. I know that the isolation and inability to meet as a group has taken a bit of a toll on our club and we hope that soon this will change. I have confidence that as the medical world moves forward with treatments and vaccines that this COVID pandemic will subside and that we can return to our club meetings and star parties. So here is hoping to a great new year!

I must admit being an astronomer in Cache Valley is not so much fun during the wintertime. There are many cloudy days and nights and the cold temperatures don't help you enjoy it for very long when you are out there. I looked at the weather forecast last week and saw one night that looked clear for viewing. I went out that night and with it only being about 7 degrees above zero that night it wasn't long before I was back in the house trying to get my hands warmed up. It didn't help to have my mount not wanting to align either. There are many nights when I come in cold and frustrated and my

wife starts to suggest some other hobbies that I might choose to pursue. I tell her I am having fun, just not this very moment. I am the eternal optimist that soon the skies will clear and get warmer, so I keep on going.

There are some good things to look forward to for this year and if we are really lucky, NASA might just finally get that James Webb Space Telescope launched. It was originally scheduled to launch in March and now it is pushed back again to October. I really hope that they can get this thing out there in space and get it working. We have learned so much from the Hubble Telescope that I think this new one will really change a lot of what we know about the universe. It started with a 500 million dollar budget and now is up to 10 billion dollars, so I hope we get 20 times more use and information out of it. I think of the life of the Hubble Telescope and it has really been amazing that it has worked so great for the past 30 years. Our knowledge of space and the universe have been greatly expanded by this telescope and I expect similar results and even more from the James Webb Telescope.

In our club we have quite a variety of members and interest. We try to look at several different topics that we can use for our club meetings and that are subjects you will all find interesting and educational. As it appears that many members of our club and astronomy in general seems to be heading towards more of astrophotography, we seem to have many topics on that nature. We hope that we are not leaving others out or creating meeting that you may not have an interest in. We would really like to hear from you if you have a topic you would like to know more about or even better if it is something you would like to share with the club. Please let us know how we can help you in your desire to learn more about astronomy. We would be glad to even review some basic concepts if you would like. So please let us know if you have something that you would like to see as a club meeting topic.

I have been really enjoying trying some different filters in my cameras this past year, so for Christmas I had Santa bring me a dual band filter. I

have seen some pretty good images on the internet with photographers using a one shot color camera (OSC) and different filters. I will have to let you know what I think of this in some future post. I tried using the filter the other night when we did have a bit of clear skies and my first impression was that it will require a lot more time for the exposure. I couldn't even hardly see any stars unless I really extended the exposure time. Maybe in the next newsletter I can post a few images. That or I will let you know how much I was able to sell a used filter for.

Again, we want to wish you all a new year and hope that we all enjoy some good health and clear skies.

Clear Skies,

Bruce Horrocks

## **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

## **CVAS on Utah Public Radio**

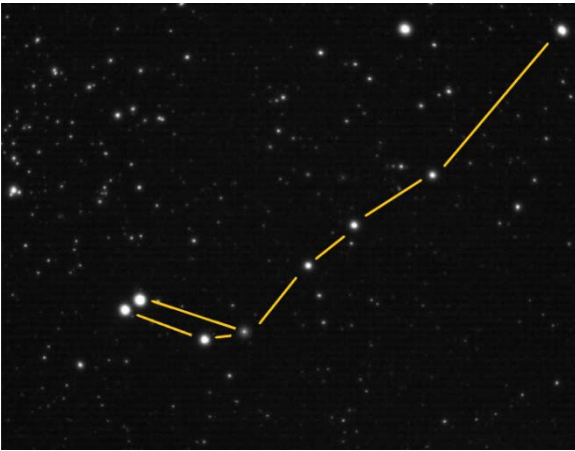
Listen to CVAS on Utah Public Radio each Tuesday at 4:48 pm. Blaine Dickey and Tom Westre are writing weekly astronomy related scripts and recording the program at their station. We are pleased that the folks at UPR have invited us to present a weekly topic on astronomy. You can listen in Logan on 91.5 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)

## Andromeda, The Chained Lady

By Blaine Dickey

Andromeda has many celestial objects within its borders that are wondrous to view. January is the season where Andromeda passes nearly overhead in our night sky.

To begin with there is an asterism contained within the constellation Andromeda that I was unaware of called the Golf Putter. This is a large binocular object about  $\frac{1}{2} \times 1\frac{1}{2}$  degree in size. The heavens didn't forget all you golfers out there.



NGC 7662 called the Blue Snowball Nebula is a delicate planetary nebula that displays its bluish aqua color in brief exposures. This planetary is estimated to be about 1800 light years distant. A scorching white dwarf can be seen at the center of this nebula.



NGC 891 is one of my admired edge-on galaxies. This galaxy appears edge-on with a straight band of dark star forming gas like a knife dividing the galaxy in half. It is in truth quite faint but shows up well in exposures of over two minutes as shown here.



Mirach's Ghost consists of a 2<sup>nd</sup> magnitude reddish star located in our galaxy at about 200 light years distant. Near it visually is a faint 13<sup>th</sup> magnitude spiral galaxy NGC 404 that is positioned to the upper right of Mirach as seen in the image below. NGC 404 is about 214 million light years from our solar system.



Other galaxies abound within the borders of the Andromeda constellation including three Messier Objects; M31, M32, and M110. M32 and M110 are considered satellite galaxies that orbit the main Galaxy M31.

The first object M32, was resolved into stars by Walter Baade who determined that its stars were about the same brightness as those in M31 thus at a distance of 2.5 million light years from our solar system. M32 is a dwarf elliptical galaxy with a mass of about 3 billion suns that may have interacted with M31 in the past and lost many of its stars in the process.



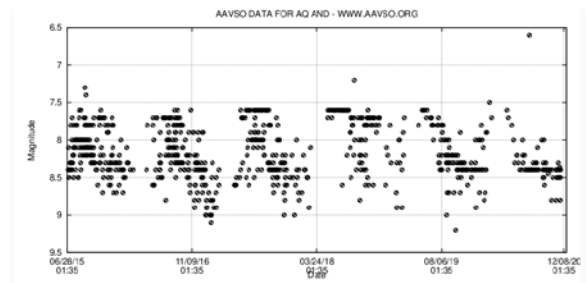
Messier 110 is an elongated elliptical galaxy on the outskirts of the M31 and is about the same distance.



M31, The Great Andromeda Galaxy, is our nearest large neighboring galaxy. It was Edwin Hubble that noticed a special type of variable star within M32 that is known as a Cepheid that enabled him to deduce that this spiral galaxy was not part of our Milky Way but resided far outside of it. This discovery marked the beginning of modern cosmology and helped us understand our place in this vast universe.



Finally if you are into observing variable stars then AQ Andromeda is one that you are probably aware of. It is a red star that varies in brightness from +7.7 to +9.5 over a period of 169 days as shown in the light curve chart below from the AAVSO.



Andromeda of course holds many other treasures but this is a small sampling of what you may find there if you take the time to look.

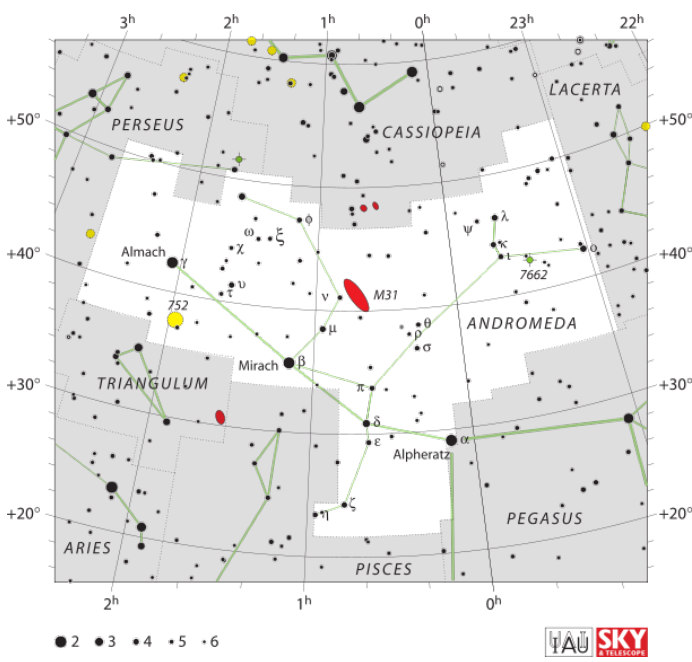
Note: All of the images in this article were taken by me using various telescopes and cameras.

# Spotlight on Andromeda, the Princess

By Dale Hooper

Andromeda, the Princess is one of the major mythological characters found in the northern skies in autumn. It is the home to what is typically the most distant object that can be observed with unaided eyesight, the Andromeda Galaxy, Messier 31 (2.5 million light-years distant). It also holds several other decent galaxies including (the rather elusive) NGC 891 and NGC 404 (Mirach's Ghost) and a very beautiful planetary nebula, the Blue Snowball (NGC 7662). The Andromeda Galaxy and its associated companion galaxies are great to observe with unaided eyes, binoculars, telescopes and are great to image. It can encompass many different observing projects. Since it is so large (approximately 3 degrees by 1 degree) it is easier to see the extent of the galaxy using binoculars. Amateurs with large telescopes and astrophotographers can even observe globular clusters in M31. See for example, <http://www.astronomy-mall.com/Adventures.In.Deep.Space/gcm31.htm>

Objects which rank at least three stars in *The Night Sky Observer's Guide* (Andromeda is in Volume 1) have been included. As usual, the table is organized according to increasing Right Ascension values.



IAU and Sky & Tel - Roger Sinnott & Rick Fienberg

Messier 110 (Galaxy mag 8.1)	00h40.4m	+41°41'
Messier 32 (Galaxy mag 8.1)	00h42.7m	+40°52'
Messier 31 (Galaxy mag 3.4)	00h42.7m	+41°16'
NGC 252 (Galaxy mag 12.3)	00h48.0m	+27°38'
36 Andromedae (Double Star)	00h55.0m	+23°38'
NGC 404 (Galaxy mag 10.3)	01h09.4m	+35°43'
NGC 752 (Open cluster)	01h57.8m	+37°41'
γ Andromedae (Multiple star)	02h03.9m	+42°19'
NGC 891 (Galaxy mag 9.9)	02h22.6m	+42°21'
NGC 7640 (Galaxy mag 11.3)	23h22.1m	+40°51'
NGC 7662 (Planetary nebula)	23h25.9m	+42°33'
NGC 7686 (Open cluster)	23h30.2m	+49°08'
Σ 3050 (Double star)	23h59.5m	+33°43'

## CVAS Utah Skies radio program opening

by Tom Westre

During the past two years Blaine Dickey and I have been writing weekly astronomy scripts, recording them and submitting them to Utah Public Radio. This has given us a chance to not only promote our society, but to educate the UPR listeners in astronomy.

Blaine has decided to call it quits. His last program is December 8<sup>th</sup>. I am scheduled to broadcast the last 3 programs for the rest of December (15, 22, and 29). Beginning January, we will need a replacement for Blaine. Our program on UPR is called Utah Skies. It is broadcast weekly on Tuesday afternoon at 4:48 and lasts 2 minutes. We write our script and record it on our app and send it in to the program manager at UPR a day or so ahead of the scheduled program date.

We split the month up so each of us is only responsible for two programs a month. This has worked out well. Each of us picks our own topics. We also send in the completed script and an image to match the topic. After the program airs UPR staff put the recording, script, and image on their website permanently. We give credit to the club by announcing the club name and website.

If more than one wants to participate, we can work that out. Another option may consist of someone writing a script and I will be glad to record it. If you have any interest or questions in keeping Utah Skies on the air, please give me a call at 435-787-6380 sometime in the next week.

Object	R.A.	Dec.
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## 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

- Jan 01 - 220th Anniversary (1801), [Giuseppe Piazzi's](#) Discovery of the [First Asteroid \(Ceres\)](#)
- Jan 02 - [Earth At Perihelion](#) (0.983 AU From Sun)
- Jan 03 - 525th Anniversary (1496), [Leonardo da Vinci](#) [Unsuccessfully Tests a Flying Machine](#)
- Jan 04 - 240th Anniversary (1781), [Charles Messier's](#) Discovery of [M80 \(Globular Cluster in Scorpio\)](#)
- Jan 06 - 170th Anniversary (1851), [Leon Foucault's Pendulum Experiment Demonstrates Earth's Rotation](#)
- Jan 09 - [Mercury Passes 1.7 Degrees From Saturn](#)
- Jan 11 - [Mercury Passes 1.5 Degrees From Jupiter](#)
- Jan 17 - 235th Anniversary (1786), [Pierre Mechain's](#) Discovery of Comet 2P/Encke
- Jan 23 - [Asteroid 2675 Tolkien](#) Closest Approach To Earth (1.317 AU)
- Jan 23 - 35th Anniversary (1986), [Brad Smith's](#) Discovery of Uranus
- Jan 24 - [Mercury](#) At Its Greatest Eastern [Elongation](#) (19 Degrees)
- (1986), [Voyager 2](#), Uranus Flyby
- Jan 25 - [Joseph Lagrange's](#) 285th Birthday (1736)
- Jan 28 - 35th Anniversary (1986), [Space Shuttle Challenger Accident](#)
- Jan 28 - [Johannes Hevelius'](#) 410th Birthday (1611)
- Jan 30 - 25th Anniversary (1996), [Yuji Hyakutake's](#) Discovery of the [Great Comet of 1996](#)
- Jan 31 - 50th Anniversary (1971), [Apollo 14](#) Launch (3rd Manned Moon Landing)

## 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.

\_\_\_\_\_

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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:

**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)