Penobscot Valley Star Gazers

An Astronomical Society of Central Maine

http://www.gazers.org

June 2021

Roses smile in their white content,
Roses blush in their crimson bliss,
As the vagrant breezes, wooing them,
Ruffle their petals with careless kiss.
- Henry Hewlett

A New Administration Begins

The June 2021 meeting of the PVSG will be held on Monday the 14th at 6:30 pm via Zoom. The doors will open a little after 6:00 if you want to arrive early for some socializing. We don't know what the program will be, though we suspect that it will not be Alan's book report.

There was no program last month due to the elections. And, speaking of which, we would like to welcome Don Ferrell and Andy Brown as our new President and Vice-President, respectively, and thank the outgoing executives Dwight Lanpher and Scott Burgess for their service in those offices.

Election Meeting

PVSG Monthly Meeting Minutes
May 10, 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.

Meeting:

Call to Order and Welcome to Visitors

The meeting was held by Zoom video-conference and called to order by Dwight Lanpher at approximately 6:35 PM.

Attendance:

Members:

Dwight Lanpher – President
David Clark - Treasurer
Phil Normand – Secretary
Andy Brown – Member-at-Large
Jill McDonald
Michael Harrington
Bill Shackelford
Ralph Foss
Ralph Mallett
Don Krause
Don Ferrell
Wade & Donna Smith

Programs and Astro Shorts

Program:

There was no scheduled program this month due to the scheduled election of a new President and Vice-President.

Secretary's Report and Acceptance of Minutes

Dwight asked for approval of the March meeting minutes as there was not a business meeting in April. March Meeting Minutes were unanimously accepted.

Treasurer's Report

Dave reported that for the month of April, our account had a total of $521.37. Dave then reported that for the month of May, our account has $539.37, due to the addition of 1 new member. The Treasurer's report was unanimously accepted.

Observing Reports:

Dwight reported that he observed down on Sargent's Drive on MDI and managed to get an image of the horsehead nebula in Orion. He had been trying for some time but had not been able to image it. He displayed it for the group. Dwight said it would have been clearer and brighter but starting the imaging process at nautical twilight caused noise from the brightness of dusk. Dwight mentioned he had never had any luck visually observing it with his scopes and a beta hydrogen filter.

Old Business

Bill Shackelford mentioned that his roster entry was incorrect. The fix was made real time.

New Business

Dwight asked Wade to report on the slate of candidates for President and Vice-President as May is election month. Wade reported that Don Ferrell had agreed to run for President and Andy Brown had agreed to run for Vice-President. Dwight asked if anyone else wanted to run for those positions and if there was any discussion on the candidates. Nominations were closed and the candidates were unanimously voted into their new positions.

Dwight volunteered to continue to set up ZOOM meetings. Others in the group were identified as having access to ZOOM accounts as well.

Phil suggested that the officers have a meeting in a couple weeks to talk through things and help Don and Andy with the transition. Phil sug-

gested that it would be nice to get other members to volunteer to put together small presentations to help Don with meeting planning.

Dave then mentioned that Dwight has acted as a club liaison officer for approximately the last 9 years and Dwight said that he would be happy to continue in that capacity. Dwight gave a little history on how he created that position through his contacts with many other Maine and New England astronomy clubs as well as his contacts made through the Acadia Night Sky Festival.

Dwight read his 5 point definition of the club liaison position:

1. The club liaison shall subscribe to email lists and newsletters, and when practical, attend various club meetings and events to learn about the activities and operations of each club.
2. Disseminate and share information of common interest between clubs.
3. Function primarily in an informal capacity, however, when requested, convey materials and documents between clubs for official action by individual club's memberships.
4. Respect the sovereignty of each club and keep each club's private information secure as appropriate. For example, protect member's email addresses and telephone numbers by requesting permission before distribution.
5. Serve at the pleasure of each individual club. The position may be terminated immediately by any club whenever desired.

Dwight mentioned that he drove over 11,000 miles in a year to attend club activities and astronomy events pre-COVID.

Dwight thanked Wade for being the liaison to the Challenger Center and for his many observation reports. Dwight also thanked those who have helped get the monthly newsletter out including Ralph Mallett, Ralph Foss, Phil Normand and especially Bill Shackelford for his monthly observing column. Dwight thanked Scott for stepping in and helping him out with running the meetings. Dwight thanked Shawn Laatsch for all his support of the club and for sharing the Versant Astronomy Center Resources with the club. Dwight reminded Don that Shawn has offered to host a meeting in the near future. Dwight thanked Phil for his work on the brochure and the web site. Dwight thanked Dave for being the Parliamentarian of the group. Dwight told Don he'd send him documents that might be helpful to him as the new President. Dwight thanked Don Krause for his offer of a viewing location, that unfortunately the club has been unable to use.

Phil suggested that the new officer group should meet in 2 weeks to plan the next general meeting and discuss duties going forward.

Dave suggested that we ask if anyone would want to serve as Member-at-Large for a 1 year term now that Andy has been elected Vice President. Dwight nominated Jill McDonald but she respectfully declined.

Dwight read the duties of the Member-at-Large: The Member-at-Large shall solicit from the membership opinions, suggestions and requests pertinent to PVSG functions and affairs. The Member-at-Large shall represent the membership's viewpoint at Coordination Committee meetings.

Dwight mentioned that he went to a Gloucester Area Astronomy Club meeting last weekend. Dwight also said there will be a Maine State Star Party this year August 27th, 28th & 30th. There will be free camping for observers but you need to bring your food for the weekend. Depending on what will be allowed, we may share equipment with the public or use equipment like Dwight's Stellina telescope to show images to the public. Dwight also said he was invited to the Pembrook 4th of July parade. Also, the NH Astronomical Society and Mark Stowbridge, the founder of the original Library Telescope Program, is doing Solar Observing at the McAuliffe Shepard Discovery Center in Concord every Saturday. For safety, eyepieces are sterilized between families. Dwight plans to attend the June meeting of AASNE and he hopes they will have their summer star party this year.

Dave thanked Dwight for the excellent job he has done over the last 8 years as club president and the rest of the group joined in with congratulating Dwight on a job well done.

Adjournment

The meeting adjourned shortly after 7:50 PM.

Phil

Observe The Sky This Month

Some Selected Objects

June 2021

General sky comments – The summer season begins on the 21st of June at 03:32 Universal Time (UT1, simply UT) or 11:32 PM Eastern Daylight Time (EDT) on the 20th. This is the time the Sun reaches its most northerly declination. The sky in June does not get fully dark until after 10 PM and there are only about 4+ hours to observe. The first solar eclipse of the year is annular and the partial phase is visible in Maine at sunrise on June 10th. I hope at least some of you see the partial phase at a maximum of 74%. At my longitude it was possible to observe the complete total phase of last month's lunar eclipse. I went outside to observe and the Moon was half eclipsed. It was time for breakfast and I returned in plenty of time to observe totality. Unfortunately the humidity was high and it had completely fogged and the Moon was no longer visible. Fortunately the eclipse was broadcast on several internet sites and I observed with their help.

Planets this month – The last quarter Moon is on the 2nd and new Moon (lunation 1218) is on the 10th. First quarter is on Thursday the 17th and the Moon will be full on Thursday the 24th. On the 11th of June Mercury will achieve inferior conjunction and is not visible all month. Venus achieves its most northern declination of the year on the 12th and is easily seen by Northern Hemisphere observers while it is only 18° from the Sun. It then remains visible all month. Mars is low in the WNW sky in the evening twilight. It passes directly through the Beehive Cluster (M44) on the 23rd. If you have a low horizon you might observe it. Jupiter is in Aquarius and begins retrograde for four months on the 22nd. The moon passes about 5° south on the 1st and again slightly closer on the 28th. Saturn is retrograding in western Capricornus having past opposition. The waning gibbous Moon passes 4° south of Saturn on the night of the 27th. Uranus is slowly emerging in the morning sky but is difficult to observe. Neptune is in central Aquarius in the morning sky. Pluto is still in western Sagittarius.

Constellations for the month – This time of the year the Zodiac constellations are located far south in the sky and consequently the tail of the constellation Scorpio scrapes the horizon and the bottom of the constellation is on the horizon as it is quite long and Maine is located almost halfway between the equator and the North Pole. More about Scorpius is below in the featured constellation section. Above and to the right of Scorpio is the constellation of Libra, the scales. Libra is the only inanimate object in the Zodiac. In ancient time Libra may have been connected to the scorpion by some but these claws almost universally were considered a separate constellation by most and represented justice. To me the most interesting thing in Libra are the two bright stars Zubenelgenubi (α Lib) [see below] and Zubeneschamali (β Lib) and the way they sound. There are no Messier objects in Libra and only a few galaxies none worth observing except with larger telescopes. Below and to the west of the tail of Scorpio we at this latitude can see some of the stars of the constellation Lupus, the Wolf but it is not worth our time trying to observe. Above and to the east of Scorpio and Libra are the constellations of Serpens Caput, the Head of the Snake and Ophiuchus, the Serpent-Bearer. Further to the east is Serpens Cauda, the Tail of the Serpent. All three are portions of the myth of Aesculapius the founder of medicine represented by Ophiuchus wrestling with a serpent. Serpens Caput contains one Messier object M5 (NGC 5904) a very fine globular cluster located 11½° north of Zubeneschamali (β Lib) and 7½° SW of Unukalhai alpha (α) Ser. Do not miss M5. Serpens Caput is connected on the east to Ophiuchus, the Serpent Bearer. Ophiuchus contains 7 Messier objects all globular clusters. Globular clusters are prominent this year because most orbit around the center of our galaxy the Milky Way now making its way into the sky from being low around the horizon. Ophiuchus contains numerous double stars. One of the easiest to find is located 3° NNW of Antares. 5-rho (ρ) is an easy double but you will probably notice another star there also so you can consider it a triple system. 7° due west of Antares we find the first of the Messier globular clusters M19 (NGC 6273). M19 is bright but small. Immediately to the west of M19 is one of the easiest dark nebula to observe "The Pipe Nebula." Get out your binocular and pick out this hole in the stars. It does look like a black pipe with smoke coming out. 4° south of M19 is M62 (NGC 6266) a globular cluster interesting because of its uneven core of stars. You may want to explore this area as there are other globular clusters in this area but we will now go to M9 (NGC 6333) a globular cluster with many lanes of stars. It is found 3½° SW of eta (η) the star at the bottom left of the body of Ophiuchus. Next is M107 (NGC 6171) a small globular cluster for a Messier object reflected in the high M number. It is found 2½° SSW of zeta (ζ) the middle star at the bottom of the body. The next three globular clusters were more difficult for me to find as they are not near any prominent stars but they are all bright making finding them easier. A good star chart helps with all these globular clusters. M10 (NGC 6254) and M12 (NGC 6218) are both located within the body of Ophiuchus and visible with binoculars. From Marfik, lambda (λ) Oph the 4th mag. middle star on the west side of the tent shaped body of Ophiuchus go 5½° SE to find M12 then go 1½° past two 7th magnitude stars to M10. Both clusters are large, bright, and beautiful. The last Messier globular cluster in Ophiuchus is M14 (NGC 6402). There are no visually bright stars near it. From M10 go 10° slightly north of west to find M14. It is bright enough to find but it took my 12" telescope to hint at stars being resolved. Above Ophiuchus is the constellation Hercules, the Strongman and to the west above Serpens Caput is the constellation Corona Bore-

alis, the Northern Crown. Corona Borealis represents the crown given to a victor. In Greek mythology it was the crown given to Ariande by Theseus who had killed the Minotaur in the Labyrinth made by her father. The constellation only contains a number of dim galaxies we will not try to find. Last month I said we would look at the constellation Boötes, the Herdsman (see below). Back to Hercules, a demigod born of the union between the god Zeus and the mortal Alcmene. Zeus's wife Hera was suspicious Hercules was the child of Zeus because the child was extraordinarily strong. (The Greek name of Hercules is Heracles.) The constellation had been previously known simply as "The Kneeler." The constellation Hercules is best known because of the globular cluster M13 (NGC 6205) but there are two other globular clusters easily visible in most telescopes and one of them also has a Messier number M92 (NGC 6341). The other is NGC 6229 a smaller globular visible in most telescopes. To find M13 locate the squashed square of stars known as the keystone just to the left and slightly above Corona Borealis. Then go ¾ of the way up the west side to find M13. At a dark site M13 is visible to the naked eye as a "fuzzy" star. It was discovered this way by Edmond Halley of comet fame in 1714. This is the best globular cluster you can see unless you travel to far southern Florida and observe Omega Centauri the largest globular cluster in our galaxy which may actually be the core of a dwarf galaxy which has had its outer stars stripped away. If you can pull yourself away from M13 look for NGC 6207 a spiral galaxy located in the same low power field as M13. A big binocular shows it but use more power for a better view. It is only ½° NE of M13 and at mag 11.6 the brightest galaxy in Hercules. Give it a try. M92 (NGC 6341) is located 6° north of pi (π) the 3rd magnitude star at the NE corner of the keystone. Just because it is a bit out of the way do not miss it. M92 is a very nice globular cluster deserving of more attention, if it was not so close to M13. To me it looks a little flattened on one side. Is there a small dark nebula dimming that side? What do you think? The last globular cluster in Hercules is NGC 6229. It is observable with my 8" telescope but my 12" allows me to resolve a few stars with averted vision and it looks slightly granular. To find it go 7° NW of M92. It is slightly over 1° NNW of 52 Her the 4th magnitude star 6° NW of M92. Above Hercules and just slightly to the east there is another almost keystone like the one in Hercules forming the head of Draco, the Dragon. Do not confuse this keystone with the one in Hercules as I have occasionally because you will not find M13 in this one. It is smaller and we have observed it earlier in the year. As long as you keep your directions straight this will not happen and the two do not really look alike. For us Draco is a circumpolar constellation and never sets. This time of the year is the best time to follow Draco as it winds around Ursa Minor, the Little Bear the constellation most everyone has heard of but are not very familiar. Probably the most famous star in the sky is in Ursa Minor, Polaris, alpha (α) the North Star. Polaris is also the end of the tail of Ursa Minor and helps form the asterism, the little Dipper. Ursa Minor is a convenient way to determine the brightness of the sky by comparing magnitudes of the stars. Polaris is mag 2, along with Kochab, beta (β) at the end of the "bowl" of the constellation. Pherkad, gamma (γ) the other star at the end of the bowl of the "Little Dipper" is mag 3, followed by delta (δ) and epsilon (ε) the other two stars in the handle of the "Little Dipper" at mag 4. The star joining the handle to the bowl is Zeta (ζ) also at mag 4. Finally if you can see eta (η) the other star forming the "bowl" at mag 5 you have a pretty dark sky. Draco contains few bright stars making it difficult to trace through the sky but since the head is conspicuous it is best to begin there. From the head of Draco (we located it earlier in the year) we go NNE toward the north celestial pole but before it gets there it turns back SW before curving around the body of the little bear where the alpha (α) star of Draco, Thuban alpha (α) Draco forms a long triangle with the two end stars of the dipper. Thuban (mag 3.6) is not the brightest star in Draco but is the easiest star to find. Thuban is famous because of precession it was the Pole Star when the great pyramids were built around 2600 BC and they were aligned to its position at that time. Thuban as a pole star is not as bright as our Polaris but when you did not have electric lights to light the sky almost magnitude 2 was bright. Draco contains numerous dim galaxies and one notable planetary nebula, the Cat's Eye Nebula a green planetary with the central star visible in most telescopes.

Featured star – Zubenelgenubi (Alpha Librae) is an interesting wide yellow and white double star separated with binoculars. The Arabic name loosely translated means south claw referring to the time it was considered to be a part of the constellation Scorpio. Because of the two contrasting colors yellow and white to some naked eye observers Alpha Librae appears to be a green color. The two components travel in space with a common motion; therefore, they are apparently gravitationally bound about 77 light-years (24 parsecs) from our Sun. The brighter of the two (α^2) is also a spectroscopic binary. The second member, α^1 Librae, is separated from the primary system by around 5400 AU. It too is a spectroscopic binary with an orbital period of 5,870 days and an angular separation of 0.383 arcseconds; equal to about 10 AU. The system may have a fifth component, the star KU Librae at a separation of 2.6°, thus forming a quintuple star system. The two systems are probably members of the Castor Moving Group of stars that have a similar motion through space and share a common origin some 200 million years ago.

Featured Messier object – M6 known as "The Butterfly Cluster" is a naked eye open cluster found at this time of the year low in the sky in Scorpio. It was noted by Ptolemy in the 2nd century but it was not recognized as an open cluster until sometime before 1654 by the early astronomer Hodierna using a 20X telescope. To find it look 16° WSW of Antares. Do not confuse it with M7 a more open cluster 20° SW of Antares. If you do not note it visually use you finder scope. A small telescope at low power is the way to observe this open

cluster. It is 10 times farther away than it is across and spans ½° in the sky so any magnification more than about 40X is too much to observe the whole cluster. There is a grouping of 7 or 8 stars forming a "V" shape I like to call the butterfly's antenna. From there you can imagine other stars spreading out right and left to the rear from this grouping to form the body and wings of the butterfly. How do you see this open cluster?

Featured constellation – Last month I said we would look at the constellation Boötes, the Herdsman. Boötes is one of the oldest constellations but the name origin has been lost. The only definite mythology of Boötes comes from the Romans who called him the Herdsman of the Septemtriones, the seven oxen represented by the seven major stars of "the Big Dipper." As a modern constellation Boötes holds the leash of Canis Venetici, the hunting dogs. The constellation has the shape of a kite trying to take off. To appeal to the youth at planetarium shows, Boötes is usually called "The Ice Cream Cone." The Sumerians called him the man who drives the great cart. The only real interesting Boötes object is the alpha (α) star, Arcturus, the 4th brightest star in the sky. Its main use is as a guide star to other stars in the sky as in the saying "arc from the handle of the big dipper to Arcturus and spike on to Spica." An obscure object in Boötes of interest to me is NGC 5466. This is a globular cluster listed as a challenge object to meet one of the requirements to obtain the Astronomical League Globular Cluster Observing Club award. Located 4° west of M3 (NGC 5272) or follow a curve of stars NW of 9 Boötes to NGC 5466. It is not hard to identify if you realize at Shapley-Sawyer concentration class of XII it contains less stars than most other globular clusters.

Other objects of interest – NGC 6369 the "Little Ghost Nebula" is a planetary in Ophiuchus. To find it go to a line of 3rd and 4th magnitude stars a little over 10° east of Antares and follow these to this planetary. It is bright enough to see in a small telescope but a larger telescope is needed to see it as a ring. Its name fits it well, it is "ghostly." NGC 6366 is a globular cluster in Ophiuchus. It is found 3° SW of M14 just east of a 4th mag star. It is actually larger than M14 but it is in the class of globular clusters with the lowest surface brightness thus more difficult to observe. It almost looks like a large dim open cluster. NGC 6217 is a barred spiral in Ursa Minor forming an equilateral triangle with eta (η) and zeta (ζ) outside the bowl portion of the constellation. It can be located with an 8" telescope but a much larger telescope is need to see much detail.

Our city lights they steal the night away.
Bill Shackelford