



Penobscot Valley Star Gazers

An Astronomical Society of Central Maine

Spring, with her golden suns and silver rain,
Is with us once again.
-Henry Timrod



<http://www.gazers.org>

March 2020

Nearly-Spring Meeting at the Emera Center

The Moon will be full and Venus will be in conjunction with Uranus when the PVSG meets at the Emera Astronomy Center on Monday, March 9th at 6:30 pm. We're sure Shawn will have something interesting for the program.

Thanks for last month's program go to our guest speaker Russel F. Pinizzotto, Ph.D., for his talk "The Color of Stars."

Secretary's Report



February 2020

Attendance:

The Colors of H-R

PVSG Monthly Meeting Minutes
February 10, 2020
John Bapst Memorial High School

Meeting:
Call to Order and Welcome
The meeting was called to order at approximately 6:28PM.

Dwight Lanpher - President
Scott Burgess - Vice-President
Andy Brown
Dave Clark (Treasurer)
Phil Normand (Secretary)
Wade & Donna Smith
Jeff Waring
Ralph Foss
Ralph Mallett
Don Krause
Visitor: Greg Ondo
Presenter: Russel Pinizzotto, Ph. D.

Program

Guest speaker Russel Pinizzotto, Ph D., from Southern Maine Astronomers, gave a presentation on: The Color of Stars

An amazing amount of information can be gleaned from stars by breaking their light into its component colors. Dr. Pinizzotto explained how we can learn a star's mass, its point in its lifecycle, and its future fate. He discussed spectroscopy as a powerful tool that has been used to tell us Hertzprung-Russell diagram, which is based on the colors of stars. Dr. Pinizzotto showed how the HR Diagram allows amateur observers to appreciate the colors of the stars they observe in the eyepiece.

Secretary's Report and Acceptance of Minutes
Minutes were accepted unanimously.

Treasurer's Report

Dave reported that the balance is: \$288.87. \$323.20 was paid out for insurance. Dave recently made several updates to the club roster and emailed the changes to the membership.

New Business discussion

- Dwight received a request from a lady in Stonington for help with Dark Sky ordinance by having an event in that area next Summer. Dwight also gave her contact information about a new Maine Dark Sky organization.
- Acadia National Park has decided to pull out of the Cadillac Mtn. Star Party.
- Phil Discussed changes that he, Scott and Dave have made to the new web site. Phil also asked if everyone was willing to be listed through the Night Sky Network so they would get emails any time an addition was made to our calendar.
- Dwight spoke about a possible future presentation on micrometeorites by John Wallace and how he takes pictures of them.
- Dave thanked Phil for his work on the club logo on the web site, going back to the older logo that had star gazers as two words instead of one.
- The March 9th meeting will be held at the Emera Center.

Adjournment

The meeting adjourned at approximately 8:15PM.
Phil

On the Schedule

(Items Subject to Change)

PROGRAMS

March 9: Emera Astronomy Center meeting.

STAR PARTIES

April 17, April 24, May 15, May 22 (co): Emera Astronomy Center.

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

Observe The Sky This Month

Some Selected Objects

March 2020

General sky comments – This month daylight savings time begins on Sunday morning the 8th (Don't be late for the meeting on the 9th) and spring starts on Friday the 21st at 11:50 pm EDT or 3:50 UTC with the spring equinox. This month the full Moon is the largest of the year. Look almost directly west every evening to observe Venus, currently at quarter phase. Venus grows from 18.8" on the first to 22.6" on the 21st and should be visible in the daytime if you know where to look. This month is one of the two times in the year to observe the zodiacal light if your sky is dark. To observe it look to the west in the 1/2 hour after the end of evening twilight. The zodiacal light is a large pyramid of light not to be confused with twilight.

Planets this month – New Moon is on Tuesday the 24th, first quarter is on Monday the 2nd, full Moon is on Monday the 9th, and last quarter is on Monday the 16th. Mercury begins the month next to the Sun but appears in the morning sky as it separates from the Sun and by the 24th it can be observed at mag. +0.2 28° at maximum elongation. Venus is high in the western evening sky. Mars, Jupiter, and Saturn are all low in the morning sky this month. Mars and Saturn are within one degree of each other on the 18th and are near the same brightness, a rare sight. Uranus is difficult to observe in the evening twilight. Neptune may be observed with difficulty low in the western sky. You must use a telescope. Pluto is too close to the Sun to observe in the morning sky.

Constellations for the month – March is the end of the winter constellations. We will start with another constellation that was part of the old constellation Argo Navis. It was renamed by Lacaille from part of Malus, the Mast, to Pyxis Nautica, the Mariner's Compass. I guess Lacaille did not realize the Argonauts navigated by the stars not a compass. Pyxis is barely 10° above the horizon for us and the three main stars are only 4th magnitude. About 25° north of Pyxis is the first hint of the spring constellations. This is the head of Hydra, the Water Serpent, a grouping of six, 3rd and 4th magnitude stars in a distinctive asterism easily fitting in most binocular fields. Below this grouping look for M48 (NGC 2548) a large open cluster covering about ½ degree in the sky with 50 to 80 stars noted, some in lanes. To find this cluster start at Procyon, use your Telrad Finder (or equivalent) and go 10° SE to a triangle of 4th magnitude stars in Monoceros. M48 is 4° farther on across the border of Hydra and might already be in the field of view of the finder. The rest of Hydra will be covered later in the spring. Above Hydra's head is the Zodiac constellation Cancer, the Crab. Cancer contains the naked eye visible open cluster, M 44, Praesepe (Latin for manger) also called the Beehive. Above Cancer is the eastern half of Lynx including the alpha (α) star at the very east end of the constellation observed last month. Many of us do not observe enough beautiful individual and multiple stars in our ob-

servations each month. Let's look at some objects in Lynx we did not observe last month. Among these are several double or multiple star systems including a nice double one just 1° NNW of alpha (α) Lynx. This pair of white stars can be separated with small scopes using high power. Then 1° north of this star is the magnitude 3.8, 38 Lynx, a pair of white and red stars separated with moderate power. 4° NE of 38 is a triangle of 4th mag. stars. Less than 1° above the western of the three stars is a triple system of two easily separated yellow stars and a third yellow star at a larger distance.

Featured star – Zeta (ζ) cancri is a quadruple star system first observed by William Herschel located 3° west of gamma cancri the middle star of the constellation and listed as a triple star system in his first list of double stars published in 1782. In 1731, he noted an irregularity in the motion of the third star but thought it was an observational error. Forty-four years later the Russian astronomer Georg and his son Otto Struve had determined Herschel's observations were correct and component C has a companion. The almost circular orbit shows we are looking down on the Zeta system about pole-on. More modern observations have determined this star system may contain as many as six components and maybe more. Zeta is around 85 light years distant and the two closest stars are at a distance comparable to the distance between our sun and the planet Uranus with the other components much further distant. When you think of all the possibilities with this system it becomes mind-boggling.

Featured Constellation – Cancer the crab is a dim constellation with the brightest stars looking like an inverted Y pattern with M44 at the junction of the three lines. Cancer is the dimmest Zodiac (path of the Sun) constellation. The constellation is best known for hosting M 44 but also contains M67. In Greek mythology Cancer is the crab sent by the goddess Hera (a sworn enemy of Hercules) to distract him while he dispatched the many-headed water monster Hydra. Hercules was not very distracted as he either kicked it away into the stars, crushed it under his foot, or Hera put Cancer into the stars in a dim part of the sky because the crab was unsuccessful with his mission. The two stars on either side of M44 (Praesepe –Manger or Beehive) have their own mythology. According to Eratosthenes when the Titans were overthrown and the gods and giants began fighting, the gods Dionysus and Hephaestus came in riding on donkeys to join the fight. The braying of the donkeys was so loud it scared off the giants who thought monsters were coming to fight. To honor the donkeys they were put in the sky by Dionysus on either side of the manger. The names of the stars are Asellus Borealis, [north donkey] gamma (γ) Cancer and Asellus Australis [south donkey] delta (δ) Cancer.

Featured Messier object – M67 is an open cluster in the constellation Cancer. It is usually overlooked because of the easily seen M44 Praesepe – Beehive. 7° SSE of M44 is Acubens the alpha (α) star of Cancer, a little over 1° W is M67. I counted over 100 stars in M67 with the Clark refractor at the University of Maine before giving up. The cluster is listed to have 500+ stars. It does appear to be about the same age as

some globular clusters making it one of the oldest open clusters. Do not miss this one and it is easy to find slightly less than 2° west of Acubens, alpha (α) Cancer. M67 is an open cluster easily confused with an evaporated globular cluster. If you who have seen my presentation on globular clusters you should have absorbed the way to find out if a star cluster is an open cluster or a globular cluster. Comparing H-R (Hertzsprung Russell Diagrams) aka Color-Magnitude dia-

grams of M67 and a globular cluster such as M3 in Canes Venatici, M3 has a distinctive horizontal branch of giant stars and other characteristics making it a globular cluster while M67 does not have these characteristics.

Bill Shackelford
Are we alone in this sky overhead?