Penobscot Valley Star Gazers

An Astronomical Society of Central Maine

http://www.gazers.org

With verdure the wide earth's overspread, and trees adorned with blooms;
The paths in May bow sweet to tread, mid forests of perfume.

May 2019

Election Meeting

The Moon will be at perigee when the PVSG meets at John Bapst Memorial High School on Monday May 13, 2019 at 6:30 pm. This will be the election meeting for president and vice-president, but beyond that we do not know of any program.

Thanks for last month's program can go to Mother Nature for the snowstorm that canceled the meeting.

Snowed Out Meeting

April 8, 2019

Since the April meeting was canceled due to snow, there are no minutes this month.

Observe the Sky This Month

Some Selected Objects

May 2019

General sky comments – My tulips have bloomed, the lilac is in bloom, and the garden is planted. It must be spring in Oklahoma. If it is not quite spring in Maine believe me it is coming. A couple of weeks ago I was in Amarillo, Texas and the tornado sirens started blowing. It looked like it could rain but all you had to do was look at the weather radar on your smart phone to see the suspected tornado was well north of where I was at the time. Apparently everyone else had looked at their smart phone radar because they also were not worried. It turned out there was no tornado only a rotation in the clouds never forming a tornado but the sirens were tested. It could be real next time. Such is spring in this area.

Presidential elections are in May.
Will Dwight and Scott go or stay?
Perhaps you'd like to join the fray.
Be sure to come and have your say.

Planets this month – New Moon is on Saturday the 4th, first quarter is on Saturday the 11th, full Moon is on Saturday the 18th, and last quarter is on Sunday May 26th. The full Moon this month is considered a blue Moon because it is the third full Moon in a season (in this case spring) with four full Moons. Seasons usually have three full Moons. Mercury is brightening in the morning sky early in the month but is lost in the morning twilight mid month. Venus is low in the morning sky at mag. -3.18 becoming closer to the Sun each day. Mars is coming closer to the Sun in the evening sky and will be more difficult to observe each evening. Jupiter is entering the late evening sky and will reach opposition next month. Saturn is in Sagittarius and visible for more than half the night. It is a good time to observe the rings. Uranus is only visible with difficulty in the dawn sky during the second half of the month. Neptune is in the dawn morning sky in Aquarius. Pluto is in Sagittarius.

Constellations this month – If you want to see many galaxies or observe numerous Messier objects, this month and the next month are the

On the Schedule

(Items Subject to Change)

PROGRAMS

STAR PARTIES

?July 20: Challenger Center, 50th anniversary of Apollo 11 lunar landing event

?November 23: Bangor Land Trust

? Tentative; (rs) rain or shine; (co) clear only; (rd) rain date

times. 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. From Cor Caroli, alpha (α) Canes Venatici there are numerous observable galaxies. 4° NNW is M94 (NGC 4736) a spiral galaxy. 1¾° 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 M106. 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 observed by Méchain but added to the Messier list in 1947 by Helen Sawyer Hogg. Look below in featured Messier object to find a discussion of Messier 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 ¼° 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 to therefore Messier must have meant this double star to be M40. Next to observe is M101. To find it go to the stars near 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 5½° 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 ½° NNW of M101 and NGC 5474 is located ¾° 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 constellations 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 – Cor Caroli, Alpha (α) Canum Venaticorum is located a little over 14 degrees SW of the star at the end of the handle of the big dipper, Alkaid eta (η) Ursa Major. I will not cover who or why this star received its popular name Cor Caroli (Charles' Heart) here. You can look up the two popular theories for yourself. Cor Caroli is a double star. The two are not the same color but it is difficult to tell the difference. Most consider them white and slightly yellow. It does not take a very powerful telescope to separate this pair. The dimmer of the pair is designated as Alpha (α) 1 at mag 5.6 and the brighter Alpha (α) 2 at mag 2.8. Alpha 2 is a star with two characteristics of interest. It is both a star with a very strong magnetic field and a star with a strong abundance of rare-earth elements. Stars with strong magnetic fields show the Zeeman Effect a splitting of spectral absorption lines. The Zeeman Effect was noticed in the europium lines at maximum magnetic intensity and when the polarity was reversed the chromium lines were at maximum intensity. The magnetic field seems to concentrate the rare earth elements in the star but the origin of the magnetic field or the origin of the rare-earth elements is not known for certain. The current thinking is merging of neutron stars form rare-earth elements. Did this star result from a merging of neutron stars and somehow the strong magnetic field was a result? Just wondering. Did I mention both Cor Caroli Alpha 1 and Alpha 2 are also spectroscopic binaries? This is one mysterious star!

Featured Constellations – 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. It was added by Johannes Hevelius in 1687 and is considered a modern constellation since it did not appear as a separate constellation in any ancient text but only as the dogs of Boötes.

Featured Messier object – M94 (NGC 4736) is found by locating Cor Caroli and proceeding 3°NNE. Known as the Cats Eye Galaxy M94 was discovered in 1781 by Pierre Méchain and observed by Messier two days later. The name comes from the contrast between the inner bright ring containing the starburst ring and the darker outer disk containing the spiral arms. Some astronomers think the inner and outer rings are the result of the merger with a smaller galaxy. Others think they were formed out of material in the galaxy and the galaxy is still evolving. A group of astronomers in 2008 announced M94 contains little or no dark matter and could have formed under gravitational influence while others have a contrasting view. M94 is the brightest member of the Canis Venatici group of about 40 galaxies. It appears M94 has very few or no dwarf companions which is unusual. Get out and observe this galaxy. It is face on and offers a great view. The larger your telescope the better. If you are unable to observe M94 at least locate the Hubble observation and view it.

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.

Bill

Telescopes for Sale

Dave was contacted by a gentleman from Orono who recently purchased three telescopes all of which he found to be too heavy to cart outside, etc. (He is in his 70s.)

Astro-Tech AT 72mm ED Apochromat Doublet Refractor Telescope. Purchased approx 3 wks ago,like new. Only used twice. I purchased telescope from Astronomics for $469.00, shipping included.

Celestron 5" Reflector. Includes: 5" Tube, German Eq mount, 1 20mm eyepiece, 1 4mm eyepiece, Aluminum tripod, 3x barlow lens, manual and instructional dvd. All accessories that came with scope. This scope has never been outdoors, only put together indoors. It's like new. Scope presently on ebay cost $154.00 new from one buyer and another buyer $ 238.00 or best offer.

Meade 80mm Infinity Az Refractor. Focal ratio f/5. Tripod, 1 eyepiece 25mm, 1 eyepiece 6mm, Right angle prism, all accessories that came with the scope. ebay price new $165.59 shipping included.

Please call or email for negotiated price and more info.

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