Penobscot Valley Star Gazers

An Astronomical Society of Central Maine

http://www.gazers.org

December 12
1961: OSCAR 1 launched, first amateur radio satellite.
1970: Italian ground crew becomes first to launch satellite for America, Explorer 42.

December 2022

December Meeting

The next meeting of the PVSG will be held via Zoom on Monday December 12th at 6:30 pm. (Meeting ID 862 9984 6478 Password: PVSG.)

PVSG Monthly Meeting Minutes
November 14, 2022

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.

My apologies for not being on top of the minutes this month. I will be sure to have the minutes for November and December ready for the January 2023 meeting.

Thanks,
Phil Normand

Observe The Sky This Month

Some Selected Objects

December 2022

General sky comments – The winter solstice is on Wednesday December the 21st at 9:15 pm EST. The Geminids meteor shower peaks in the late evening of Wednesday the 13th. Observe them then but best late morning of the 14th. The Ursid meteors peak on Thursday the 22nd. The Moon will not be a problem as it is past last quarter and almost new moon. I did not see the December 7th occultation of Mars by the Moon from my home in Oklahoma as it was overcast and foggy. I did watch the live broadcast from the Griffith Observatory in Los Angeles and recorded a few screen shots.

Planets this month ¬ Full Moon is on Wednesday the 7th, before the PVSG meeting on the 12th, last quarter is Friday the 16th, new moon (lunation 1237) is on Friday the 23rd and first quarter is on Thursday the 29th. Mercury emerges from the sun during the second week of the month. It reaches maximum elongation on the 21st when it shines at mag. -0.6, 20° east of the Sun, and 5°east of brilliant Venus. Both inner planets achieve conjunction 1.4° apart on the 28-29. By then Mercury will have faded by almost a full mag. and you will need a binocular to observe the event. Venus is slowly emerging from behind the Sun into the evening twilight very low in the southwest after sunset and joins a very young waxing crescent Moon entering into the frame on the 24th. (This crescent waxing Moon is not observable.)

Constellations for the month – Once again starting at the southern reaches of the Maine sky we begin with the constellation Caelum, the Engraving Tool. This constellation lies at the same latitude as Canis Major which we will note next month. If you live at a location where the Big Dog is visible you may be able to observe some members of this constellation. Caelum may be the most obscure constellation in the sky. It is one of the 14 constellations created by Nicholas-Louis de Lacaille for his planisphere of the southern stars, published in 1756. The alpha (α) star Caeli is magnitude 4.5. Above is the next constellation Eridanus, the River, the longest constellation in the sky. Eridanus is so long it starts with its beta (β) star Cursa only 5° south of the celestial equator and winds through the sky as a path of stars ending with its alpha (α) star Achernar at -63° S. Cursa is 3° NNW above Rigel, (β) Orion and offers a contrast between beta stars of different constellations. Achernar is well below our horizon. Above the first straightaway of Eridanus is the constellation of Taurus, the Bull with the open cluster Hyades. Don't miss the open clusters NGC 1647 and NGC 1746 between the horns of Taurus. NGC 1746 is one of my most favorite open clusters because it is actually 3 open clusters in one and somewhat of a challenge. I first noticed it with a large binocular (25 x 100). Start with your lowest power to view NGC 1746 and then try to pick out the small concentrations of stars listed as NGC 1750 and NGC 1758 within NGC 1746. NGC 1746 is the grouping of around 20 bright stars. NGC 1750 is the concentration of dimmer stars within NGC 1746. NGC 1758 is the grouping of even dimmer stars partly outside of NGC 1758. Some observers call the whole cluster of stars NGC 1746. Observe this grouping and see if you think it should be one large cluster of stars from very bright to very dim or separate open clusters. The total of all the stars in the three groups is in excess of 75 stars. Included in Taurus is probably the most famous open cluster in the sky M45 aka Pleiades. Also in Taurus is M1 the "Crab Nebula." It is found 1° NE of zeta (ζ) Tauri. Perseus, the Hero is above Taurus (see below). Above Perseus is the dim constellation Camelopardalis, the Giraffe with its brightest star only at mag. 4.5. This is the beta (β) star. The most interesting Camelopardalis view is the asterism "Kemble's Cascade" a string of 8th mag. stars starting

with open cluster NGC 1502 forming an equilateral triangle with beta (β) and alpha (α) Camelopardalis then proceeding to the NW. Get out a binocular for this one. While in this area of the northern sky note Polaris and how Ursa Minor, the Little Bear hangs down toward the North horizon at this time of year.

Featured star – Algol, beta (β) Perseus is the most famous eclipsing variable star in the sky. It consists of a primary star and a secondary star in a close orbit only 6 million miles apart. The primary is a white star 100 times brighter than our sun and the secondary is only two or three times as bright as our sun. Because they are eclipsing stars their period and time of eclipse can be measured and predicted very accurately. The eclipse is 10 hours long (5 hours in and 5 hours out) and can sometimes be completely observed in one night. It has a period of 2 days, 20 hours, 48 minutes, and 56 seconds. There is a slight secondary dip in brightness midway through the period phase when the primary star eclipses the secondary but it is only evident photo electrically. The two stars shine at a combined magnitude of 2.1 most of the time but dip to 3.4 during the eclipse phase. There is also a third and possibly fourth star in the system but they are far enough away from the other members to not participate in the eclipse.

Featured Messier object – M76, The Little Dumbbell was discovered by Pierre Mechain in September of 1780 and then six weeks later re-discovered by Messier. It is usually called the "Little Dumbbell or Barbell Nebula" because of its resemblance to the larger Dumbbell Nebula (M27) in Vulpecula. William Herschel gave it two numbers then Dreyer changed the Herschel numbers to NGC 650 and 651. In small telescopes M76 looks like a small oblong object and using averted vision it can be seen to have two distinct lobes. In larger scopes more detail can be seen. The following is my perception using my 12" telescope. "A pretty blue planetary. It is elongated with a bar on each side. One end is brighter than the other and slightly angled to the other bar." M76 in even larger telescopes can be seen to have an outer shell. The interior shows two distinct lobes connected by a less bright bridge.

Featured constellation – Perseus, the Hero. Last month it was mentioned Perseus saved the maiden Andromeda by turning Cetus, the Sea Monster to stone with the Gorgon, Medusa's head covered with serpents. Perseus was able to cut off Medusa's head by looking at her head in his brass shield and not being turned to stone himself. Perseus the constellation is in the winter Milky Way and thus contains numerous open clusters, diffuse nebula, and surprisingly numerous galaxies. It also contains two Messier objects, the open cluster M34 and the planetary nebula M76. M34 is located 5° ENE of the variable star Algol, beta (β) Persei. M76 the little dumbbell (see above) is located 1° above phi (ϕ) Persei. Also located in Perseus is the famous double cluster of NGC 869 and NGC 884. Known to ancient Greeks and Babylonians as the scimitar Perseus used to decapitate the Gorgon, Medusa. For some reason Messier did not include the Double Cluster in his catalog. We can imagine these two cluster are decorations on a tree since the Christmas Tree Cluster and bright nebula are not viewable this time of year.

Stars should be seen without a light in view
Bill Shackelford

Remember This?

Visiting the Clubs
December 12, 2011
Minutes of the regular meeting of the PVSG at John Babst HS at 6:30 pm in room 210.

Program: **Astrobits** – Bill S. introduced us to the observing program called "Deep Sky" that you can download onto your computer to keep track of your observations.

Speaker: Terri Anderson. She has visited nearly all the astronomy clubs in the state with Dwight and gave her impressions of stargazing with them.

Business Meeting: started at 7:31 with 18 members and 1 guest present.

Secretary's Report: Accepted as printed.

Treasurer's Report: Balance of $627.62 before Bill gets his money out that he put on his own credit card for the calendars.

Mailbag: 1. Terri, Sky & Telescope magazine had article on Asteroid Occultations. 2. Wade S. - The FAA has website about lasers. There is an $11,000 fine for pointing a laser into a cockpit of a plane. In 2005, there were approx. 300 incidences of this happening. In 2011, there were more than 3000 incidences. One man in Texas is being taken to court over it, with a fine of $250,000 at stake. 3 .Julie B – NPR announced that the ISS now has a washing machine. Prior to that, dirty laundry was jettisoned into space to degrade and burn up. 4. Audrey Brown from Bremerton, FL sent her renewal. Bill S. read us her letter.

Observing Reports: 1. Wade S. saw the Northern Lights in Houlton. He took and sent pictures to the group, but they didn't come through. He will try to resend them. 2. Scott B. went to get a 14 1/2" Starmaster for Jeff. It is pretty portable. 3. Dwight L, a week ago Saturday, took out his solar scope. The sun has been pretty active. Alan D. also had his out and saw several prominences that were pretty. 4. Dick K. did some observing at an observatory on the hills east of Oakland, California. He looked through a couple of telescopes. Leah is an 8" telescope, and Rachel is a 20" telescope. 5. Bill S. on Friday night 2-3 weeks ago had some children come to the observatory and see Jupiter and a field star.

Old Business: 1. Carolyn has not sold her telescope. 2. The telescope given to the Jordan Planetarium doesn't work. Dwight may be able to fix the capacitor with solder. 3. Golf course view in Holden looks like a good place for testing out new telescopes. Southern exposure is good, east and west are not bad. The northern exposure is looking out over a building with a security light on it. We need to contact someone to get that light off. Jeff will look into it. The parking lot is convenient, good parking on crushed stone, walk up onto grass for the observing. 4. Dick K. discussed an article in the Dark Sky Bulletin about a town that turned off its street lights and the crime rate actually went down.

New Business: 1. Wade Smith ran into Robin Kennedy at the rock and mineral show in Brewer. Someone has donated a telescope to her class and she would like some help setting it up. Dave C., Scott B., and Alan D. will help her. 2. Bill S. saw Greg Palman who wanted to know how the club was doing. He asked about Dick K. specifically. Greg was an early member whose wife was the first female game warden. 3. Ken Grimes from Winterport has a telescope and came to check out the club. 4. John B. says that Bangor Hydro painted out part of a street light near his property to block some of the light so it would cast a shadow onto John's property. 5. Dwight has a calibrated laser meter which is good for up to 40 mW. Bring lasers next meeting to find out how powerful yours is. 6. Scott B. and Bill S. correctly identified the painting on Scott's wall as IC 2944 in the Southern Hemisphere. It is more commonly known as the Running Chicken Nebula. 7. Event – Transit of Venus will occur again on June 5, 2012 at 6:05 pm just before sunset on a Tuesday. Shall we plan an event? Challenger Center, Bangor Library, golf course in Brewer? 8. Dave C. needs an updated roster for the AL. He also announced that last week, Bangor was the warmest city in the lower 48 states!

Announcements: New Year's Eve party at Carolyn Vose's house in Bangor, 9pm until whenever.

Next Meeting: January 9th at the Jordan Planetarium where we will view the Mayan Prophesy show (30 minutes long).

Meeting adjourned at 8:31pm. Respectfully Submitted, Kathy Chase, Secretary, PVSG