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# Penobscot Valley Star Gazers

An Astronomical Society of Central Maine



November 2022

**November 14**

1969: Apollo 12 launched, second lunar landing mission.

2008: STS-126 Endeavour launched.

## November Meeting

Again, it looks like the next meeting of the PVSG will be held at John Bapst Memorial High School on Monday November 14<sup>th</sup> at 6:30 pm. The meeting will also be available on Zoom. (Meeting ID 862 9984 6478 Password: PVSG.)

Thanks for last month's program go to all who shared their observing experiences.

Note to readers: If you no longer want to be on the club's mailing list, simply unsubscribe at the bottom of the email.



### Trip to the Moon

PVSG Monthly Meeting Minutes  
September 12, 2022  
Planetarium and Zoom

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.

Shawn gave an update on the Stars Over Katahdin Star Party. Bring cash for the food truck and register online if you plan to attend. Shawn also said that when Artemis finally launches, there will be a launch viewing party at the dome.

Shawn then presented the group a video called "Forward to the Moon". It describes the Artemis project to return astronauts to the moon and everything involved with the Public / Private partnership. It discussed the equipment to be used and the astronauts that will fly to the moon and back, including the lunar gateway vehicle that will orbit the moon and several lunar landing explorers that will conduct experiments prior to the sending of astronauts. One mission is the VIPER Rover that will look for water ice on the moon. A large radio telescope is planned for the far side of the moon. The moon will also serve as a better starting point for further exploration of our solar system.

### Meeting:

#### Call to Order and Welcome to Visitors

The meeting was held at the Versant Power Astronomy Center and by Zoom videoconference. The meeting was brought to order by Don Ferrell at approximately 6:45 PM.

Attendance:

#### In person:

**Don Ferrell – President**  
**Phil Normand - Secretary**  
**Shawn Laatsch**  
**Wade & Donna Smith**  
**Scott Burgess**  
**Mary-Frances Beesorchard**  
**Ralph Mallett**  
**Dwight Lanpher – Club Liason**

#### Online:

**Bill Shackelford**

#### Guests:

**Earl Raymond (From SMA)**

### Presentation

Shawn started by showing the group an all-sky camera that will soon be mounted on the observatory. This will work with other Maine based cameras to triangulate any meteorite falls to within approximately one-half mile. It is hoped that this will aid in the recovery efforts of future meteorites.

### Secretary's Report and Acceptance of Minutes

Phil reported that our Domain information for our website needs to be updated. Phil was contacted by Alan Davenport since Alan was still listed as a contact. Alan asked to be removed from the contact list for the domain. Our domain comes up for renewal on June 26, 2023 at a yearly cost of \$16 and our Site Builder (tool used to create and maintain website) renewal is on January 2, 2023 at a cost of \$11.88. Phil suggested that in lieu of paying his dues in October, he would pay for these two renewals. Phil said he would add his wife Laurie as a member which would cost \$27 and balance out the cost of renewals.

### Treasurer's Report

Dave stated by email that we have \$496.17 in the treasury. He also mentioned that dues are due in October.

### Club Liaison Report

Dwight said that he attended the McAuliffe Shepherd Discovery Center in NH for Astro Fest with other NH astronomical society members and brought his solar scope. They had approximately 600 visitors. Wade mentioned the Eclipse Mobile at the Maine State Star Party and Shawn mentioned that it would be at the Stars Over Katahdin Star Party.

### Observing Reports

None

### Old Business

None

### New Business

Phil gave the following dates for upcoming events:

- SciGirls Star Power night at the Challenger Learning Center – Friday, September 16<sup>th</sup> – Program ends at 7:30 – Bring Scopes and/or Binoculars.
- Stars Over Katahdin – Saturday, September 17<sup>th</sup> – Public Star Party.
- Stars Over Katahdin Zoom Conference – September 22<sup>nd</sup> at 6:30.
- CMAS Star Party at Galaxy Quest Observatory in Lincolnville – September 23<sup>rd</sup> at 7:30.
- Star Party at Wiscasset, Waterville & Farmington Railway Museum (no rain date) – September 24<sup>th</sup>.

Dwight added that the ASNNE annual Starfest would be held on Friday-Saturday, September 23-24 in Kennebunk with Solar viewing on Saturday. Dwight also mentioned the upcoming Northeast Astronomy Forum in Durham, NH.

Next month's meeting will be at John Bapst and on Zoom.

### Adjournment

The meeting was adjourned at approximately 8:10 PM

Phil

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Don't Forget



Dues Were Due October 1



### Observations

PVSG Monthly Meeting Minutes  
October 10, 2022  
John Bapst and Zoom

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.

### Meeting:

#### Call to Order and Welcome to Visitors

The meeting was held at John Bapst Memorial High School and by Zoom videoconference. The meeting was brought to order by Don Ferrell at approximately 6:40 PM.

Attendance:

**In person:**

**Wade & Donna Smith**  
**Scott Burgess**  
**Mary-Frances Beesorchard**

**Online:**

**Don Ferrell – President**  
**Andy Brown – Vice President**  
**Dave Clark – Treasurer**  
**Phil Normand - Secretary**  
**Bill Shackelford**  
**Don Krause**

**Guests:**

**None**

#### Presentation

Don mentioned that he has had no input from the group on what the group wants for Astro bits. Don did mention that he had found some presentations from a Florida group that looked interesting for future viewing. Dave mentioned that he had contacted Audrey Brown and that she was fine and her property survived the hurricane.

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

Phil reported that there would be 2 months of minutes next month.

#### Treasurer's Report

Dave stated that we have \$627.17 in the treasury. Dave mentioned there was a new member and 3 renewals.

#### Club Liaison Report:

None

#### Observing Reports:

**Bill** viewed the sun and didn't see many sunspots. **Don** observed for 5 nights last week and

concentrated on Jupiter and Saturn. **Dave** mentioned that he, Phil, Don, and Ralph were at the Challenger Learning Center for the SciGirls Star Power program. **Don** mentioned that on October 1<sup>st</sup>, he and Shawn were back at the Challenger Center and were able to observe with their dobs although there were some clouds around. They had about 30 participants. **Mary-Francis** went to Pembroke and helped Dwight with one of his scopes at the Downeast Coastal Conservancy at the Reversing Falls Park. She kept Saturn, Jupiter and the Andromeda Galaxy in the eye piece for folks to view. **Phil** attended the Stars Over Katahdin Star Party and there were a lot of high level clouds. He decided not to set up his scope but then as night approached, it cleared up quite a bit. Phil said that it was nice to hear other astronomers like John Meader who were well versed in star "Folk Lore". Phil also attended ASNNE's Star Fest. He mentioned that the Space-X launch was viewed by the attendees. Phil also mentioned a family from India that had never observed through a telescope and were very excited about what they could see. **Dave** mentioned that it reminded him of past Acadia Night Sky Festival viewing from Mt. Cadillac and the people who would see things for the first time due to the pollution where they lived. **Bill** mentioned he was building an Apollo lander model kit from Metal Earth and showed what he had done so far.

**Old Business**  
None

#### **New Business**

Dave asked if we want to prune the mailing list (google groups list) since there are a few that haven't been part of the group for quite some time. After discussion, it was decided that we would put something at the start of the next newsletter letting folks know that if they did not want the newsletter, they can unsubscribe or send an email and we would remove them from the distribution list.

Wade mentioned that Charlie Sawyer awarded an Astronomer of the Year to Dwight Lanpher and that perhaps going forward we could nominate someone from our club and along with other clubs have a presentation at an event like the Maine State Star Party.

Phil asked if the club wanted to create a banner that our club could display at star parties: Don mentioned a person in Bucksport that makes banners. Dave said we should include the club's original logo and Bill said he thought he still had the image file that he created years ago.

Phil mentioned that if anyone was looking for observing opportunities, CMAS was holding an event on the 22<sup>nd</sup>.

Don spoke to the Bucksport town manager about their efforts to reduce light pollution. He also contacted Brewer but has not heard back. He will also be attending a presentation on light pollution. Dave told about an attempt near the Kitt Peak observatory to reduce light pollution, but unfortunately a side effect was light that kept plants growing round the clock. After 10-15 years, trees died off due to being given constant light. Bill told the story of a school administration building near his house that shines too much light. He mentioned other places that don't have properly oriented lights or light without shades.

#### **Adjournment**

The meeting was adjourned at approximately 7:35 PM

Phil



## **Observe The Sky This Month**

Some Selected Objects  
November 2022

#### **General sky comments –**

Did you early risers observe the total lunar eclipse on the morning of November 8? You needed a low western horizon to observe all of totality. The next total lunar eclipse will be on March 14, 2025. It will be better positioned than this one. My home in Oklahoma was clouded out. The Leonid meteors are active all this month with a peak on the morning of the 18<sup>th</sup>. The Moon will be 35% illuminated on that day. Look for a slim crescent Moon low on the eastern horizon on the 20<sup>th</sup> with the bright star Spica positioned above. On the 28<sup>th</sup> the crescent Moon will be beneath Saturn. On Veterans Day November the 11<sup>th</sup> my local High School had an inspirational presentation in their auditorium for veterans followed by a luncheon. Every grade school class also honored veterans in their classrooms.

**Planets this month –** Before the PVSG meeting on the 14<sup>th</sup> the full Moon was on Tuesday the 8<sup>th</sup> with a total lunar eclipse that morning, last quarter Moon is on Wednesday the 16<sup>th</sup>, new Moon (lunation 1236) is on Thursday the 23<sup>rd</sup>, and first quarter Moon is on Thursday the 30<sup>th</sup>. Mercury is too close to the Sun to be visible all month. Superior conjunction was on the 8<sup>th</sup>. Venus is also too close to the Sun to be observed all month. Mars begins its retrograde trip westward across the constellation Taurus, the Bull. It brightens from magnitude -1.2 to -1.8 and grows in size from 15° to

17° in size. It technically reaches its closest point to Earth on the evening of the 30<sup>th</sup>. Jupiter dominates the evening sky as the brightest object in Pisces. Saturn is in western Capricornus. The waxing crescent Moon passes 4° south on the nights of the 28<sup>th</sup> and 29<sup>th</sup>. The planet Uranus (Οὐρανός), the only planet based on a Greek name, obtains opposition on the 9<sup>th</sup> and is visible all night. Uranus can be glimpsed as a 5.6 mag. “star” with no optical aid at a dark site. It is currently in a group of stars with the binocular double star pi (π) Arietis at Mag. 5.3 and the star Rho (ρ) Arietis all forming a flattened irregular triangle. Neptune is in the evening sky in Aquarius and sits well placed for viewing. Pluto is too close to the Sun to observe.

**Constellations for the month** – At the far southern range of our sky are located the constellations Sculptor, the Sculptor and Fornax, the Furnace. The claim to fame for Sculptor is it is the location of the southern galactic pole, the south pole of the Milky Way galaxy. The north galactic pole is in Coma Berenices. Sculptor does contain many galaxies but they are too far south to be easily seen at our latitude. Like Sculptor, Fornax contains many galaxies but they are even less conspicuous than those in Sculptor. Above these two constellations is the large constellation Cetus, the Whale. It is known as a whale in the modern sky but in reality it is the sea monster of Andromeda fame turned to stone by Perseus with the severed head of Medusa. Cetus spans over 3 hours in right ascension but easily seen at this time of the year. Cetus contains mostly galaxies many of them bright including M77. Now is the time to observe M77 as it is easier to find now than next year when you might want to find it low in the west during a Messier marathon. The hexagonal star pattern including the alpha (α) star Menkar (see below) forming the tail (head?) of Cetus makes a convenient star pattern to locate M77. It is found just to the SE of the star gamma (γ) connecting the body of Cetus to the tail pattern. 6° SW of gamma (γ) is the variable star Mira, omicron (ο). Mira is the featured star this November. Cetus contains a nice planetary nebula NGC 246 known as the Skull Nebula but it looks more like a doughnut with a bite taken out. NGC 246 looks transparent because several stars can be seen in it. The star in the middle is the central neutron star. To find it start at Deneb Kaitos, beta (β) Cetus, and go 6° north to a line of three stars. The skull Nebula is located immediately east. There are numerous galaxies (NGCs 779, 615, 596, 584, 157, 720, 988, 1042 and 1052) in Cetus on my observing list. You might try observing some of them before I get to them. Above Cetus is the eastern “fish” of Pisces, the Fishes. The alpha (α) star Alrescha indicates the “knot” between the cords joining the two fish. Pisces also contains one Messier object M74 a face on spiral galaxy found 1° WNW of eta (η) Pisces. This is one of the most difficult Messier objects to observe. To the west of the western fish of Pisces is the constellation Aries, the Golden Ram a Zodiac constellation. See featured constellation below. North of Aries is the constellation of Triangulum, the Triangle. Triangulum is a convenient way to locate the galaxy

M33 located 4° WNW of alpha (α) Triangulum. Triangulum has been covered extensively before. M33 is the third largest galaxy in the local galaxy group but is difficult to view because of its low surface brightness. It can be located without any visual aids in a dark sky and can be used as a gauge to judge sky darkness. To observe M33 use a wide field telescope at the lowest power or a large binocular. Above the west fish of Pisces and connected to Pegasus is the constellation Andromeda. Andromeda is best known as the constellation of the Andromeda Galaxy, M31. It is usually found by starting at 2<sup>nd</sup> mag. Mirach, beta (β) Andromeda and following 3<sup>rd</sup> mag. mu Andromeda to the galaxy. I employ another simple method by using the eastern three stars of Cassiopeia as an arrowhead shaped pointer to the galaxy 15° away. It points slightly south of the galaxy but the galaxy is sufficiently bright to be easily seen. If you use the Mirach method please stop at Mirach before you proceed and observe NGC 404. It is hidden in the glow of the star but easy to observe by putting Mirach just out of the field of view and it will become visible as a small lenticular galaxy. In fact it is one of the easiest galaxies to find and observe in the entire sky. I will not cover M31 here because there are extensive articles already written about this galaxy, the largest galaxy in our local group. Please observe it this month. M31 does have numerous satellite galaxies. If you have done any observing of the Andromeda galaxy you have likely observed M32 as it is located within the boundary of M31 the easiest of the satellite galaxies. Many of you have observed the second brightest satellite galaxy M110 less than 1° NNW of the center of M31. Likely you have not observed any of the far outlying satellite galaxies. Several of these are relatively easy to observe if you know where to look. To find the two easiest far outlying galaxies go about 7° N of M31 to a line of easily found 4<sup>th</sup> 5<sup>th</sup> and 6<sup>th</sup> magnitude stars. From the 4<sup>th</sup> magnitude star omicron go 1° east to find NGC 185 the third brightest satellite galaxy a dwarf elliptical galaxy. About 1° west is NGC 147 also a dwarf elliptical galaxy and the fourth brightest. It is more extended in the sky and fainter than NGC 185 but still easily observed. The story of Andromeda in mythology has also been told previously. Above the constellation Andromeda is Cassiopeia easily recognized by most people from its “W” shape. This constellation has also been extensively covered before.

**Featured star** – Menkar, Alpha (α) Ceti is a long time variable star. It might have been brighter in the 17<sup>th</sup> century. More about this later. The name Menkar is from the Arabic *al-minkhar* “the nostrils.” It could better represent the jaws of the whale (sea monster). Menkar is a cool red-class giant. It is in the late stage of evolution likely fusing helium to carbon and the carbon core beginning to contract. As its atmosphere continuing to expand it is well on the way to becoming an unstable Mira type variable star. Any observer by only looking at beta (β) star Deneb Kaitos it is seen to be at least a half degree brighter than Menkar leading an observer such as William Herschel to speculate that Bayer in the 17<sup>th</sup> century might have seen Menkar as brighter.

The Greenwich observer William Thynne Lynn agreed with Herschel and said the astronomers Flamsteed and Hevelius also recorded Menkar as brighter in the 17<sup>th</sup> century. In addition Tycho Brahe in the 16<sup>th</sup> century registered both stars as second magnitude and possibly variable. Earlier Ptolemy in his *Almagest* (written in the second century) records them both as third magnitude. Deneb Kaitos is also a giant star much closer than Menkar making it look brighter than expected for its class. Is it also variable or simply moving closer? Something to speculate about?

**Featured Messier object** – M77 in the constellation Cetus, the Whale is the archetype for Seyfert 2 galaxies. In Maine many people think of and try to observe M77 when participating in a Spring Messier marathon. At this time M77 is low in the southwest sky and is only viewable for a short time before disappearing below the horizon. This is the best time of year to observe M77 as it is well placed for viewing, easy to find, and able to be observed in almost any size telescope including scopes as small as 100 millimeters (4 inches). The larger the scope the better the galaxy appears. With my 25x100 binocular M77 appeared as an oval galaxy with a bright center and a hint of mottling. This was at a very dark site. Using a 10 inch telescope at the same site the mottling appeared on one side only. It was an obvious spiral galaxy one arm separating a detached central area brighter than the rest of the galaxy. Most observers will need a scope of 12 inches or larger to see this much detail. M77 was discovered by Pierre Méchain in October of 1780. Messier observed it in December of the same year describing it as a cluster of small stars which contains some nebulosity. Observing M77 in 1848 Lord Rosse using the Leviathan referred to it as “a blue spiral.” Seyfert galaxies have a spectra of an active nucleus as described by Carl Seyfert. Type 1 and 2 Seyfert galaxies are similar but have different viewing perspectives.

**Featured constellation** – Back when Aries contained the sun on the spring equinox it had a lot of importance and represented several things for many cultures. For the Egyptians it represented the god Ammon Ra, the god of Fertility and Creative Life and briefly the actual Sun. Most of the time the god was depicted as a man with a ram’s head. Aries rescued the children of the king of Thessaly from their cruel stepmother. Later one

of the children Phryxus sacrificed the ram and placed its fleece in a sacred grove where it turned to gold. Later it was sought and found by Jason and his Argonauts. As it contained the Sun the Greeks and Romans called the vernal equinox the “first point of Aries.” This name still persists although the sun has moved from Aries to Pisces. From west to East the stars of Aries are called Mesarthim, gamma ( $\gamma$ ), Sheratan, beta ( $\beta$ ), and Hamal, alpha ( $\alpha$ ). These stars easily fit in a 10x50 binocular field. Mesarthim is the official name for this star although you will see it spelled Mesartim (including spell check). It is a pair of equal bluish-white stars resolved at 125x. 2° west of Hamal is gamma ( $\gamma$ ) Aries a pair of yellowish-white and pale blue stars resolved at only 75x. The only galaxy worth observing in Aries is NGC 772. It has a bright central area with one side curved and brighter than the other. Look a little over 1° slightly south of east from Mesarthim to find this galaxy.

**Other objects of interest** – Try this galaxy if you are successful finding NGC 247. NGC 253 is located another 4½° south in Sculptor. In the southern USA this galaxy can be observed easily and is one of the very best galaxies. NGC 1055 a slanted edge on spiral is very interesting in a large telescope and located ½° NW of M77 in Cetus. There are two bright stars one slightly brighter than the other above this galaxy making it look like a winking smiley face or grinning black cat except in reflector telescopes it is upside down. NGC 936 is located 3° SW of delta ( $\delta$ ) Cetus or 1° west and slightly south of 6<sup>th</sup> mag. 75 Cetus. NGC 936 is a barred spiral I noted looked longer than wide but not much else. The European Space Agency (ESO) has posted a photo of this galaxy and it has a strong resemblance to a Star Wars TIE fighter giving this galaxy the name “The Darth Vader Galaxy.” While using the star Mirach, beta ( $\beta$ ) And. to find M31, use a power of about 100x to 150x and observe NGC 404 in the same field as Mirach. This irregular galaxy is surprisingly easy to observe. It is round with a brighter center. If you have trouble seeing this galaxy put Mirach just outside your field of view. NGC 404 is also known as “The Ghost of Mirach.”

Dark sky, returns the night that we have lost  
Bill Shackelford