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# Penobscot Valley Star Gazers

An Astronomical Society of Central Maine

A deep mysterious sympathy doth bind  
The human heart to Nature's beauties all.  
-Robert Nicoll



May 2024

## Let the Sunshine In

The next meeting of the PVSG really will be at John Bapst Memorial High School on Monday, May 13<sup>th</sup> at 6:30 pm. Again, we assume Zoom will be available also. (Zoom meeting ID 862 9984 6478 Password: PVSG.) The program will be *Solar Astronomy*, by Dwight Lanpher. The presentation will include a discussion of the Sun and it's features and the tools of Solar Astronomy including an explanation of the operation of white light filters, Hershel wedges, and Etalons. It will also cover details of spectra observed in Hydrogen Alpha, Calcium K & L, and Sodium D light.

Thanks for last month's program go to Bill and Jeff for sharing their eclipse stories and photos.



### PVSG Monthly Meeting Minutes March 11, 2024

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.

sunrise. Messier's telescope was located in Paris. The objects are in 37 of the 88 constellations.

### Secretary's Report and Acceptance of Minutes

No vote taken on the minutes.

### Treasurer's Report

Dave reported that this month's balance is \$819.97.

### Meeting:

#### Call to Order and Welcome to Visitors

The meeting was held at the John Bapst Memorial High School and by Zoom videoconference. The meeting was brought to order by Don Ferrell at approximately 6:50 PM.

#### Attendance:

##### In Person:

**Don Ferrell – President**  
**Jeff Cunningham – Vice-President**  
**Dave Clark**  
**Scott Burgess**  
**Ralph Mallett**  
**Wade & Donna Smith**  
**Dwight Lanpher**  
**Stuart Cotts**

##### Visitors:

**Sophia Davis**  
**CJ Francis**

##### Online:

**Phil Normand -Secretary**  
**Don Krause**  
**Bill Shackelford**

### Presentation

Dave presented a talk on Messier Marathons. He said that March is a good time to try to observe all the Messier objects. There is timing involved due to some objects setting soon after twilight and others rising in the hours before

### Club Liaison Report:

No report this meeting.

### Observing Reports:

Don mentioned he has rebuilt his Dobsonian mount with the help of Dave and Scott. Dwight showed pictures of his 152mm Lunt Solar Scope. He showed it with a ZWO camera and ASIair+ wireless controller.

### Old Business

### New Business

Don brought up the fact that the next meeting is scheduled for the day of the eclipse. It was decided that we will meet the following Monday, April 15<sup>th</sup>. Don also mentioned that future meetings will be held in person at John Bapst and online through Zoom as well.

Folks mentioned where they were going for the eclipse.

The membership discussed our need for a general liability insurance policy for the club. The policy recommended by the insurance group that we use for our current plan seems to be the most cost effective. The club voted to go with the Philadelphia Plan Policy.

Dwight suggested that the club should state which events are to be considered official club activities in case we need to make a claim.

Bill Shackelford asked if anyone wanted a call from him describing the eclipse before it gets to the eastern part of the US.

#### **Upcoming Calendar of Events**

April 8<sup>th</sup> – Total solar Eclipse

April 13<sup>th</sup> (Saturday) – Wiscasset, Waterville & Farmington Railway, Alna (CMAS)

April 20<sup>th</sup> (Saturday) – Possible rain date or second date at the railway. If not, another location will be submitted (CMAS)

May 4<sup>th</sup> (Saturday) – Observing with CMAS at Galaxy Quest, 84 Vancycle Road Lincolnville, ME 04849

August 9<sup>th</sup>-11<sup>th</sup> – Maine State Star Party at Cobscook Bay State Park

#### **Adjournment**

The meeting was adjourned at approximately 8:25 PM

#### **PVSG Monthly Meeting Minutes**

April 15, 2024

#### **Meeting:**

##### **Call to Order and Welcome to Visitors**

The meeting was held by Zoom videoconference. The meeting was brought to order by Don Ferrell at approximately 6:40 PM.

Attendance:

##### **Online:**

**Don Ferrell – President**  
**Jeff Cunningham – Vice-President**  
**Dave Clark**  
**Scott Burgess**  
**Ralph Mallett**  
**Wade & Donna Smith**  
**Dwight Lanpher**  
**Stuart Cotts**  
**Sophia Davis**  
**CJ Francis**  
**Phil Normand -Secretary**  
**Don Krause**  
**Bill Shackelford**

##### **Visitor**

**Charlie Sawyer from Downeast Amateur Astronomers**

#### **Presentation**

Bill gave a presentation about his trip from Western Oklahoma to Eastern Oklahoma to view the eclipse. He viewed the eclipse from the town of Haworth, OK. They had 4 minutes and 15 seconds of totality.

Jeff showed the pictures he took with his dwarf electronic telescope, including a mosaic of all the phases of the eclipse.

#### **Secretary's Report and Acceptance of Minutes**

No vote taken on the minutes.

#### **Treasurer's Report**

Dave reported that this month's balance is \$484.97. The club liability policy has been purchased and is in effect.

#### **Club Liaison Report:**

No report this meeting.

#### **Observing Reports:**

Folks talked about their experiences viewing the eclipse. Several spoke about traffic issues heading back home after the eclipse viewing. Charlie talked about the eclipse viewing from Millinocket. Wade and Donna viewed from Staceyville. Phil talked about the eclipse in Burlington, VT. Ralph was in Patton, ME.

Don spoke about being at the Blue Hill Public Library. They were giving out glasses and about 30 to 40 people were present to observe. Don had a 114mm scope with a filter and let those present view the sunspots and the moon moving across the sun.

#### **Old Business**

Jeff brought up the questionnaire that the Astronomical League sent out. Jeff went through and came up with answers for the questions and asked the membership to weigh in. Dave mentioned that people should review and we can discuss things at the next meeting.

Dave asked if we should remove names from Google groups if they were not members. Phil & Jeff remembered a previous discussion where folks thought we should keep all the names in the Google groups mailing list.

#### **New Business**

Charlie Sawyer discussed this year's Maine State Star Party. Charlie is hoping to get an even larger group this year. This year's date is August 9<sup>th</sup> to 11<sup>th</sup>. There will be solar viewing during the day and evening observing as well. There will be activities for children and Astronomy Jeopardy for the observers. The perseids meteor shower will be near peak and a small waxing crescent moon will be visible early in the evening.

#### **Upcoming Calendar of Events**

April 20<sup>th</sup> (Saturday) – Possible rain date or second date at the railway. If not, another location will be submitted (CMAS)

May 4<sup>th</sup> (Saturday) – Observing with CMAS at Galaxy Quest, 84 Vancycle Road Lincolnville, ME 04849  
August 9<sup>th</sup>-11<sup>th</sup> – Maine State Star Party at Cobscook Bay State Park

#### Adjournment

The meeting was adjourned at approximately 8:05 PM

Phil

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## Observe The Sky This Month Some Selected Objects May 2024

**General sky comments** – Many planets continue to be occulted by the Moon. None are visible in our area this month. If you are an early riser the planets Mercury, Mars, Saturn, and Neptune are all in the morning sky. Did anyone observe the Eta Aquarid meteor shower? You early risers had the best opportunity on the morning of the 5<sup>th</sup>. They are still active until the 28<sup>th</sup>.

**Planets this month** – Last quarter moon was on Wednesday the 1<sup>st</sup> and the New Moon (lunation 1254) was on Tuesday the 7<sup>th</sup> before the PVSg meeting on the 13<sup>th</sup>. First quarter Moon is on Monday the 15<sup>th</sup>, full Moon is on Thursday the 23<sup>rd</sup> and last quarter is on Thursday the 30<sup>th</sup>. Mercury reached greatest elongation from the Sun on the 9<sup>th</sup>. It continues brightening for the rest of the month because it is coming closer to the Earth while becoming closer to the Sun. Venus is too close to the Sun to be observed. Mars was occulted by the Moon on the 4-5 in Antarctica. It will stay the same brightness for the rest of the month at mag 1.1. Jupiter is in conjunction with the Sun on the 18<sup>th</sup>. It is not visible this month. Saturn has an occultation by the Moon on the 31<sup>st</sup> in much of South America. It also dims slightly during the month because the rings are closing. Uranus is too close to the Sun to be observed. Neptune is in the morning sky in Pisces. Pluto is in Sagittarius.

**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 ( $\alpha$ ) Canes Venatici there are numerous observable galaxies. 4° NNW is M94 (NGC 4736) a spiral galaxy. 1 $\frac{3}{4}$ ° W of M95 is NGC 4618 (Arp 23) a barred spiral with a strange spiral arm. 1 $\frac{1}{2}$ ° slightly north of W is the star beta ( $\beta$ ) Canes Venatici. From there go  $\frac{1}{2}$ ° 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  $\frac{3}{4}$ ° 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 ( $\chi$ ) Ursa Major the next bright star below the bottom left corner star Phecda, gamma ( $\gamma$ ) 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 ( $\delta$ ) Ursa Major. From this star go 1° NW to the 5<sup>th</sup> magnitude star 70 Ursa Major then continue  $\frac{1}{4}$ ° NW to this double star Winnecke4. There is a 12<sup>th</sup> 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 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 $\frac{1}{2}$ ° 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  $\frac{1}{2}$ ° NNW of M101 and NGC 5474 is located  $\frac{3}{4}$ ° 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** – Alkaid, eta ( $\eta$ ) Ursa Major the end star in the “Big Dipper” is a blue-white type B main sequence star. It is the 40<sup>th</sup> brightest star in the sky after the sun and considered to be one of the most stable stars. It is also the 3<sup>rd</sup> 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 constellation 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 ( $\beta$ ) star Denebola and the Virgo Epsilon ( $\epsilon$ ) 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 galaxies obtain a good star chart and locate them 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 ( $\eta$ ) 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 M52, 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 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 Catalogue (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