



Penobscot Valley Star Gazers

An Astronomical Society of Central Maine

<http://www.gazers.org>

Although the winter grey with age, yet reigns a sovereign king;
Sol's plastic rays will soon assuage, and usher in the spring.

February 2019

Visit to the Planetarium

The February 2019 meeting of the PVSG will be held at the Emera Astronomy Center on the Orono campus of the University of Maine on Monday the 11th at 6:30 pm. The program is unknown at this time, but is bound to be interesting.

Thanks for last month's program go to Dwight for his detailed analysis of the workings of Lord Rosse's telescope, the Leviathan of Parsonstown.

Visit to the Leviathan

January 14, 2019



January 2019

PVSG Meeting: John Bapst, January 14, 2019
Attendance:
Scott Burgess, Vice President
Dave Clark, Treasurer
Jeff Waring
Don Krause
Alan Davenport
Don Ferrell

Dwight Lanpher, President
Ralph Mallett
Ralph Foss
Shawn Laatsch
Phil Normand, Secretary
Wade and Donna Smith

Meeting was brought to order at approximately 6:31.

Dwight announced that the next meeting will be at the Emera Planetarium at UMaine.

Last month's minutes: Approved with addition of comet Hyakutake as being the comet viewed by Dave.

Treasurer's Report: Current balance is: \$703.07. Dues are due. Treasurers report was approved.

Observers reports:

Wade & Donna: Saw meteor 2 nights ago near zenith.

Dave: Looked at the Orion Nebula with binoculars. Saw comet 46P/Wirtanen near Pleiades with binoculars and then observed it with Don using a telescope a couple days later and also saw Mars.

Shawn: Venus and Jupiter early in the morn-

ing several times this past month.

Don: Did some lunar observing during the daytime.

Member info sharing:

Shawn: Spoke of several activities coming up at the Emera center. Several shows including one on the lunar eclipse with viewing at the Clark scope after if weather permits.

Dwight: Mentioned that he plans to go to the CMAS lunar eclipse gathering Pot Luck with inside viewing through electronic setup to the outside scope.

Gathering at Bombahook observatory (Brian Murphy's house).

Don: Last Wednesday at Lincolnville library with Dwight and Dave – John Williams spoke on Einstein's special relativity. Lots of detailed information packed in the talk. Dave met up with a past student and also mentioned the Emera Planetarium and Clark Observatory.

Wade: Visited Charlie Sawyer's and was shown his new pier on his deck and he can now do astrophotography from inside his place. Dwight mentioned that John Stetson who was working with at risk kids, had donated a dome to Downeast Amateur Astronomers and will be installed at Charlie Sawyer's place.

New business:

On the Schedule

(Items Subject to Change)

PROGRAMS

February 11: Meeting at Emera Center
March 11: Dave Clark, Filters

STAR PARTIES

?March 30, April 6, 27, or May 4: Bangor Land Preserve
?May 11: International Astronomy Day Event
?July 20: Challenger Center, 50th anniversary of Apollo 11 lunar landing event

? Tentative; (rs) rain or shine; (co) clear only; (rd) rain date

Dwight asked about what dates we should plan for star parties.

International Astronomy Day – May 11th (Saturday)

50th Anniversary event of Apollo 11 lunar landing – July 20th (Saturday) with challenger center – all day event.

In March, Dave will give a program on filters. Other topics and speakers are being looked at for future meetings. Wade mentioned a web site called globeatnight.org that everyone can help track dark sky levels at different sites. Dwight also mentioned that someone is looking to make a dark sky documentary video in our area and you can check with Dwight if you are interested in participating in that film and want to be put in contact with the person.

Dwight gave a presentation on the Leviathan of Parsonstown. It was constructed by William Parsons, the 3rd Earl of Rosse, and put into operation in 1845 and was the largest telescope in the world until the Hooker telescope was built. Located at Birr castle in Ireland. Dwight discussed how the scope was constructed and how it was operated. Cost to build equivalent to 1 million euros today. 6 foot diameter mirror weighing 3 tons. 54 foot long tube weighing several more tons. Scope had the mobility to track for about an hour. The mirror had to be polished every 6-12 months and was quite brittle. The mirror could be removed and replaced by another mirror when it needed polishing. The telescope typically took 4 people to operate.

Wade: brought an astro-short: Sketches of Comet P17/Holmes – 11ish years ago in Dec 2007. Wade made the sketches of it over several observations.

The group had a short discussion of Kuiper belt object Ultima-Thule.

Meeting adjourned at 8:37

Phil

Observe the Sky This Month Some Selected Objects February 2019

General sky comments – The sun is coming up earlier and going down later every day. This is the best harbinger of Spring I can think of although spring is over a month away. How did you like the total lunar eclipse? At my house it was slightly overcast but least one of the Amarillo television stations had it on live and it was clear at that station. The eclipse was darker than some predictions but still nice and red with the north edge a straw going to blue tint. There is one more lunar eclipse in the current cycle but unfortunately that eclipse in July will not be visible for us and it is partial. We will have to wait until 2021 to observe the next total one and it is only partially visible for us. The next total lunar eclipse for us is May 15 and 16, 2022 much like the one we just observed but with warmer weather. Had you been observing the eclipse closely with a telescope you might have seen the flash of a meteor blasting out a crater around 10 feet wide on the surface of the Moon. It may well have been the first observed and recorded meteor strike on the Moon during a lunar eclipse although Moon meteor strikes are common.

Planets this month – The moon is at first quarter on the 12th, the full moon is on Tuesday the 19th. Last quarter is on Tuesday the 26th, and new moon is on Monday the 4th. 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 evening. By the end of the month Mercury will be making its best 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. 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 briefly after sunset. Pluto is in the morning sky in Sagittarius.

Constellations for the month – Constellations of last month are still well placed in the sky and may be easily observed. This month we will start with the constellation Monoceros, the Unicorn (See below). The northern portion of the constel-

lition Puppis, The Ship's Stern protrudes into the northern sky adjacent to the left portion of Canis Major 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 of which we cannot observe all. Above Puppis and Canis Major is the constellation of Monoceros, The Unicorn. 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 barred 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 or 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 Plancius. 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. Somehow 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 – M50 (NGC 2323) is an open cluster in the constellation of Monoceros, the Unicorn. It is located around 3,000 light years distance and was first recorded in 1711 by Giovanni Domenico Cassini best known for his obser-

vations of Saturn. Messier found it on April 5, 1772 while observing comet Biela. It is called the heart shaped cluster by most but many think it looks like an arrowhead. When I observed it I just called it an open cluster of about 80 stars with a layer of brighter stars in strings and a center part of dimmer stars. M50 is located $9\frac{1}{2}^{\circ}$ NE of Sirius.

Featured constellation – Monoceros, the Unicorn was named by an unknown observer but it showed up first on a star globe made by the Dutch cartographer Petrus Plancius 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). 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 2^{nd} , 3^{rd} , and 4^{th} 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 goes 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.

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.

Bill Shackelford