



# THE BLUE MOON OBSERVER

MARCH 2019 VOLUME 21, NUMBER 3



## Door Peninsula Astronomical Society

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[www.doorastronomy.org](http://www.doorastronomy.org)

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The March general meeting will be held at the Astronomy Center at 7 PM on Tuesday, March 5. David Lenius will review the Gemini missions, introducing a series on space exploration. A video program will explain gravitational lensing. Visitors are welcome.

### Notes from the February 5 (Lunar New Year) General Meeting of the DPAS:

Attendance: 12

Dave Lenius welcomed and gave an update on the functioning of our new telescope in the Lief Everson Observatory - we're almost there! We now enjoy the ability to show video on our new giant-screen HD TV from a variety of sources, including the telescope in the observatory. An HDMI connection port is necessary if projecting video from a computer. If one has astronomy-related images on an iPhone to share, this can be done also - so feel free bring them to our next meeting.

In honor of the 50th anniversary of the first Moon landing in July 1969, we will be reviewing the manned space programs that preceded Apollo as well as the Apollo program itself. Tonight Tom Minahan talked about the first attempts to reach space or Earth orbit. On October 4, 1957 the

Russians launched Earth's first artificial satellite, Sputnik I. Sputnik IV's re-entry rockets exploded, putting it in a useless orbit until September 6, 1962, when it fell screaming from the sky over Wisconsin. All 7 tons, including a dummy cosmonaut, burned up in the atmosphere -- except one 20-pound hunk of metal. That piece crashed into the street outside of the Rahr-West Art Museum in Manitowoc, Wisconsin. As we all know, the Russian Uri Gagarin was the first human to be put into space (completing one Earth orbit) on April 12, 1961. The US was close behind when Alan Shepard became the first American in space on May 5 on that year. In total, there were 6 Mercury flights into space, all more or less successful. But it should be known that prior to launching the astronauts into space, the reliability of the rockets used, the Redstone and the Atlas, were not close to perfect. By the time of Shepard's launch, the Redstone had made 69 flights with an 81

*continued on page 3*



## Who We Are

DPAS is a local club and chapter of the Astronomical League. We are also a club member of the International Dark-Sky Association and the Night Sky Network, teaching arm of the Astronomical Society of the Pacific. We meet on the first Tuesday of every month, with rare exception. Meetings are held at the Ray & Ruthie Stonecipher Astronomy Center unless otherwise announced. We operate and maintain the Leif Everson Observatory which houses a 16" Ritchey-Cretien telescope on a sophisticated tracking mount controlled by computer, and a new Maksutov-Cassegrain telescope for planetary viewing. A weather station is housed in the observatory. Current weather readings are shown on our web site:

[www.doorastronomy.org](http://www.doorastronomy.org)

The StarGarden near the observatory is used for viewing the sky with unaided vision, binoculars and members' telescopes. There are also binocular mounts set in concrete which allow viewers of different heights to view the same object through the same binocular.

The Ray & Ruthie Stonecipher Astronomy Center provides for storage, projects, meetings, warm-up and toilet facilities. It also housed a StarLab, an inflatable planetarium with a sophisticated projection system. The planetarium was used for group presentations. See announcements page 6.

An Analemmatic Sundial was dedicated on October 20, 2012.

The "astronomy campus" as described here is reached by taking Utah Street east to the stop sign and turning left through the gate onto Stargazer Way. Or you can set your GPS to 2200 Utah.

## Springtime Planet Party

David Prosper

March brings longer days for Northern Hemisphere observers, especially by the time of the equinox. Early risers are treated to the majority of the bright planets dancing in the morning skies, with the Moon passing between them at the beginning and end of the month.

The vernal equinox occurs on March 20, marking the official beginning of spring for the Northern Hemisphere. Our Sun shines equally on the Northern and Southern Hemispheres during the moment of equinox, which is why the March and September equinoxes are the only times of the year when the Earth's north and south poles are simultaneously lit by sunlight. Exacting astronomers will note that the length of day and night on the equinox are not precisely equal; the date when they are closest to equal depends on your latitude, and may occur a few days earlier or later than the equinox itself. One complicating factor is that the Sun isn't a point light source, but a disc. Its edge is refracted by our atmosphere as it rises and sets, which adds several minutes of light to every day. The Sun doesn't neatly wink on and off at sunrise and sunset like a light bulb, and so there isn't a perfect split of day and night on the equinox - but it's very close! Ruddy Mars still shines in the west after sunset. Mars scoots across the early evening skies from Aries towards Taurus and meets the sparkling Pleiades star cluster by month's end.

March opens with the morning planets of Jupiter, Saturn, and Venus spread out over the southeastern horizon before sunrise. A crescent Moon comes very close to Saturn on the 1st and occults the ringed planet during the daytime. Lucky observers may be able to spot Mercury by the end of the month. March 31 opens with a beautiful set of planets and a crescent Moon strung diagonally across the early morning sky. Start with bright Jupiter, almost due south shortly before dawn. Then slide down and east towards Saturn, prominent but not nearly as bright as Jupiter. Continue east to the Moon, and then

towards the beacon that is Venus, its gleam piercing through the early morning light. End with a challenge: can you find elusive Mercury above the eastern horizon? Binoculars may be needed to spot the closest planet to the Sun as it will be low and obscured by dawn's encroaching glow. What a way to close out March!

Discover all of NASA's current and future missions at [nasa.gov](http://nasa.gov)

*This article is distributed by NASA Night Sky Network.*

*The Night Sky Network program supports astronomy clubs across the USA dedicated to astronomy outreach.*

## Correspondence

from Brian T. Welsch  
Asst. Prof. of Physics  
UWGB

Hello,

Albion College's Prof. Nicolle Zellner, one of the American Astronomical Society's Shapley Lecturers, will give three astronomy / geology talks in Green Bay next week that might be of interest to your members -- so please spread the word!

Topics:

1. "50 Years Since Apollo: What We Learned About the Moon and Why We Should Go Back," Neville Public Museum Astronomical Society meeting, Wednesday, 3/6, 6:30pm, room 122/123 (free and open to the public)

2. "Space Rocks: To the Moon - and Beyond!", UWGB Geology Club Meeting, Thursday, 3/7, 6:30pm, Mary Ann Cofrin (MAC) Hall, room 208 (free and open to the public)

3. Natural & Applied Sciences Seminar, "Impacts in the Earth-Moon System: What, When and Why Should We Care?," Friday, 3/8, 3:10pm, Env. Sci. (ES) building, room 301

(free and open to the public, refreshments at 2:40pm in ES 317)

## DPAS BOARD

Gary Henkelmann, President  
president@doorastronomy.org

David Lenius, Vice President

Thomas Minahan, Outreach  
Coordinator

Susan Basten, Secretary,  
Membership Chairperson, and  
ALCOR.  
treasurer@doorastronomy.org

Jacque Axland, Membership  
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Secretary of the Board

John J. Beck, Past President  
and Editor  
editor@doorastronomy.org

John W. Beck, Past President  
and Webmaster

Dennis Sundin, Member at  
Large

Ray Stonecipher, in spirit

Barbara Henkelmann serves as  
the DPAS Archivist.

Coggin Heeringa serves as  
acting school coordinator in the  
absence of that board position.

The business of the DPAS is  
largely conducted at the Board  
meetings to leave the general  
meetings open for programs.  
The Board meetings are held at  
the Astronomy Center at 7 PM  
on Monday, 8 days prior to the  
following general meeting.

Members of DPAS are invited to  
attend Board meetings.

**Meeting notes from page 1**  
percent success rate—good  
enough in those days to earn it  
the nickname “Old Reliable.”  
Imagine sitting in the Mercury  
capsule knowing you have  
about a 20% chance of either  
blowing up on the launchpad or  
crashing if the escape rockets  
don’t work! The longest dura-  
tion Mercury flight was the last  
when L. Gordon Cooper circled  
the Earth 22 times in 34 hours  
and 20 minutes.

Snacks and refresh-  
ments were provided by Jim  
O’Reilly & Kathy Tryner.  
Thanks!

Tom Minahan then gave  
an introduction to Britain Cox,  
professor of particle physics at  
the University of Manchester  
and England’s most(?) popular  
astrophysicist. He is consid-  
ered to be a “rock star” among  
physicists because he is very  
smart and accomplished at a  
young age, he is good looking  
and has a certain aura about  
him and because he actually  
played keyboard on a couple of  
early albums by the band Dare.  
Also, he has appeared as vari-  
ous characters in numerous  
movies and TV shows, He has  
been prolific especially bringing  
physics to the masses. For  
example, he has been a  
producer on several science  
shows in England and a guest  
on numerous sciences shows  
abroad. We then watched a  
shortish lecture by Prof. Cox  
titled Life of a Universe,  
episode 1. He gave some inter-  
esting insights on the structure  
and evolution of the Universe.

Note that Professor Cox will  
give a lecture at the Pabst  
Theatre in Milwaukee on May  
10, 2019.

From pabsttheater.org:  
“With state of the art imagery  
and using massive, ultra high  
definition screens, Brian will  
explore the nature of space and  
time from the big bang to black  
holes, the latest missions to the  
planets and the origin and fate  
of life and intelligence in the  
Universe. He offers a fascinat-  
ing insight into the workings  
of nature at the most funda-  
mental level. Whether an avid  
science reader or a total novice,  
Universal will make the latest  
scientific discoveries and ideas  
accessible.”

Tom Minahan

*Thanks, Tom, for reporting on  
the February general meeting.*

## Messier Marathon 2019

This year is not ideal for a  
Messier Marathon from Door  
County, but for some it will be  
worth the challenge to bag at  
least 100 Messier objects. “In  
the year 2019, New Moon will  
occur on March 6 and again on  
April 5, so that the best  
Marathon time in mid-March will  
be prevented by the Moon.  
There will be two opportunities  
for Messier Marathon, the first  
on March 9/10 and the second,  
primary for mid-northern ob-  
servers, on March 30/31, 2019.  
On neither of these dates, a full  
score of 110 will be easy for  
**continued on page 4**

## Astronomy Quiz

1. Is velocity a vector quantity or a scalar quantity?
2. Recognizing that circular orbits around earth did not quite fit the observations of his time, Ptolemy made what modifications to the heliocentric model of planetary motion to account for the deviations from purely circular orbits?
3. What was the name of the first Mars orbiter and when did it begin to orbit Mars?
4. Astronomers know that Betelgeuse will go super-nova when it runs out of fuel, they just don't know when that will be. When it does happen, which of the following will be the effect on Earth?
  - a. Earth will be consumed and only dust and gas will remain.
  - b. Earth will survive but most life will be destroyed including all mammalian life.
  - c. Earthlings, especially astronomers, will be excited to observe the sudden transformation of one of our brightest stars to a brilliant star readily visible during daylight.
5. Which distance is greater, a megaparsec or a million light-years?



The Blue Moon Observer

## **Messier Marathon from page 3**

mid-northern observers. According to Tom Polakis' investigation, on the first date (March 9/10), the full 110 will be possible only between latitudes 9deg and 25d. N, limited by M52 and M30. On the second date (March 30/31), it will be theoretically possible between 18d. and 40d. Northern latitude, limited by M110 and M30, with M74 and M110 extremely difficult."

(<http://www.messier.seds.org/xtra/marathon/mm2019.html>)

For those new to the concept, Charles Messier was a 17th century comet hunter who was frustrated by following the same deep sky object repeatedly only to discover that it was not a comet. So he cataloged "not comet" deep sky objects (DSO's) numbering nearly 110, with a few added by contemporaries and a few inadvertent errors or duplicates. Every spring there is an opportunity to catch those DSO's which are about to set as soon as it is dark enough to spot them, and to catch some which rise just as the sky is about to get too bright. The challenge is to spot all 110, or at least as many as possible. Often, Messier Marathon star parties are held complete with refreshments and a warm up facility. DPAS has held these at the IDA Dark Sky Site Newport State Park or has joined with the Newville Public Museum Astronomical Society for one held at a different location. With that background, here is a more complete rundown of the event.

"Messier Marathon is a term describing the attempt to find as

many Messier objects as possible in one night. Depending on the location of the observer, and season, there is a different number of them visible, as they are not evenly distributed in the celestial sphere. There are heavily crowded regions in the sky, especially the Virgo Cluster and the region around the Galactic Center, while other regions are virtually empty of them. In particular, there are no Messier objects at all at Right Ascensions 21:40 to 23:20, and only the very northern M52 is between RA 21:40 and 0:40. This chance effect leads, at considerably low northern latitudes on Earth (best around 25 degrees North), to the chance to observe all 110 Messier objects in one night! This opportunity occurs once every year, around mid- to end-March; the best time to try is of course when the Moon is near its new phase.

"Note: Most Messier Marathoners accept NGC 5866 as M102, either in account of historical evidence, or at least as substitute accepted for the Messier Marathon, and thus arrive at actually 110 different objects. We recommend to do so, but you decide what you want to do.

Note2: Referring to the objects M51B (NGC 5195) and M109B (NGC 3953): Virtually all observers of M51 will also see M51B. For the M109/M109B discussion, we propose to recognize as "score" either of the objects, M109 (NGC 3992) or M109B (NGC 3953), or certainly both.

***Continued on page 5***

Poetry Corner

*Dachshunds*

The Dachshund leads a quiet life  
Not far above the ground;  
He takes an elongated wife,  
They travel all around.

They leave the lighted metropole;  
Nor turn to look behind  
Upon the headlands of the soul,  
The tundras of the mind.

They climb together through the  
dusk  
To ask the Lost-and-Found  
For information on the stars  
Not far above the ground.

The Dachshunds seem to journey  
on:  
And following them, I  
Take up my monocle, the Moon,  
And gaze into the sky.

Pursuing them with comic art  
Beyond the cosmic goal,  
I see the whole within the part,  
The part within the whole;

See planets wheeling overhead,  
Mysterious and slow,  
While morning buckles on his red,  
And on the Dachshunds go.

*William Jay Smith*

***Messier Marathon from p. 4***

“Messier Marathon was invented independently by several North American (including Tom Hoffelder, Tom Reiland and Don Machholz) and perhaps one Spanish amateur astronomers and groups, in the 1970s. It was probably first in the night of March 23/24, 1985 that Gerry Rattley from Dugas, Arizona, completed the list and hunted down all 110 Messier Objects in one night; while he was the first to achieve this goal, it was only about one hour later that Rick Hull duplicated this success from Anza, California. This is however possible only under exceptionally good observing conditions, and at a preferred location. Anyway, some Messier Marathon tips may help to be [even] more successful with this endeavor, i.e., see one or a few objects more.

“Meanwhile, a number of clubs started to hold more considerable Messier Marathon events, notably in Arizona. In 1981, the Saguaro Astronomy Club (SAC) held their first Messier Marathon with about 40 participants, the first in a row of meanwhile 27 events (as of 2015) sponsored by this club; Gerry Rattley's first 110 objects success of 1985 happened on their fourth event. Since 1993, SAC sponsors the famous All Arizona Messier Marathons held annually near Arizona City and organized by A.J. Crayon. Other clubs throughout the world are also holding their Messier Marathon events semi-annually.

The more complete Messier Marathon history can be found in Don Machholz's booklet, *The Messier Marathon Observer's Guide* (Machholz 1994), or its newer edition or successor, *The Observing Guide to the Messier Marathon* (Machholz 2002), which moreover gives a most useful proposition for the search sequence. It also points out that less complete Messier Marathons may be run at every time in the year, the percentage depending on location and time.

DPAS has not scheduled a Messier Marathon for this March as of this date. Also Northern Door Astronomical Society has not published one for this month. Watch the web site, [www.doorastronomy.org](http://www.doorastronomy.org), in case a DPAS or nearby event becomes scheduled. If you try it, be certain to let us know!

There are numerous resources in print and online with lists of Messier objects in a sequence which favors finding them all in one night, listing first those about to set as the sky darkens at dusk and ending with those rising before daybreak. On page 6 we present a list modified from the list from the *Messier Marathon Observer's Guide* by Don Machholz.

“Depending on geographic location, it may be impossible to find them all, and may be better to slightly modify this list. In case of doubt consult Don Machholz's book. This list should be good for northern latitudes 20 to 40.”

## Astronomy Quiz Answers

1. Velocity is a vector quantity, indicating both rate and direction.
2. Ptolemy added "epicycles" within the circular "spheres".
3. The first Mars orbiter was Mariner 9 and was inserted into Martian orbit on November 14, 1971.
4. The correct answer is c. A supernova would need to be within 50 light years from Earth to have devastating effects. Betelgeuse is over 400 light years from Earth.
5. A megaparsec is 3.26 million light-years, so is the much larger of the two units.

### Viewing Nights

The following is the tentative list of viewing nights for 2019. Changes will be posted here and at [www.doorastronomy.org](http://www.doorastronomy.org)

March 9  
 April 6  
 May 4  
 June 1  
 July 6  
 August 3 (and/or 28)  
 September 28  
 October 26  
 November 23  
 December 28

Note: If skies are cloudy, a program will be presented at the Astronomy Center.

Some summer viewing may be canceled because it gets dark so late.

### Messier Marathon from p. 5.

**M77** in Cetus  
**M74** in Pisces  
**M33** The Triangulum Galaxy  
**M31** The Andromeda Galaxy  
**M32** Satellite galaxy of M31  
**M110** Satellite galaxy of M31  
**M52** in Cassiopeia  
**M103** in Cassiopeia  
**M76** The Little Dumbell nebula in Perseus  
**M34** in Perseus  
**M45** the Pleiades in Taurus  
**M79** cluser in Lepus  
**M42** The Great Orion Nebula  
**M43** part of the Orion Nebula  
**M78** nebula in Orion  
**M1** The Crab Nebula in Taurus  
**M35** open cluster in Gemini  
**M37** open cluster in Auriga  
**M36** open cluster in Auriga  
**M38** open cluster in Auriga  
**M41** open cluster in Canis Major  
**M93** open cluster in Puppis  
**M47** open cluster in Puppis  
**M46** open cluster in Puppis  
**M50** open cluster in Monoceros  
**M48** open cluster in Hydra  
**M44** the Beehive Cluster in Cancer  
**M67** open cluster in Cancer  
**M95** spiral galaxy

in Leo  
**M96** spiral galaxy in Leo  
**M105** galaxy in Leo  
**M65** galaxy in Leo  
**M66** galaxy in Leo  
**M81** Bode's Galaxy in Ursa Major  
**M82** Cigar Galaxy in Ursa Major  
**M97** The Owl Nebula in Ursa Major  
**M108** galaxy in Ursa Major  
**M109** galaxy in Ursa Major  
**M40** Double Star WNC4 in Ursa Major  
**M106** in Canes Venatici  
**M94** in Canes Venatici  
**M63** Sunflower galaxy in Canes Venatici  
**M51** The Whirlpool Galaxy in Canes Venatici  
**M101** The Pinwheel Galaxy in Ursa Major  
**M102** Spindle Galaxy in Draco  
**M53** globular cluster in Coma Berenices  
**M64** Blackeye galaxy in Coma Berenices  
**M3** in Canes Venatici  
**M98** in Coma Berenices  
**M99** in Coma Berenices  
**M100** in Coma Berenices  
**M85** in Coma Berenices  
**M84** in Virgo  
**M86** in Virgo  
**M87** Virgo A

galaxy in Virgo  
**M89** galaxy in Virgo  
**M90** galaxy in Virgo  
**M88** galaxy in Coma Berenices  
**M91** galaxy in Coma Berenices  
**M58** galaxy in Virgo  
**M59** galaxy in Virgo  
**M60** galaxy in Virgo  
**M49** galaxy in Virgo  
**M61** galaxy in Virgo  
**M104** The Sombrero Galaxy in Virgo  
**M68** globular cluster in Hydra  
**M83** Southern Pinwheel Galaxy in Hydra  
**M5** globular cluster in Serpens Caput  
**M13** Great Hercules Globular Cluster  
**M92** in Hercules  
**M57** The Ring Nebula in Lyra  
**M56** in Lyra  
**M29** in Cygnus  
**M39** in Cygnus  
**M27** The Dumbbell Nebula in Vulpecula  
**M71** in Sagitta  
**M107** in Ophiuchus  
**M10** in Ophiuchus  
**M12** in Ophiuchus  
**M14** in Ophiuchus  
**M9** in Ophiuchus  
**M4** in Scorpius  
**M80** in Scorpius  
**M19** in Ophiuchus  
**M62** in Ophiuchus

**M6** The Butterfly Cluster in Scorpius  
**M7** Ptolemy's Cluster in Scorpius  
**M11** The Wild Duck Cluster in Scutum  
**M26** in Scutum  
**M16** in Serpens Cauda  
**M17** The Omega or Swan nebula in Sagittarius  
**M18** in Sagittarius  
**M24** Milky Way Patch in Sagittarius  
**M25** in Sagittarius  
**M23** in Sagittarius  
**M21** in Sagittarius  
**M20** The Trifid Nebula in Sagittarius  
**M8** The Lagoon Nebula in Sagittarius  
**M28** in Sagittarius  
**M22** in Sagittarius  
**M69** in Sagittarius  
**M70** in Sagittarius  
**M54** in Sagittarius  
**M55** in Sagittarius  
**M75** in Sagittarius  
**M15** in Pegasus  
**M2** in Aquarius  
**M72** in Aquarius  
**M73** in Aquarius  
**M30** in Capricornus