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Penobscot Valley Star Gazers

An Astronomical Society of Central Maine

The year draws in the day
And soon will evening shut:
The laurels all are cut,
We'll to the woods no more.
- A. E. Housman



November 2021

An Eagle Observatory

The PVSG will meet remotely via Zoom on Monday, November 8, 2021 at 6:30 pm (Meeting ID 862 9984 6478 Password: PVSG). Doors will open around 6:15 for some socializing before the meeting. As far as we know, our speakers will be Larry Berz of the Francis F. Malcolm Science Center and Connor St. Peter, who will discuss the realization of Conner's Eagle Scout project, the new observatory in Easton, ME.

There was no formal program last month, but we could thank Dwight and Wade for their astrobits.



Facebook?

PVSG Monthly Meeting Minutes
October 11, 2021
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.

school with Charlie Sawyer and displayed images using his Stellina.

Dwight ended his Astro Short by giving details on the new Vaonis Hyperion telescope and its exceptional specifications. He noted that it weighs 165 pounds so its not portable and costs \$45,000. It was offered for sale in late September and over 100 have already been sold.

Meeting:

Call to Order and Welcome to Visitors

The meeting was held by Zoom videoconference. The meeting was called to order by Andy Brown at approximately 6:32 PM.

Attendance:

Members Online:

Andy Brown – Vice-President
Dwight Lanpher – Club Liaison & Member-At-Large
David Clark – Treasurer
Phil Normand – Secretary
Bill Shackelford
Scott Burgess
Mary-Frances Beesorchard
Ralph Mallett
Wade and Donna Smith
Ralph Foss
Alan Davenport

Alan asked Dwight if he had registered his star parties on the Night Sky Network. Dwight said he would look in to doing that.

Wade shared a couple of handheld pictures taken with his new Samsung Galaxy phone. He fashioned a mount for the camera that can mount to a tripod and will show more pictures at a future meeting. Dwight shared a phone mount he purchased on Amazon.

Alan mentioned the Rule of 500, that says that if you divide the length of a lens into 500, the answer is the number of seconds you can take an exposure without getting star trails. Dwight mentioned that height in the sky effects how fast you'll get star trails due to more rapid rotation.

Astro Shorts

Dwight presented information on Star parties he was able to host or attend over the last 3 months. He was able to host or attend 12 different star parties. Dwight hosted 6 laser constellation tours along with Stellina imaging for campers at the Terramor campground in Bar Harbor. Dwight attended an observatory star party in Pembroke, ME for homeschoolers and used his Stellina scope to display Clusters, Nebulae and galaxies to the attendees. Dwight also did a star tour for the Perry elementary

Secretary's Report and Acceptance of Minutes

The September Meeting Minutes were unanimously accepted.

Treasurer's Report

Dave reported our account has a current total of \$541.37. Dave stated that we have no pending bills to pay until next March when the insurance comes due. Dues are now due and checks should be sent to Dave Clark 609 Cape Jellison Road Stockton Springs 04981. The Treasurer's report was unanimously accepted.

Observing Reports:

Dave has been checking out Orion with his 10 X 70 binoculars at 2:30 in the morning. **Wade and Donna** have been viewing Jupiter and Saturn with a 90mm Celestron. **Donna** also saw a meteor. **Dwight** mentioned that he observed with the Gloucester Area Astronomy Club at the Schoodic Education Research Center. Only 1 night was clear and 11 astronomers from the Gloucester club attended. **Bill** stated he'd been observing the sun and not seeing many sunspots. He has observed Venus, Jupiter and Saturn.

Old Business

No new calendar events or old business items were brought forward to the group.

New Business

Dave asked if we knew how much traffic we were getting on our FaceBook presence. Andy stated that he and Alan had administrator access to the site and will report to the group on traffic. Dave said the reason he brought it up was based on the recent profit motive revelations of FaceBook. Dave would like to know if we want to keep the FaceBook page if we don't get much benefit from it. Wade said he belongs to a mineral and lapidary group that got a large number of hits on their post about an upcoming show. Andy agreed there were some statistics we should be able to find. Alan noted that he was looking at a post from August 9th about a recurrent Nova and reached 54 people and 25 engagements with the post. He also mentioned a post from last March that had reached a similar number of people but only had 2 engagements. Alan felt we could find more generalized data describing the popularity of our presence on FaceBook. Andy suggested a test by making weekly posts for a month and then looking at statistics. Alan thought it might be difficult to make a judgment during this long COVID period of star party inactivity that would have had more public interest.

Scott suggested a discussion on future programming. Scott felt we need to make a stronger effort as a club to have programs each month to help draw people to the meetings. Scott stated that he felt there are a number of members capable of putting together a program and sharing it but he'd like to get input from the membership on what people want to hear about. Scott offered to create a program about Astronomy in the classroom during COVID. He felt others could talk about observing experiences and about astronomy equipment.

Dave suggested we send a questionnaire to the membership about what they would like to hear. Dave said he'd like to invite Dr. Batusky after he returns from sabbatical. Scott mentioned that Dr. Neil Comins has spoken in the past.

Ralph F. suggested we offer our own basic videos on how to set up and use telescopes to help out the casual astronomer. Dave mentioned that many larger clubs have these resources available online. Ralph thought having our own videos might be a membership draw.

Andy suggested a topic of integrating software packages like Sky Safari with telescopes. Dave would like a presentation on electronically assisted astrophotography, and information on the different types of dedicated astronomy cameras.

Scott volunteered to put on a talk next month on either Astrophotography and dedicated cameras or astronomy in the classroom during COVID.

Dwight informed the group that he had been selected to join a 90 minute virtual focus group by the Night Sky Network on October 26th. Dwight will report back to the group next month.

Alan mentioned that we might be able to get someone from the Francis F Malcolm Science Center to talk about an Eagle Scout project to build a roll off observatory in which they have put a Dobsonian telescope.

Adjournment

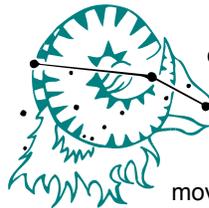
The meeting was adjourned at approximately 7:40 PM

Phil

Observe The Sky This Month

Some Selected Objects

November 2021



General sky comments – Did anyone in Maine attempt to see Mercury occulted by the Moon on the 3rd? It would have been a daytime event with Mercury and the Moon high in the sky and only 15° removed from the sun. Positioned here it would have taken a skilled observer to accomplish this observation. There will be an almost total eclipse of the moon on the 19th. It is listed as partial but only a very small slice of the Moon will be illuminated at the time of deepest eclipse. There will be a red or orange tint to the surface of the moon very much like

The north galactic pole is in Comae 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 is 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 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 (\omicron). 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 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 2nd mag. Mirach, beta (β) Andromeda and following 3rd 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 and is 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 4th 5th and 6th magnitude stars. From the 4th 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 – Mira, Omicron (\omicron) Ceti is the first known periodic variable star. Mira is a Latin word meaning "The Amazing one." Some people interpret it as "The Wonderful." Mira is credited to be discovered by David Fabricius an amateur astronomer and clergyman (1564 - 1617). He observed the star from August 3, 1596 to August 21, 1596 when it brightened from magnitude 3 to 2. He could not find it plotted on any chart he could find. It faded in September and disappeared completely in October. He suspected it was a nova but it reappeared in February of 1609. The star was nearly forgotten until being rediscovered in 1638 by Johann Fokkens Holwarda who had determined its period as 11 months (modern value of 332 days). On November 7, 1639 it was observed by Johannes Hevelius and he called it Mira (Historiola Mirae Stellae) in his catalog Prodomus Astronomiae of 1690 along with his atlas of the stars published by his wife Elisabetha after his death in 1687. Mira is a pulsating red giant variable star with a white dwarf companion.

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 with 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 (γ), Sheratan, beta (β), and Hamal, alpha (α). 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 (γ) 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 (δ) Cetus or 1° west and slightly south of 6th 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 (β) 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