



<http://www.gazers.org>

Penobscot Valley Star Gazers

An Astronomical Society of Central Maine

There's beauty in the break of day;/ There's glory in the noon-tide ray;
There's sweetness in the twilight shades;/ Magnificence in night.

~John Bowring



May 2025

May Election Meeting

The May 2025 meeting of the PVSG will be held at John Bapst Memorial High School on Monday the 12th at 6:30 pm. Zoom may be available. (Zoom meeting ID 862 9984 6478 Password: PVSG.) This month is election month for the offices of president and vice-president.

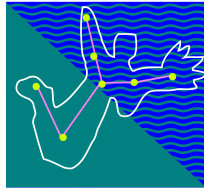
Thanks for last month's program go to Shawn for hosting the meeting at the Versant Astronomy Center.



PVSG Monthly Meeting Minutes April 14, 2025

Note: Some of the information provided in these minutes are recorded out of order to allow for organizing them according to their normal meeting section.

The April minutes were unavailable.



Observe The Sky This Month

Some Selected Objects
May 2025

General sky comments – This month is the time to easily observe the largest number of Messier objects. If you are looking to observe all the Messier objects this the place to start. Most are observable with a binocular and it easier to keep track of where you are observing with the wider field of view. The full Moon for May is the Full Flower Moon. Other given names are egg laying, planting, milk, mothers', bright, hair, and grass Moons. Anyone observe the Eta Aquariids meteor shower? Early risers had the best opportunity on the morning of the 5th. They are still active until the 28th. In a few places in the World the count was higher than expected as those areas dipped further into the detritus trail of the comet Halley.

The Moon and Planets this month – First quarter moon was on Sunday the 4th and the full Moon was on Monday the 12th the night of the PVSG meeting. Last quarter Moon is on Tuesday the 20th and new Moon (lunation 1267) is on Monday the 26th. Mercury is in the morning sky and continues to brighten for the first half of the month as it becomes more gibbous. During the second half it comes closer to the Sun and reaches superior conjunction with the Sun on the 30th. Venus is prominent in the morning sky and reaches greatest elongation from the Sun on the 30th. Mars passes from Cancer to Leo late in May. It drops below mag 1.0 during May and becomes less interesting to observers. Jupiter is still visible in evening twilight. It becomes more difficult to observe until late in the month it is lost

in evening twilight. Saturn moved from Aquarius to Pisces early in May in the morning sky. The rings will be very difficult to observe along with the planet. Uranus is too close to the Sun to be observed. Neptune is in the morning sky in Pisces too close to the Sun to be observed. Pluto is in Sagittarius. On June 1st the bright star south of the crescent Moon is Regulus. The next day is first quarter Moon. On Friday the 5th the star Spica is very close to the first quarter Moon. The PVSG meeting in June will be on the 9th.

Constellations this month – Now is the time to begin the observation of the greatest collection of observable galaxies easily found in the visible sky. We will return to this area of the sky and describe it in more detail later. The North and East side of Ursa Major as promised will be observed. Below Ursa Major are the constellations of Canes Venatici, the Hunting Dogs and its famous alpha star Cor Caroli. Canes Venatici was identified as dogs in medieval times by a mistranslation from the Arabic transcribing of Ptolemy who placed the stars of Canes Venatici in Ursa Major. In 1687 when Hevelius standardized the constellations he settled on a separate constellation of Canes Venatici representing the dogs of Boötes. (We observe Boötes next month.) From Cor Caroli, alpha (α) Canes Venatici there are numerous observable galaxies. 4° NNW is M94 (NGC 4736) a spiral galaxy. 1¼° W of M95 is NGC 4618 (Arp 23) a barred spiral with a strange spiral arm. 1½° slightly north of W is the star beta (β) Canes Venatici. From there go ½° NW to a pair of interacting galaxies, NGC 4490 and NGC 4485 (Arp 269). Go back to Cor Caroli then 3° SE to NGC 5005 a spiral galaxy and only ¾° away SE is NGC 5033 another spiral orientated north to south. 5° NW of Cor Caroli is M63 the Sunflower Galaxy (NGC 5055) a beautiful spiral especially in a large telescope. If you have trouble getting to the Sunflower it is located just north of a grouping of three bright stars. Also in Canes Venatici is M 106. It is found easier from chi (χ) Ursa Major the next bright star below the bottom left corner star Phecda, gamma (γ) Ursa Major in the bowl of the asterism "The Big Dipper". From chi go 5° slightly south of due west to M106 a spiral galaxy. Look below in featured Messier object to find a discussion of the last Messier object in Canes Venatici M51. Continuing in Ursa Major we will first note M109. To find M109 start at the before mentioned Phecda and go less than 1° SW to M109 a beautiful barred spiral galaxy similar to our own barred spiral the

"Milky Way". If you have never seen M40 the double star Messier placed in his catalog of objects not comets this is the time to observe it. Go to the top star of the bowl of "The Big Dipper" Megrez delta (δ) Ursa Major. From this star go 1° NW to the 5th magnitude star 70 Ursa Major then continue $\frac{1}{4}^\circ$ NW to this double star Winnecke4. There is a 12th mag galaxy to the west of M40 but this galaxy was beyond the capability of any telescope Messier had access therefore Messier must have meant this double star to be M40. Next to observe is M101. To find it find the stars at the end of "The Big Dipper" the double stars Mizar and Alcor plus the star at the end of the handle Alkaid. M101 is located at the tip of an equilateral triangle NW of these stars each side $5\frac{1}{2}^\circ$ long. M101 is large but because it is so large it can be difficult to observe. Use low power and a wide field of view. My best view has been with a large binocular. I have also observed NGC 5473 and NGC 5474 side galaxies to M101. NGC 5473 is located $\frac{1}{2}^\circ$ NNW of M101 and NGC 5474 is located $\frac{3}{4}^\circ$ SSE of M101. Coma Berenices is below Canes Venatici a constellation from ancient times known as the asterism representing the tuft on the end of the tail of Leo. It is now named for the hair of Berenices II queen of Ptolemy III Euergetes of Egypt who had sacrificed her hair to Aphrodite for the safe return of her husband from war. It was made a constellation by Tycho Brahe in 1607 and now listed as a modern constellation. The constellation of Virgo was the goddess of agriculture and most other people connected it with agriculture or fertility. Virgo contains the bright star Spica representing a head of grain held by Virgo. Finally we see the tail of Hydra and there is the constellation of Crater on it off to the west. Corvus is hovering above. We observed both of these last month. If you have a low observing sky the northern portion of Centaurus, the Centaur is just visible.

Featured star – Alkaid, eta (η) Ursa Major the end star in the "Big Dipper" is a blue-white type B main sequence star. It is the 40th brightest star in the sky after the sun and considered to be one of the most stable stars. It is also the 3rd brightest star in the constellation of Ursa Major. Alkaid is one of the few stars in Ursa Major not belonging to the Ursa Major moving group one of the closest if not the closest star cluster in our sky. It is located about 80 light years distance.

Featured Constellations – Virgo, contains 11 Messier galaxies, more than any other constellations in the sky. When the 7 Messier galaxies in Coma Berenices are added to those in Virgo this area of the sky becomes the greatest area of Messier galaxies in the sky. Add to this the many additional NGC galaxies almost as easily observed and this area of our own super Virgo Galaxy Cluster is almost overwhelming in its extent. Especially notable is the curved row of galaxies halfway between the Leo Beta (β) star Denebola and the Virgo Epsilon (ϵ) star Vendemiatrix. Start with the bright galaxies M84 and M86 followed to the East by NGC 4435 and NGC 4438 commonly called "The Eyes". Curve upward to the dimmer NGC 4461 and

continue NE across the border of Coma Berenices to NGC 4473 and NGC 4477. Curve on the same path to NGC 4459 to end the chain. This chain of galaxies from M84 to NGC 4459 is known as Markarian's Chain after the Armenian astrophysicist, B. E. Markarian who discovered most of them have a common motion. From NGC 4459 go about one degree NE to M88 (NGC 4501) then go almost straight east another full degree to M91 (NGC 4548). Within the area between Denebola and Vendemiatrix and 10° north and south of this line you can find the great majority of the remaining 15 Messier galaxies in Virgo and Coma Berenices. The exception is M104 "The Sombrero Galaxy" at -11.5° S. Instead of me pointing out all these constellations obtain a good star chart and locate these galaxies for yourself. A star chart is the best way to tell one galaxy from another as there are a lot of elliptical galaxies in this area and most of them look almost identical thus location is almost the only way to tell one from another. If you get lost use Markarian's chain as a home base as it is so distinctive.

Featured Messier object – M51 (NGC 5194/5195) is located by following the curve of the handle of the "Big Dipper" 3.5° past the end star Alkaid, eta (η) Ursa Major. M51 is a large so called "Grand Design Spiral Galaxy". It is bright and much easier to observe than M101 (NGC 5457) in Canis Major which is quite near. M51 was discovered by Charles Messier on October 13, 1773 and added to his list. In 1781 Pierre Méchain discovered the companion galaxy to M51, the galaxy known as NGC 5195. It is now known NGC 5195 is interacting with M51 and lies slightly behind it. Lord William Parsons third Earl of Rosse observed it in 1845 with his 72" leviathan of Parsonstown telescope at Burr Castle and it became the first nebula observed to have a spiral structure although it would be Edwin Hubble finding Cepheid variable stars in M51 to determine it was far away and thus a spiral galaxy. With an 8" telescope or larger you should be able to note the two arms of the galaxy plus some other details. Look at Astronomy Picture of the Day for May 10, 2018 to see a picture of NGC 1531/1532, galaxies much like M51 may look from the side.

Other sky objects of interest – Starting in the north portion of Coma Berenices and proceeding down to the southern part of Virgo other galaxies of note are M64 (Black Eye Galaxy), M85, M90, M89, M87, M60, M59, M58, M49, and M61 plus many other observable galaxies with New General Calendar (NGC) numbers. There are also several bright globular clusters in the two constellations including M53 in Coma Berenices and NGC 5053 only 1° SE of M53.

Dark skies, they are the ones we all desire.
Bill Shackelford