

# Skylights

Newsletter of the Astronomical Society of Northern New England



MAY 2021



Member of NASA's  
Night Sky Network



Astronomical League

## ASNNE MISSION

ASNNE is an incorporated, non-profit, scientific and educational organization with three primary goals:

- 1) To have fun sharing our knowledge and interest with others.
- 2) To provide basic education in astronomy and related sciences to all who are interested.
- 3) To promote the science of Astronomy.

## What's Up In May

By Bernie Reim

The month of May is named after the Greek goddess of the earth, Maia. May Day or the Gaelic festival of Beltane marks the halfway point between the spring equinox and the summer solstice.

Our landscape is now transforming itself once again into myriad and subtle hues of green as our hemisphere of the earth is slowly and continually tilting more and more towards the sun and our days are getting warmer and longer as a result.

The loons have returned to our lakes and many other birds have returned from the south to sing their wonderful songs for us once again. Listening to the piercing yet plaintive calls of the loons was a great joy as they could instantly transform the mood around any lake. Loons have been on Earth for at least 20 million years, making them the oldest and most primitive living bird.

The spring peepers and other frogs are singing up a storm in the evenings, making a strong audible contribution to the natural symphony which is the earth in response to the stars above and the sun which gives everything life. Spring is a time of celebration as life returns once again in its many forms, creating a cosmic harmony all around us.

There are many interesting highlights to watch for this month. They include a very close conjunction of Mercury and Venus, three planets in the evening sky including Mars, the asteroid Vesta in Leo, another comet Atlas near the Big Dipper, a good meteor shower, the Eta Aquarids on May 5, and even a total lunar eclipse on May 26, which we will not be able to see any part of from the Northeast. All the rest of this country will get at least a partial eclipse.

Watch as Mercury returns to our evening sky on the first day of May near the Pleiades star cluster in Taurus. Venus will be directly below Mercury. Our first planet from the sun will reach greatest eastern elongation on May 17, marking its best evening appearance for this year. Then keep watching as they both get higher and brighter throughout the month low in the western sky half an hour after sunset. They will be at their closest, less than half a degree

apart, on Friday, May 28.

Through a telescope you will see that Mercury is 35 percent lit, like a miniature waxing crescent moon. Venus is nearly full now since it is just past superior conjunction with the sun and farther away from us than usual.

The slender waxing crescent moon along with its reflected earthshine will be just one degree east of Venus on May 12<sup>th</sup>. Then keep watching as it passes by Mercury the next evening and Mars on the 16<sup>th</sup>.

Mars is now in Gemini and is continuing its direct eastward motion through our sky as it has been doing all this year. It still sets just before midnight as it tracks through the sky at the rate of one constellation per month, matching our revolution around the sun. Try to keep up with all the latest from the Perseverance Rover and the Ingenuity drone as we keep exploring this planet that we may well be walking around on within just 7 more years.

Saturn now rises around 2:30 a.m. in Capricorn. Then Jupiter rises 45 minutes later in Aquarius, about 15 degrees to the east of Saturn.

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## **What's Up "Continued from page 1"**

The pair was just one tenth of a degree apart on the winter solstice last year. Saturn will start its retrograde or westward motion back towards Jupiter on the 23<sup>rd</sup>.

There are two asteroids that you can see in Leo now with just a pair of binoculars. They are Vesta, our brightest and second largest asteroid at 330 miles across and Amphitrite at 120 miles across, our fifth largest asteroid. Our four largest asteroids make up half the mass of all of our more than one million identified asteroids in the belt between Mars and Jupiter.

This will be your last chance to see C/2020 R4 (ATLAS). This comet was also discovered by the ATLAS telescopes in Hawaii. You will need a good telescope to see it will only get to 9<sup>th</sup> or 10<sup>th</sup> magnitude, or about 40 times fainter than anything you could see without optical aid. This comet will not return to our skies for another 1000 years. Next month we will have a brighter comet, named 7P/Pons-Winnecke.

The Eta Aquarid Meteor shower will peak on the evening of Wednesday May 5 and the next morning. The moon will be waning crescent, so it will not rise until after midnight. You can expect up to 50 meteors per hour from a very dark sky site. You will be seeing tiny sand grain-sized dust particles of Halley's Comet burn up 70 miles above us as you watch these meteors. They will all appear to come out of Aquarius, which rises 3 hours before dawn. This famous comet also causes the Orionid Meteor shower every October 21 as we pass through its debris trail twice every year.

We are in an eclipse season once again. The full moon this month on the 26<sup>th</sup> will pass right through our shadow, creating a total lunar eclipse, but it will only be visible in its entirety from our west coast. Then there will be an annular solar eclipse two weeks after that over parts of Russia, Greenland, and Canada. We will get to see a partially eclipsed sun from that one right here in Maine on June 10, which should prepare us for the total solar eclipse that will pass right through Maine less than 3 years later, on April 8 of 2024. I well remember seeing the last one over Idaho near Yellowstone and the Grand Tetons on August 21 of 2017. It was great experience worth every effort you need to make.

May 3. The moon passes 4 degrees south of Saturn this morning. Last quarter moon is at 3:50 p.m. EDT.

May 4. The moon passes 5 degrees south of Jupiter this morning.

May 5. The Eta Aquarid Meteor shower peaks. On this day in 1961 Alan Shepard became the first American in space. He did not orbit the earth. That was first done on April 12 of that year by the Russian Yuri Gagarin.

May 11. New moon is at 3:00 p.m.

May 12. On this day in 1930 the Adler Planetarium in Chicago opened and became the first planetarium in this country. I stopped in there on my way out to the eclipse in 2017. It is well worth visiting if you are in the area. The moon passes near Venus this evening.

May 13. The moon passes near Mercury this evening.

May 14. On this day in 1973 our first orbiting space station, Skylab, was launched. It came down just a few years later because of strong solar winds creating more drag on it than expected.

May 16. The moon passes near Mars this evening.

May 17. Mercury is at greatest eastern elongation. Venus passes 6 degrees north of Aldebaran in Taurus this evening.

May 19. First quarter moon is at 3:13 p.m.

May 23. Saturn starts its retrograde motion this afternoon.

May 25. The moon is at perigee at 222,023 miles from earth this evening.

May 26. Full moon is at 7:14 a.m. This is also called the Flower, Planting, Milk, or Frog Moon. This will also be another super moon like last month because the moon is within one day of its perigee. So it will appear slightly larger than usual when it rises. It always appears huge right on the horizon anyway because of the "moon illusion". You will get a nice red and orange color on the moon when it first rises just for a few minutes since you are looking through so much of our atmosphere. So we won't be able to see the total lunar eclipse today, but we will be able to see some of that nice color right when it rises at sunset and once again when it sets at sunrise.

May 28. The first primates, Able and Baker, were launched into space on this day in 1959.

May 29. On this day in 1919 Sir Arthur Eddington, a British astronomer, took some pictures of a total solar eclipse over Africa that proved Einstein's General Theory of Relativity correct. He showed that the gravitational field of the sun would bend the light from a star covered by the sun during that eclipse by 1.75 seconds of arc, or twice as much as Newton predicted it would at 0.87 seconds of arc.

Moon Phases

**May 3**  
Last Quarter

**May 11**  
New

**May 19**  
First Quarter

**May 26**  
Full

Moon Data

**May 3**  
Saturn 4° north  
of Moon

**May 4**  
Jupiter 5° north  
of Moon

**May 6**  
Neptune 4° north  
of Moon

**May 11**  
Moon at apogee

**May 12**  
Venus 0.7° north  
of Moon

**May 13**  
mercury 2° north  
of Moon

**May 16**  
Mars 1.5° south  
of Moon

**May 25**  
Moon at perigee

## OBSERVER'S CHALLENGE\* – May, 2021

by Glenn Chaple

### Messier 3 – Globular Cluster in Canes Venatici (Mag: 6.2, Size: 18")

After a steady diet of faint Observer's Challenges in recent months, we can relax our eyes with the bright globular cluster Messier 3. At a magnitude of 6.2, it ranks among the 10 brightest of the roughly 250 globular clusters that inhabit our galaxy. It can be glimpsed with the unaided eye from remote dark-sky locations and is easily spotted in binoculars from suburban areas.

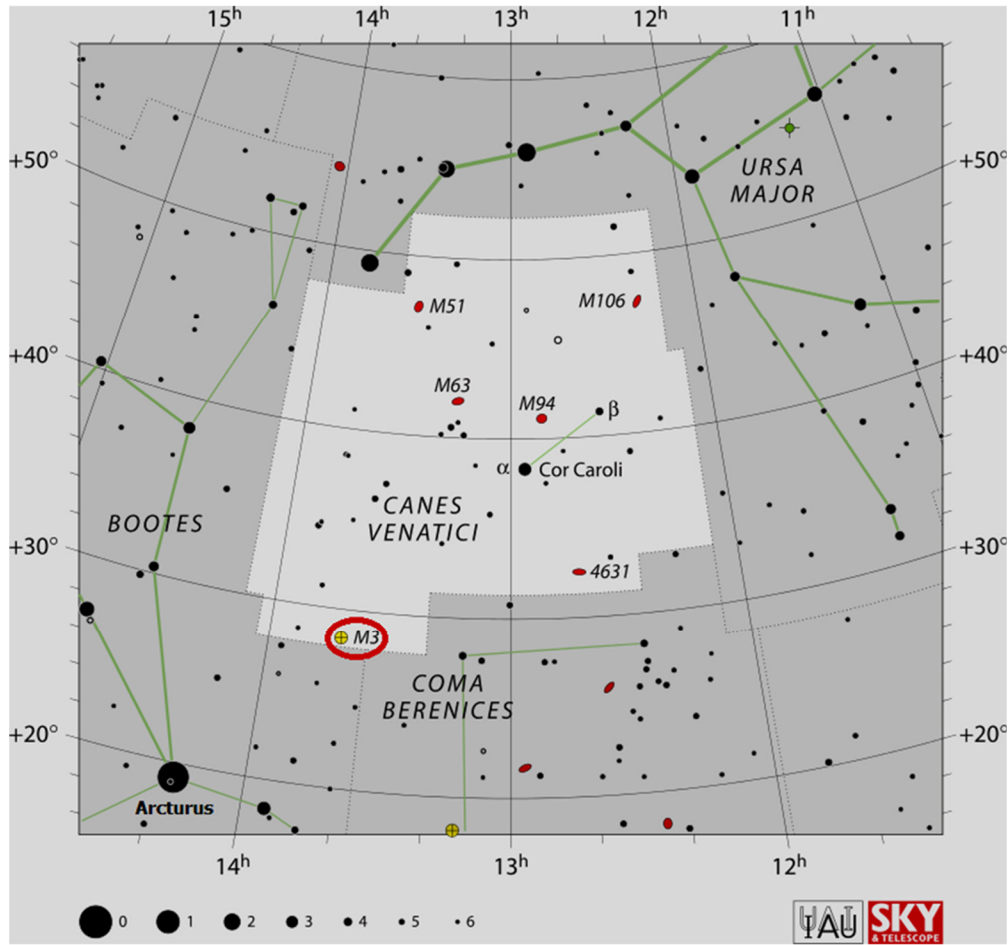
M3 was discovered by Charles Messier on May 3, 1764. To him, it appeared as a nebula without stars. Twenty years later, William Herschel resolved it into a stellar mass.

Finding M3 is one of its biggest challenges. It lies in a star-poor region of the constellation Canes Venatici. Owners of GoTo scopes can dial in its coordinates - RA 13h42.2m, DEC +28°22.6'. Star-hoppers will find M3 by aiming their telescopes towards an area roughly midway between Arcturus and Cor Caroli (alpha [α] Canum Venaticorum) and then slowly scanning the area with low power until a hazy circular patch of light comes into view.

A switch to high power brings M3 to life, especially in scopes with apertures of 6 to 8 inches and above. Smaller instruments at high magnification will hint at its stellar nature. Amateur Telescope Makers of Boston President Rich Nugent reports a grainy appearance when viewing M3 with a 5-inch refractor. Through a 4-inch rich-field scope at high magnification, I suspected a hint of graininess.

M3 lies about 33,000 light years away. Its estimated half million stars occupy a sphere 180 light years across.

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[www.messier-objects.com](http://www.messier-objects.com)

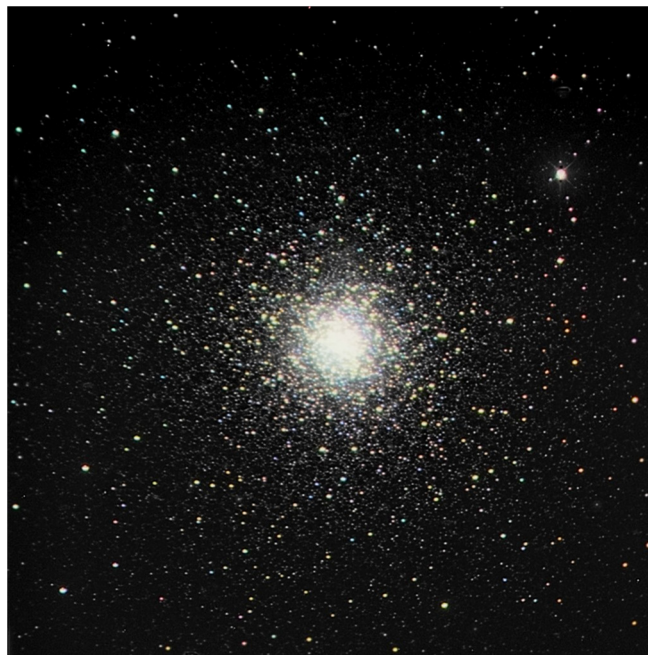


Image by Mario Motta (ATMoB) Taken with 32-inch telescope, SBIG STL1001E Camera, RGB filters. North is up.

## Principal Meteor Showers in 2021

**January 4**  
Quadrantids

**April 22**  
Lyrids

**May 6**  
Eta Aquarids

**July 30**  
Delta Aquarids

**August 12**  
Perseids

**October 9**  
Draconid

**October 21**  
Orionids

**November 9**  
Taurids

**November 18**  
Leonids

**November 26**  
Andromedids

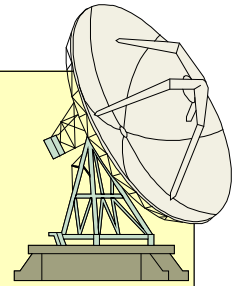
**December 14**  
Geminids

**December 22**  
Ursids

*Note: Dates are  
for maximum*

## Got any News?

### Skylights Welcomes Your Input.



*Here are some suggestions:*

***Book reviews -- Items for sale -- New equipment --  
Ramblings -- Star parties -- Observing -- Photos.***

**Our Club has Merchandise for Sale at: [www.cafepress.com/asnne](http://www.cafepress.com/asnne)**



***ALL money raised goes to our operating fund.  
Any design can be put on any item.***

**Contact David Bianchi [dadsnorlax@yahoo.com](mailto:dadsnorlax@yahoo.com) for further details.**

### Benefits of Membership

- Attend our monthly meetings and club star parties
  - Our Monthly Newsletter: *Skylights*
  - Discounts on *Sky & Telescope*. and *Astronomy* magazine subscriptions
  - Automatic subscription to the Astronomical League's quarterly newsletter, *The Reflector*
  - With proper training, access to the equipment at ASNNE's Talmage Observatory at Starfield.
  - By special arrangement, free admission to the Southworth Planetarium at USM in Portland
- Enjoy sharing your interest and have fun learning about Astronomy!



**This article is distributed by NASA Night Sky Network**

The Night Sky Network program supports astronomy clubs across the USA dedicated to astronomy outreach. Visit [nightsky.jpl.nasa.org](https://nightsky.jpl.nasa.org) to find local clubs, events, and more!

## Virgo's Galactic Harvest

By David Prosper

May is a good month for fans of galaxies, since the constellation Virgo is up after sunset and for most of the night, following Leo across the night sky. Featured in some ancient societies as a goddess of agriculture and fertility, Virgo offers a bounty of galaxies as its celestial harvest for curious stargazers and professional astronomers alike.

Virgo is the second-largest constellation and largest in the Zodiac, and easily spotted once you know how to spot Spica, its brightest star. How can you find it? Look to the North and start with the Big Dipper! Follow the general curve of the Dipper's handle away from its "ladle" and towards the bright orange-red star Arcturus, in Boötes – and from there continue straight until you meet the next bright star, Spica! This particular star-hopping trick is summed up by the famous phrase, "arc to Arcturus, and spike to Spica."

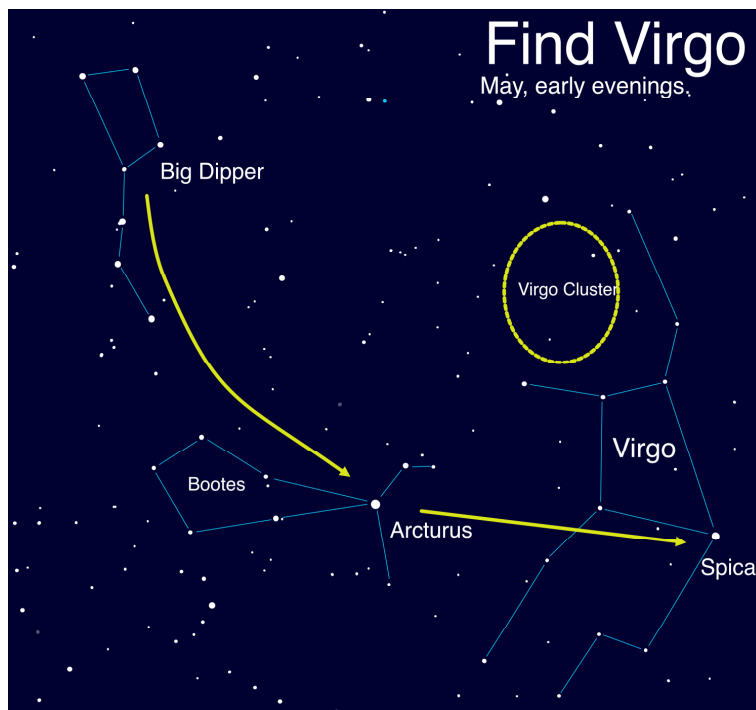
This large constellation is home to the Virgo Cluster, a massive group of galaxies. While the individual stars in Virgo are a part of our own galaxy, known as the Milky Way, the Virgo Cluster's members exist far beyond our own galaxy's borders. Teeming with around 2,000 known members, this massive group of galaxies are all gravitationally bound to each other, and are themselves members of the even larger Virgo Supercluster of galaxies, a sort of "super-group" made up of groups of galaxies. Our own Milky Way is a member of the "Local Group" of galaxies, which in turn is also a member of the Virgo Supercluster! In a sense, when we gaze upon the galaxies of the Virgo Cluster, we are looking at some of our most distant cosmic neighbors. At an average distance of over 65 million light years away, the light from these galaxies first started towards our planet when the dinosaurs were enjoying their last moments as Earth's dominant land animals! Dark clear skies and a telescope with a mirror of six inches or more will reveal many of the cluster's brightest and largest members, and it lends itself well to stunning astrophotos.

Virgo is naturally host to numerous studies of galaxies and cosmological research, which have revealed much about the structure of our universe and the evolution of stars and galaxies. The "Universe of Galaxies" activity can help you visualize the scale of the universe, starting with our home in the Milky Way Galaxy before heading out to the Local Group, Virgo Cluster and well beyond! You can find it at [bit.ly/universeofgalaxies](https://bit.ly/universeofgalaxies). You can further explore the science of galaxies across the Universe, along with the latest discoveries and mission news, at [nasa.gov](https://nasa.gov).

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*The first image of a black hole's event horizon was taken in the center of one of the most prominent galaxies in Virgo, M87! This follow up image, created by further study of the EHT data, reveals polarization in the radiation around the black hole. Mapping the polarization unveils new insights into how matter flows around and into the black hole - and even hints at how some matter escapes! More details: [apod.nasa.gov/apod/ap210331.html](https://apod.nasa.gov/apod/ap210331.html)*



Find Virgo by “arcing to Arcturus, then spiking on to Spica.” Please note that in this illustration, the location of the Virgo Cluster is approximate - the borders are not exact.

*“Continued on page 8 ”*

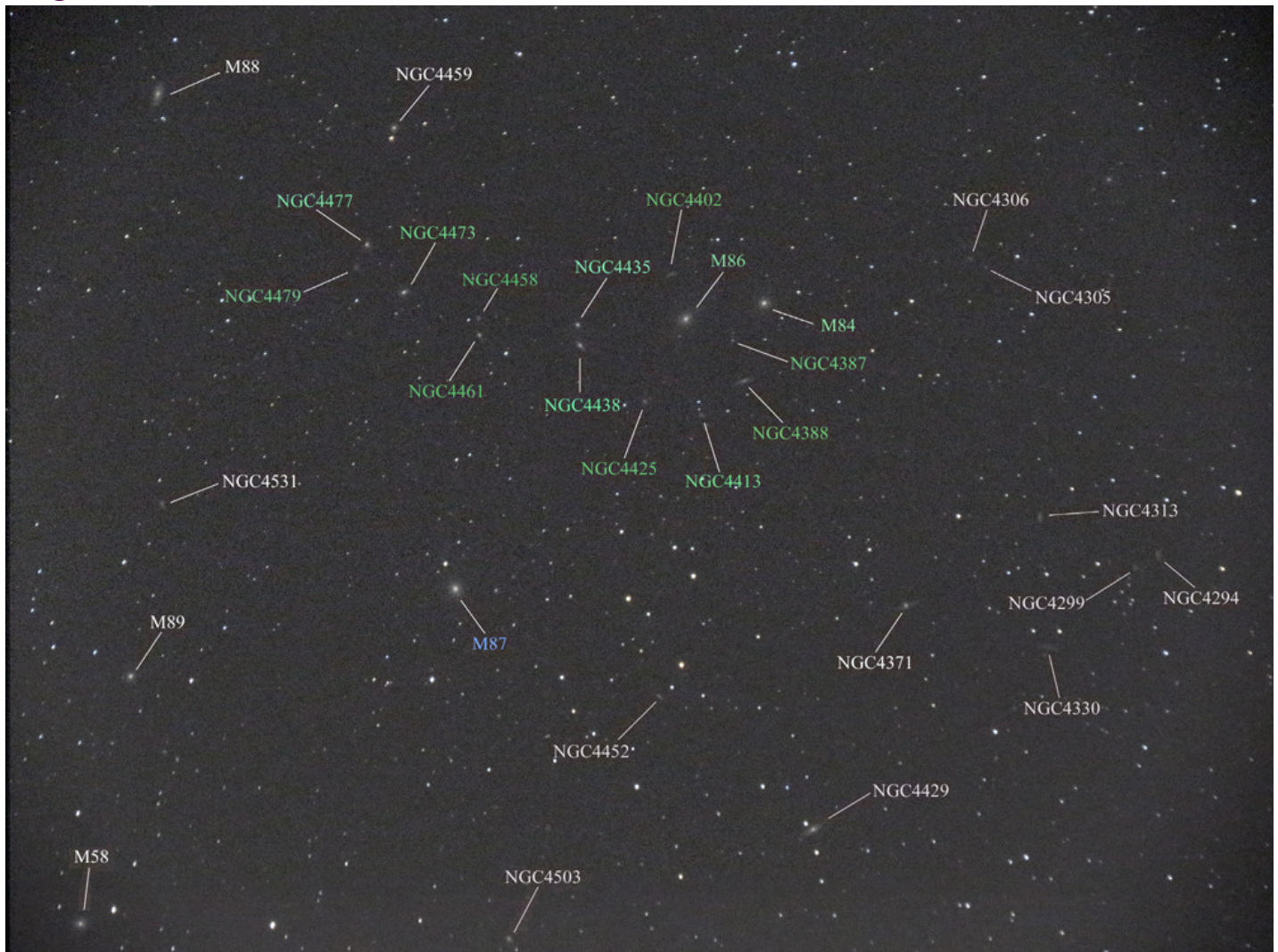
## Virgo Cluster of Galaxies

Submitted by Paul Kursewicz

Taken with a Canon Powershot SX50 HS Camera

Virgo Cluster & M87

RAW mode, f/5.6, 450mm, ISO 800, 10 x 2 min, 4-25-19



Two years ago I took this picture of the Virgo Cluster of Galaxies. It only reveals 30 of the Virgo Cluster's 2,000 members. At the Cluster's center is **M87** (labeled here in blue). It is a supergiant elliptical galaxy, one of the most massive galaxies in the local Universe. Not too long ago its supermassive black hole was directly imaged (for the first time) using data collected in 2017 by the Event Horizon Telescope, with a final, processed image released on April 10, 2019. Also near the heart of the Virgo Cluster is a string of galaxies known as **Markarian's Chain** (labeled here in green). When viewed from Earth, the galaxies lie along a smoothly curved line.



## Point and Shoot Camera Astroimaging (no telescope)

### Canon Powershot SX50 HS

*Image & write-up submitted by Paul Kursewicz*

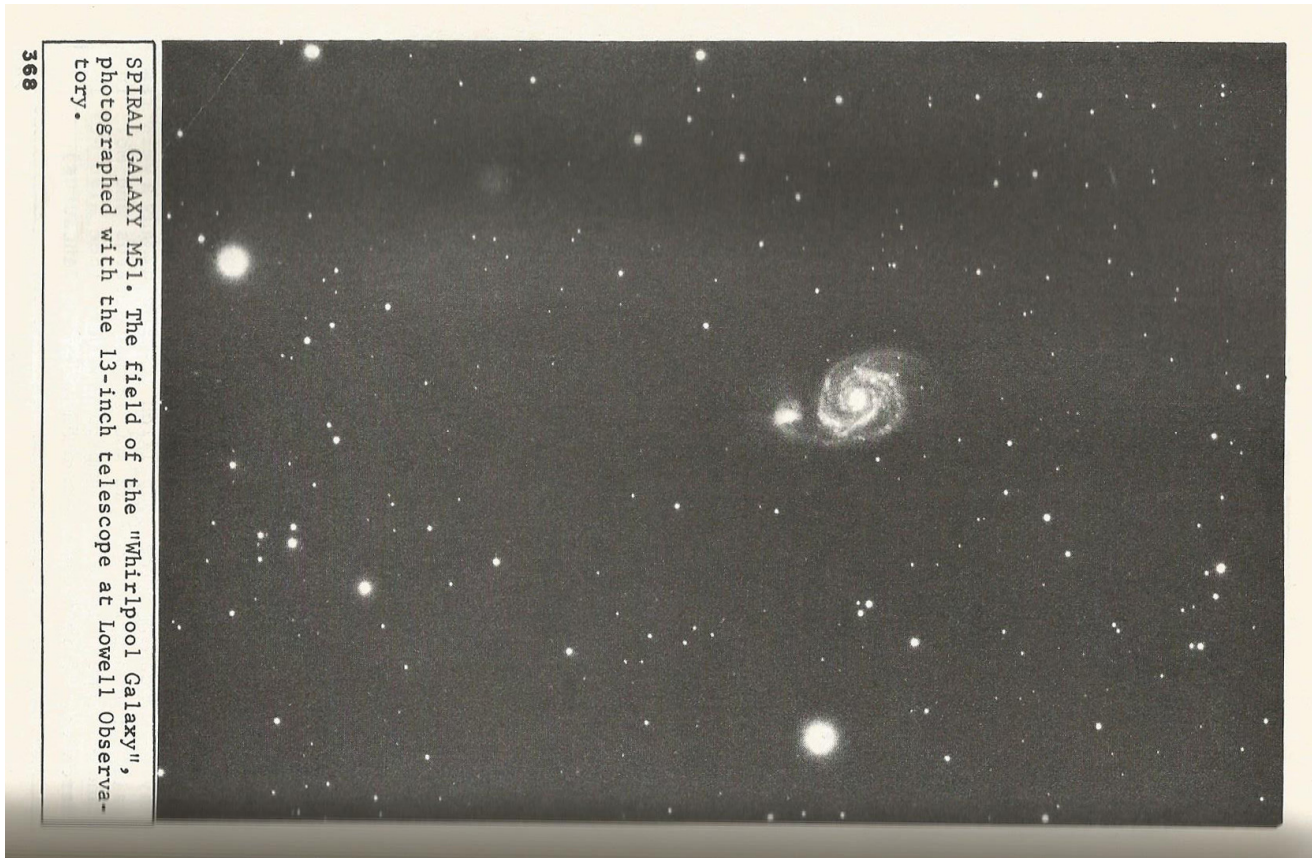
**Whirlpool Galaxy (M51) & NGC 5195    Specs: RAW mode, FL 1200mm, ISO 2000, 16 x 2 min, 4-3-21**



This is a recent photo of M51 and its companion galaxy NGC 5195. It's located in the constellation Canes Venatici and can be seen in a pair of binoculars in dark skies. M51 was the first galaxy to be classified as a spiral galaxy. Its distance is estimated to be 31 million ly away with an estimated diameter of 76,000 ly. The Whirlpool and its companion dwarf galaxy are indeed interacting. Sometimes the designation M51 is used to refer to the pair of galaxies. Overall the galaxy is about 43% the size of the Milky Way. M51's companion galaxy may have passed through the main disk of M51 about 500 to 600 million years ago. In this proposed scenario, NGC 5195 came from behind M51 through the disk towards the observer and made another disk crossing as recently as 50 to 100 million years ago until it is where we observe it to be now, slightly behind M51. Three supernovae have been observed in the Whirlpool Galaxy: In 1994, 2005 and 2011. In 1845, William Parsons employing a 72-inch reflecting telescope at Birr Castle, Ireland, found that M51 possessed a spiral structure, first "nebula" to be known to have one. These so called "spiral nebulae" were not recognized as galaxies until Edwin Hubble was able to observe Cepheid variables stars in some of these spiral nebulae, which provided evidence that they were so far away that they must be entirely separate galaxies. Charles Messier discovered M51 in 1773.

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**M51 taken with the 13-inch telescope at Lowell Observatory.**



This is a picture that I copied from "Burnham's Celestial Handbook" copyright 1978. My "point & shoot camera image" looks remarkably like the one taken at Lowell Observatory. Burnham has the galaxy located about 3-1/2 degrees SW from Eta Ursa Majoris, the end star in the handle of the Big Dipper. Back when this picture was taken it was thought that M51 was a "spiral nebula," a new solar system in the process of formation, not a galaxy. M51 is a Sc type galaxy of 8th magnitude visually, and about 10 arc-minutes in apparent diameter. The spiral arms can be traced for about 1-1/2 turns.

## [Astronomical Society of Northern New England \(ASNNE\) Online Meeting Notes of 2 April 2021](#)

### [Submitted by Carl Gurtman](#)

**Record Note:** Because of the coronavirus crisis (COVID-19), the Regular Meeting of 2 April 2021, was not held in person. Rather, the meeting was held via the teleconferencing application, "Zoom". Again, Ian Durham's Zoom account was the host of the meeting, (Thanks, Ian!) but Ian was not present. (He was still on Mt. Chocura!) The following Notes are provided. They are not meant to take the place of regular Minutes, which were not taken, but rather to serve as documentation.

### **Zoom Teleconferencing Meetings of Friday, 2 April 2021**

**Business Meeting:** There was a no business Meeting. We started the Regular Meeting about 7:55 pm, spending the time from 7:30 pm to 7:55 pm in general conversation.

**Regular Meeting:** There were 11 participants via Zoom.

### **Items Related to ASNNE Business:**

Although there was no formal Business Meeting, at the start of our Regular Meeting, we first addressed items related to ASNNE Business.

**Officer Rotation:** There is still no real progress on a replacement for Ron. Dave is handling the e-mail addressed to ASNNE well, and more importantly, seems to enjoy doing it. While having a woman as our next President is a fine goal, we will most probably be happy to accept any competent volunteer.

**Recovering from COVID:** While prudence dictates that we have our ASNNE Meetings, as Zoom Meetings, a phased return to normalcy is in the works in Maine. Meeting restrictions are being loosened, and the ASNNE population, on the older end of the age spectrum, is actively engaged in getting vaccinated. From our last Meeting, we had tentatively agreed to hold our ASNNE May Meeting, in person, at the Talmage Observatory at Starfield. This month, we decided to defer that person-to-person Meeting a month. We could formally open the Observatory after the worst of the pandemic, dedicate & rename the Talmage Observatory at Starfield then, with Peter's family in attendance; hold Starfest, and a Star Party. So, plan on the first Friday in June, 4 June, to be at the Talmage Observatory at Starfield.

**"What's Up?":** Bernie gave his usual thorough, comprehensive, and complete discussion of what's in store for us in the skies of April.

Receiving its name from the Latin for "to open", that's very appropriate as spring comes to Maine. April's evening skies this year showcase the planets, as Mars, Venus, Mercury, Saturn, and Jupiter, are all visible, even if you have to stay up very late to see Jupiter.

On 22 April, Earth Day, the meteor shower the Lyrids are visible.

Bernie covered the names of this month's moon, and what happened on this day in . . . including the famous astronomers & scientists born in April.

**Astroshorts:** There were only a few Astroshorts. There had not been a lot of observing in March.

We will hold our next Meeting, via Zoom, on Friday, 7 May.

Respectfully submitted,

Carl Gurtman

## Club Meeting & Star Party Dates

Date	Subject	Location
<u>May 7</u>	<p><b><u>ASNNE Club Meeting:</u></b></p> <p><b>Our May Club meeting at The New School Has been cancelled due to the Coronavirus.</b></p> <p><b>In all likelihood the plan for the May meeting is to have our Club Meeting while staying at home by using ZOOM.</b></p> <p>So, a computer or a phone will be required. Ian Durham will likely organize all of this. And as we get closer to the 7th, Ian will post a connection link to join Zoom.</p> <p><b><u>Topic:</u> TBD.</b> Bernie Reim will do "What's Up." Astro Shorts</p>	<u>The New School, Kennebunk, Me.</u>
<u>Last Month</u>	<p>Last month's Zoom meeting began with some Business Meeting items. Bernie Reim did his "What's Up." Club members also participated in Astro Shorts. There was no Keynote speaker. Our June meeting will Probably be at Talmage Observatory at Starfield.</p>	
<u>TBD</u>	<b>Club/Public Star Party:</b> TBD	Talmage Observatory at Starfield West Kennebunk, Me.

### Directions to ASNNE event locations

**Directions to The New School in Kennebunk** [38 York Street (Rt1) Kennebunk, ME]

For directions to The New School you can use this link to the ASNNE NSN page and then click on "get directions" from the meeting location. Enter your starting location to generate a road map with complete directions. It works great. [http://nightsky.jpl.nasa.gov/club-view.cfm?Club\\_ID=137](http://nightsky.jpl.nasa.gov/club-view.cfm?Club_ID=137)

**Directions to Talmage Observatory at Starfield** [Alewife Road, Kennebunk, ME]

**From North:**

Get off turnpike at exit 32, (Biddeford) turn right on Rt 111. Go 5 miles and turn left on Rt 35. Go 2 miles on Rt 35 over Kennebunk River to very sharp 90 degree left turn. The entrance to the Starfield Observatory site is at the telephone pole at the beginning of the large field on the left. Look for the ASNNE sign on the pole.

**From South:**

Get off the turnpike at exit 25 in Kennebunk. After toll both turn right on Rt 35. Go up over the turnpike and immediately turn right on Rt 35. About 4 miles along you will crest a hill and see a large field on your right. Continue until you reach the end of the field. Turn right into the Starfield Observatory site at the last telephone pole along the field. Look for the ASNNE sign on the pole. If you come to a very sharp 90 degree right turn you have just passed the field.

To join **ASNNE**, please fill out the below membership form. *Checks should be made payable to: Astronomical Society of Northern New England (A.S.N.N.E).* For more details, please visit our website: <http://www.asnne.org>



Astronomical Society of Northern New England  
 P.O. Box 1338  
 Kennebunk, ME 04043-1338

**2021 Membership Registration Form**

(Print, fill out and mail to address above)

Name(s for family): \_\_\_\_\_

Address: \_\_\_\_\_

City/State: \_\_\_\_\_ Zip code: \_\_\_\_\_

Telephone # \_\_\_\_\_

E-mail: \_\_\_\_\_

Membership (check one):

Individual \$35 \_\_\_\_\_ Family \$ 40 \_\_\_\_\_ Student under 21 years of age \$10 \_\_\_\_\_ Donation \_\_\_\_\_

Total Enclosed \_\_\_\_\_

Tell us about yourself:

1. Experience level: Beginner \_\_\_\_\_ Some Experience \_\_\_\_\_ Advanced \_\_\_\_\_

2. Do you own any equipment? (Y/N) And if so, what types?  
 \_\_\_\_\_

3. Do you have any special interests in Astronomy?  
 \_\_\_\_\_

4. What do you hope to gain by joining ASNNE?  
 \_\_\_\_\_

5. How could ASNNE best help you pursue your interest in Astronomy?  
 \_\_\_\_\_

6. ASNNE's principal mission is public education. We hold many star parties for schools and the general public for which we need volunteers for a variety of tasks, from operating telescopes to registering guests to parking cars. Would you be interested in helping?

Yes \_\_\_\_\_ No \_\_\_\_\_

7. ASNNE maintains a members-only section of its web site for names, addresses and interests of members as a way for members to contact each other. Your information will not be used for any other purpose. Can we add your information to that portion of our web site?

Yes \_\_\_\_\_ No \_\_\_\_\_

