Penobscot Valley Star Gazers

An Astronomical Society of Central Maine

http://www.gazers.org

September 2021

The mellow moon, the changing leaves,
The earlier setting sun,
Proclaim at last, my merry boys,
The harvest-time begun.
- Charles G. Eastman

Attend From Home

The PVSG returns to meeting remotely via Zoom on Monday, September 13, 2021 at 6:30 pm. We are unaware of any program or agenda, though Don may discuss a new meeting location.

There was no formal program last month, but we could thank all who participated in the discussion about the telescope and books that had been donated to the club.

Also, remember that next month is October, the dues month.

Donation Discussion

PVSG Monthly Meeting Minutes
August 9, 2021
Live & 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 joined by Zoom videoconference. The meeting was called to order by Don Ferrell at approximately 6:35 PM.

Attendance:

Members at John Bapst Memorial High School:

Don Ferrell – President
Dwight Lanpher – Club Liaison & Member-At-Large
Scott Burgess
Don Krause
Ralph Mallett
Jeff Waring
Mary-Frances Beesorchard

Members Online:

David Clark – Treasurer
Phil Normand – Secretary
Bill Shackelford
Ralph Foss
Shawn Laatsch
Alan Davenport
John Schuster
Jill McDonald

Program

Don started the meeting by bringing up the donation made to our club of an older Meade LX-200 8" SCT and a collection of astronomy books. The electronics on the LX-200 are non-functional. The group discussed how best to make the scope useable and most thought de-forking the scope and using it on an equatorial mount would be best. Discussion will continue at the next monthly meeting. For now, Don will keep the equipment and books at his house. Don said he would send the list of books to the group and ask folks to list the top 3 books they might want.

Secretary's Report and Acceptance of Minutes

The July Meeting Minutes were unanimously accepted.

Treasurer's Report

Dave reported that as of of June 2nd, our account had a total of $394.37. The Treasurer's report was unanimously accepted.

Observing Reports:

Jill reported that she had good weather to observe Saturn at its opposition. **Dave** reported that he was down on Cape Cod and visually observed Venus, Saturn and Jupiter. Using 8X40 binoculars, two of Jupiter's moons were observed and Saturn appeared oblong. **Dwight** held an observing event at a campground on MDI for around 25 people using his Stellina telescope and a laser pointer to give a tour of the constellations. **Dwight** mentioned that we are near the peak of the Perseid meteor shower and that he had seen a dozen or so meteors last night. **Shawn** said he had received calls from people that had seen bolides. He also mentioned that there will be a SLOOH observing session Friday night at 8:30 with the Universe Explorers of Maine group. **Bill** said it had been quite smokey in Oklahoma lately due to wildfires in Canada.

Old Business

Shawn was able to give a talk about the Sun to the day campers at the Challenger Center on August 2nd even though it was cloudy.

Phil brought up the upcoming Maine State Star Party at Cobscook State Park on August 27th-

28th. Dwight, John and Phil said they were planning on attending with others expressing interest as well.

New Business

Shawn announced the major re-launch of the Astronomy Center at UMaine. The Versant Power Astronomy Center will have special programming this Friday through Sunday. Shawn also mentioned that a new roll-off observatory was being built at the Francis Malcolm Science Center in Limestone Maine as an Eagle Scout project by Conner St. Peter

Adjournment

The meeting was adjourned at approximately 7:45 PM.

Phil

Observe The Sky This Month

Some Selected Objects

September 2021

General sky comments – Life has been close to normal for me and events not held in our area last year have returned. School has begun with in person learning and the girls' softball team has been having some success. Boys' football is also beginning. I had forgotten how much fun a good old fashioned county fair can be. The tractor pull was exciting when farmers are able to modify a tractor in the unlimited class and pull the weight sled twice as far as a stock farm tractor. I entered a few things and won a couple of blue ribbons and one purple ribbon. We know fall is in the air when the Equinox happens on the 22nd at 19:21 UT.

Planets this month – New Moon (lunation 1221) in September was on Monday the 6th. First quarter is on the day of our monthly meeting the 13th, full Moon is on Monday the 20th, and last quarter is on Tuesday the 28th. Mercury for our southern hemisphere friends makes its best appearance of the year. Mercury will be the farthest from the sun (aphelion) on the 6th and the farthest east (eastern elongation) on the 14th. For us it is at a very poor angle giving us one of the worst appearances for the year and it will only shine at mag. 0.1. A thin crescent moon passes almost 6° to the north of Mercury on the 6th. Venus begins the month at 40°north elongation from the sun but is poorly placed for observation due to the unfavorable angle of the ecliptic. It passes 1.7° north of Spica on the 5th. The three-day-old crescent Moon passes 4° to the north on the 9th. Mars is too close to the sun to be seen. Now past opposition, Jupiter is well up in the eastern evening sky after dark. The waxing gibbous Moon passes 4° to the south on the 17th-18th. Saturn is now well past opposition and in retrograde in Capricornus. The waxing gibbous moon passes by 4° to the south on the 16th-17th. Uranus rises before midnight as it approaches its Nov 5th opposition. Neptune is at opposition on the 14th, 4.0 light-hours, 28.9 au from Earth and visible all night in Aquarius. Pluto remains in Sagittarius at magnitude 14.

Constellations for the month – Last month we observed some of the last of the summer constellations and most of them remain visible and ready to be viewed if you have not done so. We will add a few more this month and take advantage of the excellent sky conditions and weather occurring this time of the year. This month when the sky becomes completely dark known as "Astronomical Twilight" the following constellations will be visible starting with the constellation most southern for us, Piscis Austrinus, the Southern Fish. I usually think of this constellation as a fish with its mouth wide open and turned up to catch the water falling through the sky from the "Water Jar" of Aquarius, the constellation above. Piscis Austrinus is very simple to find. Low in the sky about 10 to 15 degrees above the horizon you will see the 1st magnitude star Fomalhaut. It will not be as bright as you might expect due to the low altitude, but it marks the bottom of the mouth of the fish. Dimmer stars form the body of the fish. If it was not for Fomalhaut and a few double stars, Piscis Austrinus would not be worth observing for us. The easy double star 4.3 and 7.1 magnitude Beta (β) 6° WSW of Fomalhaut, Dunlop 241 a pair of orange stars 1° NW of Beta, and H VI 119 a triple system 1° slightly west of south of the top star of the "Fish," epsilon (ε), with a close pair of yellow stars and a more distant blue star. Above is the constellation Aquarius, the Water Bearer. Aquarius, the Water Bearer is a long constellation and covers a large segment of the sky one end of which protrudes into the summer constellations. When I look at the total constellation of Aquarius I imagine a person holding a jug under their left arm with water pouring out of a jar of water, breaking into three streams one of which pours into the mouth of the southern fish and the other two pour into a river. The jug with the water pouring out is represented by a diamond of four stars, Sadalmelik alpha (α), Sadachbia gamma (γ), zeta (ζ), and pi (π) ranging in brightness from magnitudes 2.9 to 4.4. The water coming out of the jug is represented by the 4.0 magnitude star eta (η). Arching down SW we come to a grouping of five stars where the water from the jug breaks up into streams. Three of the stars are close together and two are separated a bit. They are phi (φ), chi (χ), and 1, 2, 3 psi (ψ). Less than 1° NNW of the middle psi (2) is the galaxy NGC 7606 a spiral easily seen at 136X with some detail using my 12" telescope. From 1, 2, 3 psi (ψ) go 6° SW to a pair of galaxies, NGC 7727 and NGC 7723. NGC 7727 is a barred spiral but I could only note the center had several parts. NGC 7723 is likely a disturbed spiral galaxy as I could detect an unusual looking center. The last object I have observed in Aquarius is the Helix Nebula NGC 7293 found 21° south of the eastern tip of the water jug. This planetary nebula should be observed by everyone. The following are my field notes: Large, brighter than expected. Numerous stars visible inside. What appears to be the central star was just visible at 13th mag. with averted

vision at 150x. This was with a 12" telescope but smaller telescopes also give a nice view of this bright planetary nebula. Above the "Water Jug" we will pass through the western third of another fall constellation, Pegasus, the Winged Horse. We will discuss it next month. At this point I realized that last month I failed to mention one of the nicest easy to recognize summer constellations in the sky located between Equuleus and Vulpecula. It is Delphinus, the Dolphin. Delphinus actually resembles a Dolphin by having a diamond shaped group of third mag. stars for the body and a fourth mag. star for the tail. One of our emeritus members Roland Cormier would always mention the nice double star at the nose if the dolphin. It consists of a deep yellow and a rare green star. It is not really green but looks that way from the contrast with the yellow star. 3½° west of this star is a globular cluster NGC 7006. This globular cluster and globular cluster M15 located 8° SW should also be noted. M15 will be expanded upon in our Messier object of the month covered below. Going north we now come on an obscure constellation Lacerta, the Lizard. Lacerta was created by Hevelius to cover an area not otherwise covered in the sky. It contains mostly 4th and 5th magnitude stars but is not particularly difficult to observe in a reasonably dark sky. The major features of Lacerta are three open clusters. NGC 7296 is located ½° east of Beta (β) Lacerta the top star in the constellation. This will probably be the most difficult object you will observe this month. It is a collection of two to three dozen faint stars resolvable at 100X with a larger telescope. NGC 7243 is much easier to find 2½° SSW of Beta (β). This cluster is a semi-circle of stars with a tight grouping of four or five stars at the bottom center and it stands out in the field of background stars. Continue another 3½° on SSW of NGC 7243 to find NGC 7209 an open cluster of 75 to 100+ stars depending on the size of your telescope at 100X. NGC 7209 is surrounded by several brighter stars not part of the cluster. Above Lacerta is Cepheus, the King. Look for it below in Featured Constellation.

Featured star of the month – Fomalhaut, alpha (α) Piscis Austrini at mag 1.16 is the brightest star in the constellation Piscis Austrinus the southern fish. It is a main sequence Vega like star. Abbreviated as α PsA at a distance of 25.13 ± 0.09 ly. Fomalhaut has two companion stars, a main sequence K-type star and a M-type red dwarf star making it a triple system. Fomalhaut was the first star to have an exoplanet, Fomalhaut b (Dagon) seen at visual wavelengths. It has been suggested from new data and examination of old data Fomalhaut b is not a planet but an expanding dust cloud resulting from an old collision. The name comes from an Arabic name *Fom al-Haut* literally "mouth of the whale". Although Fomalhaut is listed as a southern star, it is located at a declination similar to Antares and greater than Sirius. There should be no reason not to observe Fomalhaut.

Messier object for the month – Messier15 is a class IV globular cluster located 4° NW of Equuleus. This fine globular cluster has a sparkling bright core with many chains of stars radiating outward. It was found by Maraldi in September of 1746 while searching for the Chessaux Comet. Messier rediscovered it in 1746. The east side of the cluster is slightly less dense than the western half. In larger scopes 12" and over with 175x the 13 mag. stars in the core can be resolved along with a dark area SW of the center. This is one of the best medium size globular clusters and is fully resolvable.

Featured Constellation – Above Lacerta is Cepheus, the King. I think the constellation looks like a big head with a pointed nose wearing a pointed hat but to others it resembles a house with a pointed roof. Cepheus was the king of Ethiopia, husband of Cassiopeia, and father of Andromeda. The mythology of this family we have covered before. The precession of the axis of the Earth brings the direction of the future North Pole through this constellation with Errai, gamma (γ) the top star in Cepheus the pole star in 2,000 years and the alpha (α) star Alderamin the pole star in 4,700 years. The pole also passes near Alfirk, beta (β) but not as close as the other two stars. Halfway between Alderamin and iota (ι) is the white and light yellow double star Kurhah xi (ξ) cep. This double is a true pair. At the bottom left side of Cepheus is the star delta (δ) cep the original Cepheus variable star. 5½° ESE of Alderamin is one of the deepest red stars in the sky known as Herschel's "Garnet Star." This star looks the reddest in small telescopes and near minimum magnitude. This star is similar to Betelgeuse being a pulsating red supergiant but likely brighter considering the differences in distance of the two. NGC 7160 is an open cluster 4° W of Alderamin. It contains about a dozen stars with a couple of brighter stars one being double. 4° NE of Alderamin is the open cluster NGC 7142 a large loose collection of about 100 stars. 2½° E of delta (δ) is the open cluster and emission nebula NGC 7380. It contains near 30 stars embedded in an emission nebula visible without aid but a UHC filter brightens it considerably.

Other objects for the month – If you have a medium to large telescope look for NGC 40 (Caldwell 2) a round planetary nebula with a bright section on one side 5½° ESE of Errai, gamma (γ) Cepheus. I found it by star hopping from Errai using a star chart. Some have said it almost looks like the planet Mars with its polar cap but without the red color. The central white dwarf star is visible at powers above 200x.

Bill Shackelford
Come view with me as we observe the sky