



# Penobscot Valley Star Gazers

An Astronomical Society of Central Maine

The little birds twitter and cheep,  
To their loves on the leafless larch.  
-John Addington Symonds



<http://www.gazers.org>

February 2020

## More Than Pretty Colors

Mercury will be at its greatest elongation (18° East) and the Moon will be at perigee when the PVSG meets at John Bapst Memorial High School on Monday the 10<sup>th</sup> at 6:30 pm. Our guest speaker will be Russel F. Pinizzotto, Ph.D., who will talk about "The Color of Stars":

An amazing amount of information can be gleaned from stars by breaking their light into its component colors. We can learn a star's mass, its point in its lifecycle, and its future fate. Spectroscopy is a powerful tool that has even been used to tell us about the fate of the Universe! One of the most useful of all scientific charts, the Hertzsprung-Russell diagram, is based on the colors of stars. This talk will briefly discuss the HR Diagram to allow amateur observers to appreciate the colors of the stars they observe in the eyepiece.

Thanks for last month's program go to Wade and Donna for sharing their day at the Kennedy Space Center with us.



### Historic Space Stuff

PVSG Monthly Meeting Minutes  
January 13, 2020  
John Bapst

#### Meeting:

#### Call to Order and Welcome

The meeting was called to order at approximately 6:35PM.

#### Attendance:

**Dwight Lanpher - President**  
**Scott Burgess - Vice-President**  
**Andy Brown**  
**Dave Clark (Treasurer)**  
**Phil Normand (Secretary)**  
**Wade & Donna Smith**  
**Jeff Waring**  
**Ralph Foss**  
**Alan Davenport**  
**Ralph Mallett**  
**Don Krause**  
**Shawn Laatsch**

- Several dates for star parties at the Emera Center – April 17<sup>th</sup>, 24<sup>th</sup> & May 15<sup>th</sup>, 22<sup>nd</sup>. These will be held after the Friday night Public programs.
- Shawn offered the Emera center for the March 9<sup>th</sup> meeting.
- Dwight will try to schedule more star parties this spring if weather cooperates. He is reluctant to schedule star parties in June due to the length of daylight.

### On the Schedule

(Items Subject to Change)

#### PROGRAMS

February 10: Russel F. Pinizzotto, Ph.D., "The Color of Stars."  
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

### Secretary's Report and Acceptance of Minutes

Minutes were accepted unanimously.

### Treasurer's Report

Dave reported that the balance is: \$594.07. \$323.20 will be paid out for insurance in the next few days. Dave received several updates to the club roster and will make the updates soon.

### Upcoming calendar discussion

- J. Kelley Beatty – Senior editor for Sky & Telescope magazine. Might be coming to the Emera Center in May.
- The February speaker will be Dr. Russell F. Pinizzotto on the color of stars.

### Program

**Wade:** A day at the Kennedy Space Center. Wade spoke of his tour of the Kennedy Space Center on November 6<sup>th</sup>. Some of the highlights included: The Rocket Garden with examples of several generations of rocket boosters and capsules; The Assembly Building; Several launch pads including some currently being used by SpaceX; The rocket mover "the crawler"; The Space Shuttle Atlantis; A 4D Multi-sensory Theatre; A Lunar Rover vehicle; A Lunar Sample that you could touch and a sensitive floor that would show your footsteps as though you were wearing astronaut boots and walking on the moon.

### Discussion of the new web site

The group reviewed some of the pages of the re-designed web site. Phil showed some of the features and limitations of the PVSG web site. It was decided that a committee of Dave, Scott and Phil would work on the web site.

### Discussion of new Insurance Policy acceptance

The group voted unanimously to have Dave pay \$323.20 for renewal of our insurance policy.

### Adjournment

The meeting adjourned at approximately 8:30PM.

Phil

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## Observe The Sky This Month

### Some Selected Objects

### February 2020

**General sky comments** – I purchased the Guy Ottewill “Zodiac Wavy Chart” for 2020. This chart is wavy because it follows the Sun, Moon, and Planets as they travel along the Zodiac while centered along the ecliptic curving north in December and south in June. The planets motion is shown by arrows. The Sun is shown on the 16<sup>th</sup> of the month. The sky is shown in the background where it falls on the ecliptic. This chart is useful to quickly find where each solar system object is for any given day and its direction of motion plus much more information. It is interesting to see how the sun moves north and south over the sky during the year. Another chart I use is the Sky and Telescope “Sky Gazers Almanac” which comes to subscribers of the magazine each December. This chart shows sunrise and sunset times along with the Moon, planets, and select stars better than the wavy chart. I use both charts plus the RASC observers handbook for quick information, and a couple of sky atlases to find deep sky objects for my observing.

**Planets this month** – The moon is at first quarter on the 1<sup>st</sup>, full moon is on Sunday the 9<sup>th</sup>, last quarter is on Saturday the 15<sup>th</sup>, and new moon is on Sunday the 23<sup>rd</sup>. Mercury is making a decent show in the evening sky in the middle of the month. It is brighter than magnitude 0.0 at this time not fading below this level until after the 14<sup>th</sup>. Venus continues to become more prominent in the SW. The Moon is south of Venus on the 26<sup>th</sup> and 27<sup>th</sup>. Mars is low in the sky in Sagittarius early in the morning sky and will be occluded on the morning of the 18<sup>th</sup>. Jupiter is in Sagittarius. Saturn is in Sagittarius with Mars between it and Jupiter making a nice view in the early morning. Uranus is in Pisces setting late in the evening. 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 Canis Major, The Big Dog (See below). The northern portion of the constellation 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 ( $\alpha$ ) CMi magnitude 0.4 along with Gomeisa (an old Arabic name for Procyon) beta ( $\beta$ ) CMi magnitude 2.9. These two stars comprise almost all of the constellation Canis Minor. Next above is the constellation Gemini, The Twins (See below). 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. Among these galaxies in Lynx are NGC 2859 a barred spiral located next to a 7<sup>th</sup> magnitude star less than 1° ENE from alpha ( $\alpha$ ) Lynx and NGC 2683 an edge-on spiral galaxy located 6° WSW of alpha ( $\alpha$ ). If you have trouble finding NGC 2683 look a degree or so NW of the star grouping of 1-4 sigma ( $\sigma$ ) Lynx, it can be seen with binoculars. Multiple star systems in Lynx include 5, 19, and 38. Do not dismiss this constellation. Above Lynx is another modern era constellation, Camelopardalis, the Unicorn. 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 Σείριος loosely translated as “glowing.” It is in the constellation of Canis Major and found 2.6 parsecs (8.6 ly) distant. 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.” For the Egyptians its appearance forecast the flooding of the Nile and the renewing of the land. The Polynesians saw the appearance of Sirius as the beginning of winter and the start of the sailing season when it was an important navigational

tool. 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 but the Civil War interfered and the Old University of Chicago eventually bought the lens. It was to be installed in the new Dearborn Observatory. 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 was finally 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.

**Featured Messier object** – M41 (NGC 2287) is an open cluster in Canis, The Great Dog. To find this large loose open cluster go 4° almost directly south of Sirius. M41 is a naked eye object even at a moderately dark site and can be successfully observed with any binocular and one to two dozen stars seen depending upon the power of your binocular.

**Featured constellation** – 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.

**Other objects of interest** – NGC 2264 is 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 8X50 finder scope. With a reflector telescope under low power it resembles a Christmas tree. With a non-reversing binocular it appears upside down. Below NGC 2264 is the Rosette Nebula surrounding NGC 2244 an 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. 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

Go view the sky  
A point of light  
May be a galaxy