Penobscot Valley Star Gazers

An Astronomical Society of Central Maine

http://www.gazers.org

Poor robin redbreast,
Look where he comes;
Let him in to feel your fire,
And toss him of your crumbs.
- Christina G. Rossitti

February 2021

February Meeting

The February 2021 meeting of the PVSG will be held on Monday the 8th at 6:30 pm via Zoom. The doors will open a little after 6:00 if you want to arrive early for some socializing. At the moment we do not know what the program will be.

Thanks for last month's program go to Dwight for his vacation plans and videos about CERN.

French Attractions

PVSG Monthly Meeting Minutes
January 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.

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 6:32 PM.

Attendance:

Members:

Dwight Lanpher – President
David Clark - Treasurer
Phil Normand – Secretary
Mike Harrington
Alan Davenport
Mary-Frances Beesorchard
Julie & Dale Brownie
Bill Shackelford
Ralph Foss
Ralph Mallett
Don Krause
Don Ferrell
Wade & Donna Smith

Visitors:

Charlie Sawyer

Dwight introduced our newest member Mary-Frances Beesorchard who gave a little information about her love of astronomy and hopes for post pandemic viewing.

Programs and Astro Shorts

Program: Dwight showed a program about where he'd like to travel after the pandemic is over - Southern France and Geneva. He showed the Millau Viaduct and the Roman aqueduct called Pont du Gard. He also showed the Strausbourg Cathedral Astronomical Clock and CERN in Geneva Switzerland. Dwight played a video about the Large Hadron Collider. Dwight then played two short videos on the Future Circular Collider which will be 73 KM long and be constructed nearby to the LHC.

Secretary's Report and Acceptance of Minutes

Minutes were unanimously accepted.

Treasurer's Report

Dave reported that last month's total was $40 too high. This month's total is $691.87. Dave is looking for a check sent by Mary-Frances back in November. The Treasurer's report was unanimously accepted.

Observing Reports:

Wade & Donna Smith observed Jupiter and Saturn on the 23rd and took a picture. He showed it to the group. **Dave Clark** said he had observed the Saturn-Jupiter conjunction before and after the day they were closest due to cloudy weather on the 21st. **Alan Davenport** said he saw the conjunction a few days after the 21st through the trees at his house. He also showed a photo taken by John Meader of the conjunction of Jupiter, Saturn and Mercury taken on January 10th. **Julie and Dale Brownie** saw the conjunction before the 21st, and witnessed a bright meteor passing while observing. **Charlie Sawyer** observed the conjunction before and after the 21st. He also took a picture of M42 and told folks that the picture is on the Downeast Astronomers Facebook page. **Bill Shackelford** said he took pictures with his cell phone on the 21st and 22nd but his scope wasn't working properly.

Discussion of Club Insurance Policy:

Our club yearly insurance policy payment is due. Cost is approximately $325.00 and changes include travel coverage to star parties for

officers only. The club voted unanimously to authorize payment of the insurance premium.

Correspondence:

Dave received a letter from Anna Kellman from Element 3 health who has partnered with the Night Sky Network. This is to give seniors access to club events providing social situations for these folks. Element 3 is a national organization and they may work with local senior organizations. Dwight and/or Dave will look into this further.

Astronomy Picture of the Day:

Dave said that the APOD has posted a video that shows the moon on every day of 2021 with label for prominent craters and other information.

Old Business

Alan asked if we as a club were thinking of donating any money to the Tri-Valley astronomy club in California. It was noted that they had raised a large sum of money and some people who attended that ZOOM meeting had contributed individually.

New Business

Alan asked the group what forums and chat groups people were using. Cloudy Nights forums were mentioned.

Don Krause asked the club for an explanation of the conservation of angular momentum. Dwight and Dave gave explanations.

Adjournment

The meeting adjourned at approximately 7:42 PM.

Phil

Observe The Sky This Month

Some Selected Objects

February 2021

General sky comments – For once the monthly meeting of PVSG is the earliest it can be according to the bylaws. From now until this coming weekend would be an excellent time to do a little observing when the moon is not interfering. However, an arctic cold front is on its way and it may be the coldest it has been for a number of years. You may want to pass depending upon the weather. On Ground Hog Day it was predicted we will have six more weeks of winter and this will come to pass no matter what the prediction. February 2 is the first cross-quarter day of the year, halfway between the start of winter and the beginning of spring in more than six weeks. Look forward to the equinox on March 20. It will arrive and none too soon.

Planets this month – The moon is at last quarter on Thursday the 4th, the new moon is on Thursday the 11th, first quarter is on Friday the 19th, and full moon is on Saturday the 27th. Mercury is too close to the sun to be observed early in the month but by mid-month it has moved far enough away from the sun to be seen in the early morning. By the end of the month Mercury will be making its best morning appearance of the year. Venus is visible low in the southeast morning sky. Mars is in Aries then moves into Taurus mid-month and still high in the sky early. It has shrunk to only 7 arc/sec in diameter. Jupiter is in Ophiuchus all month where it will be most of the rest of the year. Saturn is in Sagittarius in the early morning sky and will remain there until much later in the year. Uranus is in Pisces when the month begins then passes into Aries early in the month. It sets before midnight. Neptune may be viewed with a telescope in bright evening twilight before it is in conjunction with the sun next month. Pluto is in the morning sky in Sagittarius.

Constellations for the month – The northern portion of Puppis, the ship's stern, protrudes into the Maine sky adjacent to the left portion of Canis Major, the big dog (See below) and contains 3 Messier open star clusters (M46, M47, and M93), 70 other listed open star clusters, bright and dark nebulae, emission nebulae, and planetary nebulae. I have observed all the Messier objects, one open star cluster, and one planetary nebula (NGC 2438) in Puppis. I have a few yet to observe. Canis Major contains one Messier object M41 an open cluster and the brightest star in the sky Sirius. (See below) Above Puppis and Canis Major is the constellation of Monoceros, The Unicorn. Monoceros, the Unicorn was named by an unknown observer but it showed up first on a star globe made by the Dutch cartographer Petrus Kaerius in 1613. It has no pattern representing anything except maybe with a lot of imagination a unicorn. There are no bright stars but it is full of interesting items including open clusters, various nebulas of many different types, and even one spectacular triple star system Beta (β) Pup. Monoceros is dim

but not hiding, mostly located west and northwest of Sirius. From Sirius start exploring Monoceros by going 8°NE of Sirius and you should find the Gum1 nebula and a couple of open clusters one on the right and one on the left sides of the nebula. If you have already found M50 Gum 1 is 2°SSE along with NGC 2335 and NGC 2343. Do not confuse the two with the nebula. NGC 2335 has more stars. If you have trouble finding Gum 1 look for the two open cluster less than 1°apart. To find two of the most interesting objects in Monoceros it is easier to start with stars in the constellation Gemini, the Twins. Begin at the foot of the twin Pollux. (Note the feet of both Castor and Pollux are formed by a line of 2nd, 3rd, and 4th magnitude stars). Begin at the lowest of the stars mag. 3.33 xi (ξ) Gemini and mag. 4.5, 30 Gemini then proceed 3° SE to NGC 2264 an emission nebula complex in Monoceros below the feet of Gemini comprising the Christmas Tree Cluster, the Cone Nebula, and Trumpler 5. The complete complex is best viewed with a 10X50 binocular or finder scope. With a reflector telescope under low power it resembles a Christmas tree with the cone nebula the topper. A non-reversing binocular makes the tree effect go away. Below NGC 2264 is the Rosette Nebula surrounding NGC 2244 an easily seen open cluster. NGC 2244 contains about three dozen stars. The Rosette has low surface brightness thus best seen with a 10X50 binocular or a wide field telescope on dark nights at low power. It is almost 2° in size covering four times as much area as the moon. It has one Messier object M50 (NGC 2323), many nebulae, and open star clusters. For a real treat get out your binoculars, if you have more than one each of a different power and aperture so much the better, and observe this constellation. Proceeding upward from Monoceros we come to the constellation Canis Minor containing the stars Procyon, "Before the Dog", alpha (α) CMi magnitude 0.4 along with Gomeisa (an old Arabic name for Procyon) beta (β) CMi magnitude 2.9. These two stars comprise almost all of the constellation Canis Minor. Next above is the constellation Gemini, The Twins. Gemini is an ancient constellation and one of the members of the Zodiac. The twins are characterized by the two stars Castor and Pollux representing the twin's heads and parallel strings of stars their bodies. Gemini contains one Messier object M35 (NGC 2168), numerous open clusters, and several planetary nebulae. Especially notable is NGC 2392, the Eskimo or Clown Face nebula. Above Gemini is a modern era constellation Lynx, created by Johannes Hevelius. This constellation is long, covering almost 3 hours of R. A. but because it is so high in the sky toward the north all of it is easily observed. Lynx is dim but at a dark site easily traced in the sky. It contains some beautiful galaxies and many multiple star systems. If you have a dark sky Lynx is a real treat to observe and even part may be observed with binoculars. Among these galaxies in Lynx are NGC 2859 a bared spiral located next to a 7th magnitude star less than 1° ENE from alpha (α) Lynx and NGC 2683 an edge-on spiral galaxy located 6° WSW of alpha (α). If you have trouble finding NGC 2683 look a degree of so NW of the star grouping of 1-4 sigma (σ) Lynx, it can be seen with binoculars. Multiple star systems in Lynx include 5, 19, and 38. Do not dismiss this constellation it is one of my favorites. Above Lynx is another modern era constellation, Camelopardalis, the Giraffe. It was apparently invented in 1613 by the Dutch map maker Petrus Kaerius. Camelopardalis contains one very fine open cluster (NGC 1502), a bright planetary nebula (NGC 1501), and many galaxies including an easily observed one, NGC 2403. From NGC 1502 follow a string of stars upward to the NW. This is the asterism Kemble's Cascade one of the most beautiful asterism in the night sky.

Featured star – Sirius, the Dog Star is the brightest star in the sky with an apparent magnitude of -1.46. Its name came from the Greek name Σειριος loosely translated as "the scorching one". It is in the constellation of Canis Major and found 2.6 parsecs (8.6 ly) distant. It is a class A1 star that is fairly young at around 237 million years old. It is expected to live for another 270 million years. Sirius was important for several ancient groups of people. For the Greeks the appearance of Sirius in the morning sky marked the beginning of the summer months and the so-called "Dog Days". In the Iliad Achilles called Sirius Orion's hound. For the Egyptians its appearance forecast the flooding of the Nile and the renewing of the land. Since ancient times the appearance of Sirius just before the rising sun hides it (known as the heliacal rising) has now changed due to precession to early August. The Polynesians used this later date of late July or early August for the appearance of Sirius as the beginning of winter and the start of the sailing season when it was an important navigational tool. The native people of the American plains also used the later late July to early August appearance to know it was time to leave the cool mountains and return to the prairie. Sirius is a double star with the companion being discovered on January 31, 1862 by Alvin Graham Clark while testing an 18.5" lens being built for the University of Mississippi. Finally in 1889 the lens was installed in a new telescope in the Dearborn Observatory under the directorship of the Chicago Astronomical Society and the old telescope mount transferred to the Adler Planetarium. The ownership of the telescope has been transferred to Northwestern University where it is used to this day for astronomy classes and public observing on Friday nights much like the University of Maine uses their Clark telescope. The primary star Sirius A and the secondary Sirius B were likely originally a pair of blue-white stars with Sirius B slightly larger. Sirius B became a red giant star and eventually evolved into a white dwarf in orbit with Sirius A. It may be during this transformation Sirius A became rejuvenated into the younger star we see today.

Featured Messier object – M93 (NGC 2447) is an open cluster in the constellation of Puppis, the Ship's Stern. It was discovered by Messier in March 1781. It is located around 3,400 light years distance. It is a wedge shape cluster of at least 100 stars. In the middle of the cluster is a noticeable starless section giving the wedge shape to the cluster. M93 at first glance is

not as spectacular as M46 but with larger telescopes 12” and up M93 comes into its own with chains of stars radiating from the tip of the wedge. Then it is truly spectacular. A not to be missed open cluster.

Featured constellation – Canis Major, the Big Dog is one of the two hunting dogs of Orion. The other is Canis Minor. Canis Major sits beside Orion with his big eye Sirius looking at Lepus, the Hare at the feet of Orion. Canis Major is not a very big constellation, only 380 square degrees of sky but contains many interesting objects. These include the open star cluster M41 (NGC 2287) at the top of the list. I noticed a couple of red stars along with the majority of blue-white stars. I have also observed open cluster NGC 2204 with 3 other open clusters on my observing list, NGC 2354, NGC 2360, and NGC 2362. The Big Dog also contains numerous double stars.

Other objects of interest – Monoceros also contains open clusters NGC 2232, 2286, 2324, and 2301 that I have observed. There are a couple of other items on my observing list. Within M46 in Puppis is the planetary nebula NGC 2438. It is not difficult to observe although you may not notice it at first glance.

Lens cover removed, enjoy the night

Bill Shackelford