



Reflections



Newsletter of the Popular Astronomy Club

FEBRUARY 2018

President's Corner February 2018



Alan Sheidler

Well, here we are in the midst of winter. For many of us, this is the time of hibernation or at least to cut back on the amount of observing we do. More often than not, the weather isn't very cooperative this time of year either which helps me feel not too bad about not going out to the observatory as much. But for PAC members, we still have the

desire to expand our minds. Still, I can't help feel a little guilty about not getting out there and doing astronomy at this time of the year. So when Ian Spangenberg approached me about an idea he had about inviting PAC members to attend a physics lab session at Pleasant Valley High School, I was intrigued. This would be a great way for club members to gain insight into high school AP-physics and be the perfect way to do something intellectual and science related without having to brave the inclement weather.

On the evening of January 23rd, we convened in Ian's physics lab for a very interesting lecture about pendulums and the parameters that affect the period of a pendulum. Ian led the group to brainstorm all possible variables: aerodynamic friction, acceleration of gravity, mass of the pendulum's weight, the length of the pendulum, how far the pendulum is pulled, and other factors. All of these were listed and discussed. We then did actual lab experiments with pendulums to evaluate the significance of these parameters.

(Continued in next column)

After numerous experiments, many of us were surprised to realize that the only factor of any real significance is the length of the pendulum. And with Ian's help, we were able to derive the "pendulum equation":

$$T = 2\pi \sqrt{\frac{L}{g}}$$

In this equation, L is the length (meters) of pendulum, g is the acceleration of gravity (m/s²) and T is the period or time (seconds) required for the pendulum to swing out and back one time. Despite the daunting mathematical nature of this equation, Ian helped us through the derivation and verification with fun, hands-on experiments and entertaining anecdotes. You can see more about this below on page 16. We had a good group and a great learning experience.

This is another great newsletter with many other articles on the astronomical topics and observations of club members. Enjoy.

Don't forget about the next PAC meeting which is February 12th at the Butterworth Center at 7:00pm. The program will be "Galileo Galilei-- The Leap Forward In Astronomy", by Mike Mack. See you there.

Alan Sheidler



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M79 taken by Hubble Space Telescope



2018 PAC OFFICERS

PRESIDENT - Alan Sheidler 3528 56th Street Court, Moline, IL, 61265 Phone: (309) 797-3120; Email: adsheidler@gmail.com

VICE PRESIDENT – Dino Milani 2317 29 1/2 Street, Rock Island, IA, 61201 Phone: (309) 269-4735 ; Email: dinomilani@qconguard.com

SECRETARY - Terry Dufek 2812 W. 65th Street, Davenport, IA, 52806 Phone: (563) 386-3509; Email: t_dufek@msn.com

TREASURER – Dale Hachtel 1617 Elm Shore Drive, Port Byron Illinois, 61275 Phone: (614) 935-5748; Email: dale_hachtel@msn.com

ALCOR – Roy E. Gustafson 11 Deer Run Road, Orion, IL, 61273 Phone: (309)526-3592; Email: astroroy46@gmail.com

DIRECTOR OF OBSERVATORIES - Rusty Case 2123 W. 16th Street, Davenport, IA, 52804 Phone: (563) 349-2444 Email: rusty-case32@gmail.com

PAST PRESIDENT - Wayland Bauer 3256 Pleasant Drive, Bettendorf, IA., 52722 Phone: (563) 332-4032 Email: bauerwp@gmail.com

NEWSLETTER EDITOR - Terry Dufek 2812 W. 65th Street, Davenport, IA, 52806 Phone: (563) 386-3509; Email: t_dufek@msn.com

YES! We have openings for.....

NEWSPAPER ARTICLES

June, August,
September, October,
November, December 2018
(If you have need some ideas,
we can help– It isn't as hard as
it looks)

Please contact Dino Milani
if Interested

NCRAL 2018

Event date:

Fri May 4, 2018 & Sat May 5, 2018

Location of event:

Lodge at Leathem Smith
1640 Memorial Drive
Sturgeon Bay , WI 54235

North Central Region of the Astro-
nomical League annual convention
presented by the Door Peninsula As-
tronomical Society in Door County,
Wisconsin.

ALCON 2018

Event date:

Wed Jul 11, 2018 - Sat Jul 14, 2018

Location of event:

HILTON MINNEAPOLIS/ST. PAUL
AIRPORT MALL OF AMERICA
3800 American Bldd. E
Bloomington , MN 55425

SUBMISSIONS

If you have an article or photos to
submit or items of interest,
we encourage you to send them in
by the 25th of the month. Links to
stories are welcome also.





Certificate of Appreciation

NASA Space Place,
a NASA public education and outreach program,
recognizes

Popular Astronomy Club

for its valuable contributions to its community
in the areas of science, technology education, and inspiration.

2017

A handwritten signature in black ink, appearing to read "Sarah Borland".

Sarah L. Borland
Communications Coordinator



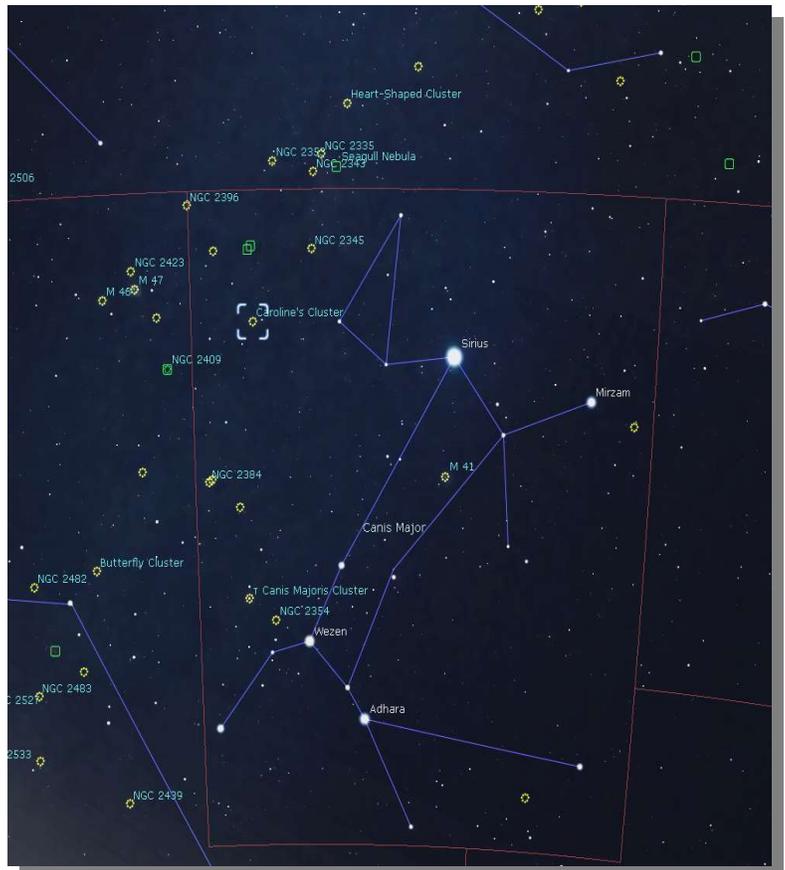
A handwritten signature in black ink, appearing to read "Frances Castellana".

Frances J. Castellana
Communications Coordinator



NGC 2360 Caroline's Cluster

- Open cluster in the constellation Canis Major.
- Discovered on 26 February 1783, by Caroline Herschel.
- A beautiful cluster of pretty compressed stars.
- Located in Canis Major, west of Sirius
- Lies 3.5 degrees east of Gamma Canis Majoris and less than one degree northwest of the eclipsing binary star R Canis Majoris.
- Combined apparent magnitude of 7.2. It is 13 arc minutes in diameter.
- It's also compact, which means it has high surface brightness. So it's easy to pick out even in moderately light-polluted skies.
- Date the age of the cluster at 2.2 billion years.
- The cluster has a diameter of around 15 light-years and is located 3700 light-years from Earth.
- In binoculars, NGC 2360 appears diffuse and unresolved and spans about half the size of the full Moon.
- The cluster lies embedded in a rich field of stars along the plane of the Milky Way.
- In a telescope, the cluster is cracked open into dozens of 9th to 12th magnitude stars that are centered around an elliptical core, which curved branches poking out to the east and west.



Enjoy February's "Black Moon"

Because it can mean SO many things– literally

What Is a Black Moon?

There are several definitions of a Black Moon. It can be the 3rd New Moon in an astronomical season with 4 New Moons or the 2nd New Moon in the same calendar month.

Black Moon is not a well known astronomical term. In recent years, the term has been made popular by social media, astrologers, and followers of the Wiccan religion.

No Single Definition

There is no single accepted definition of a Black Moon. The term has been commonly used to refer to any of the following phenomena associated with the New Moon:

- **2nd New Moon in a calendar month:** These Black Moons are the most common ones, and they occur about once every 29 months. Because of time zone differences, the month they happen in can vary, like the Black Moon in September 2016 (US) or October 2016 (UK).
- **3rd New Moon in a season of 4 New Moons:** These Black Moons are a little rarer, and occur about once every 33 months. Astronomers divide a year into 4 seasons - spring, summer, fall (autumn), and winter. Usually, each season has 3 months and 3 New Moons. When a season has 4 New Moons, the 3rd New Moon is called a Black Moon. This is the exact counterpart to the original definition of a Blue Moon, except that Blue Moons are Full Moons.
- **A calendar month without a New Moon:** About once every 20 years, the month of February does not have a New Moon. This can only happen in February, as this is the only month which is shorter than 1 lunation. When this occurs, both January and March will have 2 New Moons, instead of the usual 1 New Moon. The next Black Moon by this definition will occur in 2033, while the last one was in 2014. Because of time zone differences, these Black Moons may not happen all over the world. For instance, there is a Black Moon in the most western parts of the US in February 2022, but not in Europe or Australia.
- **A calendar month without a Full Moon:** About once every 20 years, February does not have a Full Moon. Instead, January and March have 2 Full Moons each. The next Black Moon by this definition will occur in 2018, while the last one was in 1999. Because of time zone differences, these Black Moons may not happen all over the world

WHEN WORLDS COLLIDE!

When I was a kid, I watched a lot of SciFi movies on TV and one of my favorite was the movie "When Worlds Collide". It was about a pair of rogue planets entering our solar system and making a bee line for Earth. One was a close miss and the second was a head on collision. The movie had one scene where the actors look up to a sky with two planets in it. One was a little in front of the other and I wondered how often it happened with the planets in our solar system that two planets, optically of course, transit or occult each other and present this kind of appearance? It turns out it is very rare. So rare that no one really thinks about it. So very rare that no one alive today has seen such an event. When it occurs, it would be a fine phenomena to observe.

(Continued in Next Column)

mercury
occults
mars
2079



Date and Time		Julian Day	
2079	- 8 - 10	20	: 30 : 0

It would be much different than a Moon- planet occultation or a transit of one of the inferior planets across the Sun as both planets are relatively the same size- tiny. The time of the event would be extremely short in duration for two inferior planets and a modest duration for two superior planets. The path to observe the event on the Earth would be very narrow and very short (compared to the path of a total solar eclipse). It is possible that there might be a total brightening of the pair as they approached each other and then a dimming during the occultation/ transit if the object behind is much brighter. It appears two superior planets having an occultation/ transit is the most very rare occurrence of all.

(Continued on Next Page)

jupiter
occults
neptune
1702

Date and Time		Julian Day	
1702	- 9 - 19	10	: 57 : 21

03° 18.2 FPS 1702-09-19 10:57:21 UTC-05:00

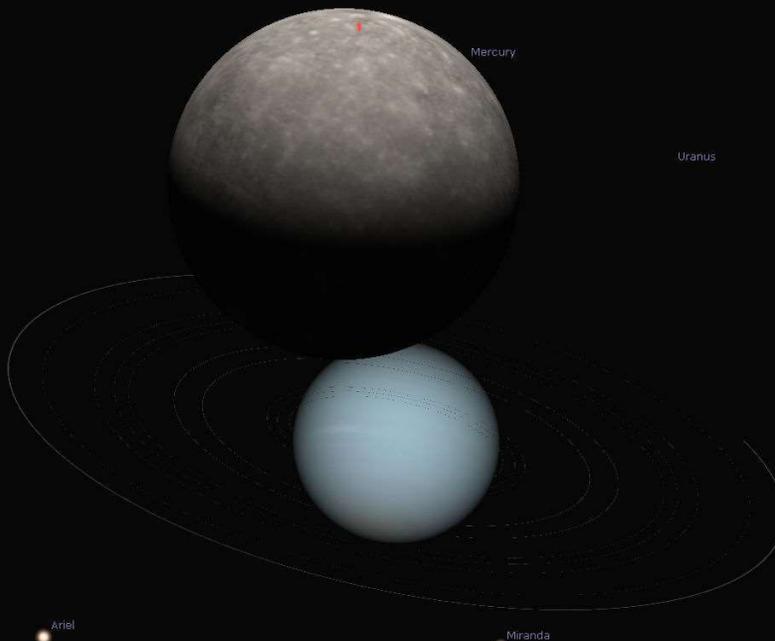


venus occults mercury 1737



Date and Time		Date and Time	
Date and Time	Julian Day	Date and Time	Julian Day
1737 - 5 - 28	16 : 46 : 54		

mercury occults uranus 1793



Date and Time		Date and Time	
Date and Time	Julian Day	Date and Time	Julian Day
1793 - 7 - 21	0 : 34 : 54		

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Technically, the event is called a **Mutual Planetary Occultation/ Transit** and it is extremely rare. The last one occurred January 3rd, 1818 (Venus transiting Jupiter) and the next one is November 22nd, 2065 which, coincidentally is also Venus transiting Jupiter. It is an astounding 247 years between the two dates. There only 18 occurrences between 1700 and 2200.

To say that this phenomena has never been observed would not be a true statement. An occultation of Mars by Venus on 13 October 1590 was observed by the German astronomer Michael Maestlin at Heidelberg. The 1737 event (Mercury–Venus) was observed by John Bevis at Greenwich Observatory and it is the only detailed account of a mutual planetary occultation. A transit of Mars across Jupiter on 12 September 1170 was observed by the monk Gervase at Canterbury, and by Chinese astronomers.

Sad to say the only ones to be around to see the next series are not born yet , children or young adults now but it may make for a great viewing experience someday.

Note: Simulations for this article were run on Stellarium.. I had to play with different locations on the Earth to get the best view.

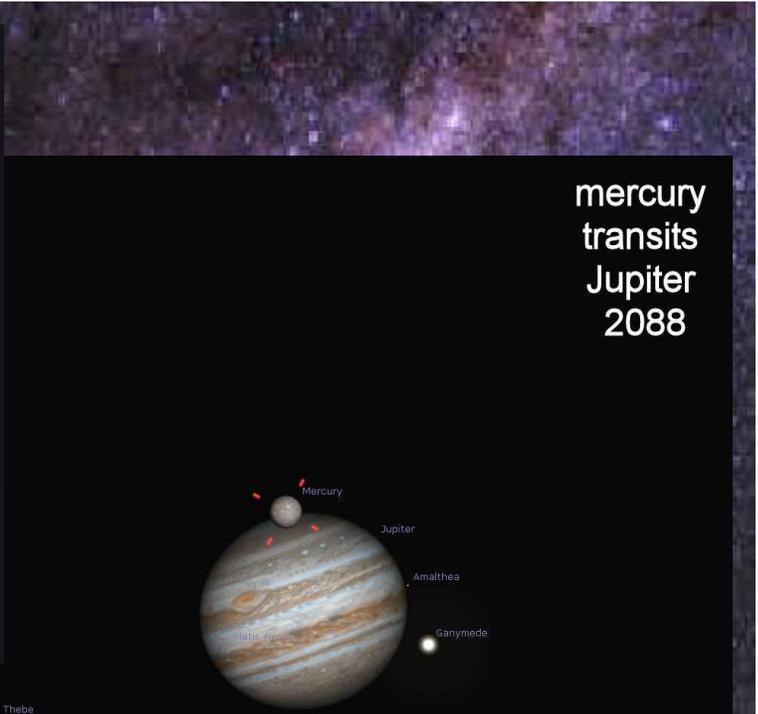
Terry Dufek

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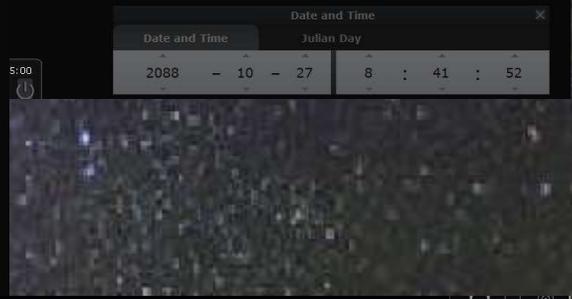
mercury
occults
neptune
2067



mercury
transits
Jupiter
2088



venus
transits
jupiter
2065



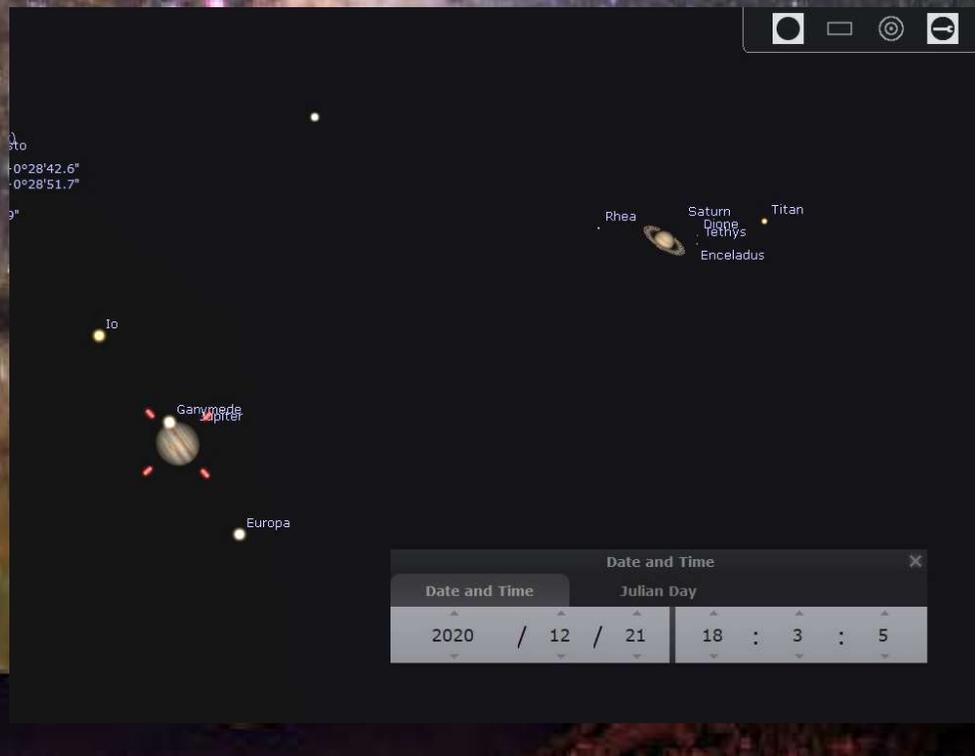
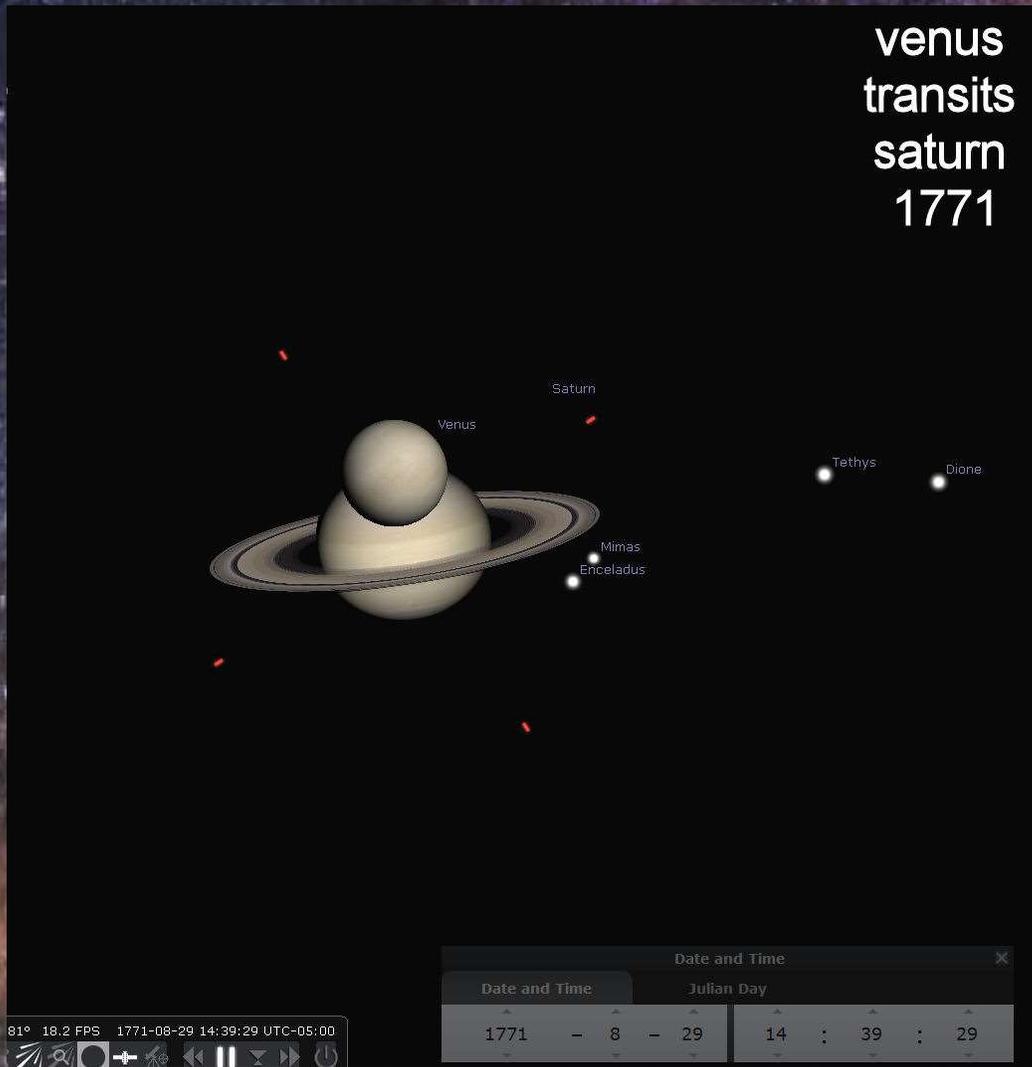
Mars-
Jupiter
Dec 2, 2223



HOW OFTEN DOES IT HAPPENS?

Year	Date	time	Elong from Sun	Occurrence	Notes
-2	June 17	17:53 UT	45 deg W	Venus/Jupiter	very large elongation. occurs over middle east
1170	September 19	20:44 UT	105 deg E	Mars/Jupiter	Observations recorded by Gevase of Canterbury and observers in China
1210	September 17	10:35 UT	7 deg W	Venus/Jupiter	too close to Sun. Central Occultation
1387	September 30	00:14 UT		Mars/Jupiter	
1477	October 18	15:15 UT		Mars/ Saturn	
1522	February 07	08:15 UT		Mars/Saturn	
1570	February 05	07:47 UT	25 deg W	Venus/Jupiter	occurred over South Atlantic, Argentina. no historical record
1613	January 04	02:08 UT	108 deg W	Jupiter/ Neptune	Neptune not discovered yet. Galileo observed Jupiter Dec 28 but labeled Neptune as a star.
1623	August 15	17:03 UT	9 deg W	Jupiter/ Uranus	Uranus yet to be discovered
1702	September 19	13:26 UT	165 deg W	Jupiter/ Neptune	Neptune yet to be discovered
1708	July 14	13:03 UT	25 deg E	Mercury/Uranus	Uranus not discovered yet
1708	October 04	12:46 UT	1 deg E	Mercury/Jupiter	too near the Sun
1737	May 28	21:50 UT	22 deg E	Mercury/ Venus	observed by Bevis. only historical detailed account
1793	July 21	05:40 UT	24 deg E	Mercury/ Uranus	Uranus discovered 1781. only observable at Longitude 160 West
1808	December 09	20:35 UT	20 deg W	Mercury/ Saturn	Barely overlap is seen at South pole
1818	January 03	21:51 UT	16 deg W	Venus/Jupiter	occurred over far east. no historical record. over unpopulated area
					247 YEAR GAP
2065	November 22	12:47 UT	8 deg W	Venus/Jupiter	too close to Sun
2067	July 15	11:57 UT	18 deg W	Mercury/ Neptune	Occultation at North Pole w/ 24 hour daylight
2079	August 11	1:30 UT	11 deg W	Mercury/Mars	visible at sunrise in the Middle East
2088	October 27	13:46 UT	5 deg W	Mercury/Jupiter	too near the Sun
2094	April 07	10:46 UT	2 deg W	Mercury/Jupiter	too near the Sun
2123	September 14	15:26 UT	16 deg E	Venus/Jupiter	occurs over Pacific Ocean
2126	July 29	16:07 UT	9 deg W	Mercury/Mars	
2133	December 03	14:10 UT	4 deg E	Mercury/Venus	Venus Large but very near the Sun
2223	December 02	12:39 UT	89 deg E	Mars/ Jupiter	836 years since last one
2478	August 29	23:11 UT		Mars/ Jupiter	255 since last one

venus transits saturn 1771



OBSERVING OPPORTUNITY
 No occultations or transits of Jupiter over Saturn can be calculated in a reasonable time span though there is a very close approach on December 21, 2020. 6' of arc separation.. It will be low in the southwest skies at 5:00 p.m.

UPCOMING EVENTS

PAC Meeting

Feb 12th, 7:00PM

Location is at the Butterworth Center
Monthly Meeting

Constellation Report: Cindy Pippert
Presentation: “Galileo Leap Forward
in Astronomy” by Mike Mack



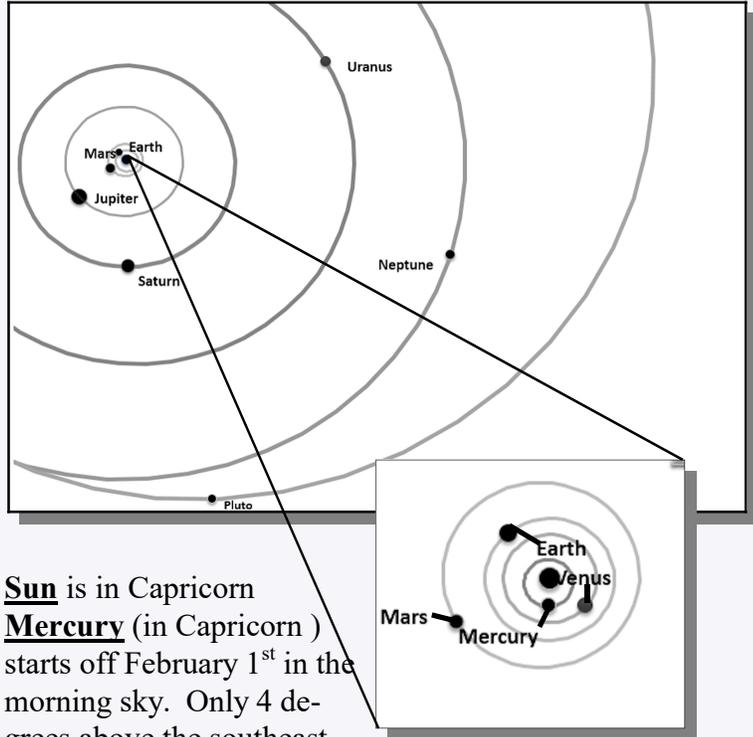
- **March 12th, PAC Business Meeting** 7:00 p.m. W/ Smorgasbord of Short Presentations
- **March 16-18th, 2018 Messier Marathon (QCAS** at Menke Observatory)
- **March 17th, 2018 Imagination Station at WIU** - QC Campus Outreach
- **March 17th, 2018 Niabi Zoo Outreach**, Featuring: New Moon, Winter Constellations visible , Mercury, Venus, Uranus, M44 (The Beehive Cluster), La Superba (red super-giant star), Cor Caroli (beautiful double star)
- **April 9th, PAC Monthly Meeting** 7:00 p.m. Presentation: "An Artistic & Literary View of the Heavens" Anne Bauer, Jan Gustafson, and Joanne Hachtel
- **April 21st, 2018 Niabi Zoo Outreach**, Featuring: Moon , just before 1st quarter, Venus in west , M37 (large open cluster), Epsilon Bootis (gold & blue double star), Mizar (multiple star system), M104 (The Sombrero Galaxy)
- **May 19th, 2018 Niabi Zoo Outreach**, Featuring: Moon, just before 1st quarter. Venus in the west after sunset. Jupiter low in the S.E. at 9 p.m.
- **June 16th, 2018 Niabi Zoo Outreach**, Featuring: Moon, crescent close to Venus. Jupiter high in the S.E. with Saturn rising at 9 p.m. , M13 (globular star cluster), NGC6543 (Cat's Eye Nebula), Epsilon Lyrae (The Double-Double, multiple star system)
- **July 21st, 2018 Niabi Zoo Outreach**, Featuring: Moon just after 1st quarter. Venus in the western sky at sunset. Jupiter, Moon, and Saturn high in southern sky at 9 p.m. Mars low in the S.E. at 10 p.m. (Opposition), Gamma Delphini (double star), M57 (The Ring Nebula)
- **August 11, 2018 Annual Club Picnic & Perseid Viewing** - Paul Castle Observatory
- **August 18th, 2018 Niabi Zoo Outreach**, Featuring: Venus, Jupiter, Moon, Saturn, Mars, Neptune, M11 (The Wild Duck Cluster), Albireo (gold & blue double star), M17 (The Swan Nebula)
- **September 7– 9th, 2018 Eastern Iowa Star Party (QCAS** at Menke Observatory)
- **October 27, 2018 Annual Banquet** : Butterworth Center, Moline Illinois

Mark your calendars and watch upcoming newsletters for more information!

ASTRONOMICAL CALENDAR OF EVENTS

<u>Date</u>	<u>Time</u>	<u>Event</u>
Feb 01 12:24		Regulus 0.9°S of Moon
Feb 07 09:54		LAST QUARTER MOON
Feb 07 13:47		Jupiter 4.3°S of Moon
Feb 08 23:12		Mars 4.4°S of Moon
Feb 11 08:16		Moon at Apogee: 405701 km
Feb 11 08:46		Saturn 2.5°S of Moon
Feb 11 10:40		Mars 5.0°N of Antares
Feb 14 15:11		Moon at Descending Node
Feb 15 14:51		Partial Solar Eclipse; mag=0.599
Feb 15 15:05		NEW MOON
Feb 17 06:00		Mercury at Superior Conjunction
Feb 23 02:09		FIRST QUARTER MOON
Feb 23 11:07		Aldebaran 0.7°S of Moon
Feb 27 08:48		Moon at Perigee: 363938 km
Feb 27 11:28		Beehive 2.3°N of Moon
Feb 27 23:03		Moon at Ascending Node
Mar 01 05:09		Regulus 0.9°S of Moon
Mar 02 00:51		FULL MOON (1st)
Mar 04 06:00		Mercury 1.1° of Venus
Mar 04 14:00		Neptune in Conjunction with Sun
Mar 07 06:57		Jupiter 4.1°S of Moon
Mar 09 11:20		LAST QUARTER MOON
Mar 10 00:37		Mars 3.8°S of Moon
Mar 10 11:00		Mercury at Perihelion
Mar 11 02:37		Saturn 2.2°S of Moon
Mar 11 09:13		Moon at Apogee: 404682 km
Mar 14 03:47		Moon at Descending Node
Mar 15 15:00		Mercury at Greatest Elong: 18.4° E (4 degrees NW of Venus)
Mar 17 13:12		NEW MOON
Mar 18 19:07		Venus 3.7°N of Moon
Mar 19 08:00		Mercury 3.8° of Venus
Mar 20 16:15		Vernal Equinox
Mar 22 22:33		Aldebaran 0.9°S of Moon
Mar 24 15:35		FIRST QUARTER MOON
Mar 26 17:17		Moon at Perigee: 369104 km
Mar 27 00:52		Beehive 2.2°N of Moon
Mar 27 10:56		Moon at Ascending Node
Mar 28 13:38		Regulus 1.0°S of Moon
Mar 31 12:37		FULL MOON (2nd)

THE PLANETS February 2018



Sun is in Capricorn
Mercury (in Capricorn) starts off February 1st in the morning sky. Only 4 degrees above the southeast horizon at sunrise. Moving toward conjunction with Sun. It is mag $-.61$ and a diameter of $4.9''$ of arc.

Venus (in Capricorn) on February 1st, is about 4 degrees off the west-southwest horizon at sunset. Too close to Sun for viewing. It is mag. -3.92 and a diameter $9.8''$ of arc.

Mars (in Scorpius) on February 1st, is about 25 degrees above the south-southeastern horizon at 6:00 a.m. It is about 8 degrees north of Antares. It shines at a mag. 1.17 and disk has grown to $5.6''$ of arc.

Jupiter (in Libra) on February 1st. Almost due south, it is almost 32 degrees above the southern horizon at 6:00 a.m. It is about 12 degrees Northwest of Mars at this time. It is mag. -1.98 with a diameter of $35.9''$ of arc.

Saturn (in Sagittarius) on February 1st. It is about 9 degrees above the southeast horizon at 6:00 a.m. It is mag. $.55$ and has a disk size of $15''$ (ring size $35.8''$)

Uranus (in Pisces) on February 1st is 54 degrees above the south-southeast horizon at 6:00 p.m. It is mag. 5.83 and has a $3.5''$ diameter disk.

Neptune (in Aquarius) on February 1st. It is 9 degrees above the west-southwest sky at about 6:00 p.m.. It is mag. 7.95 and has a $2.2''$ diameter disk. .

Pluto (in Sagittarius) on February 1st is mag. 14.30 and 5 degrees above the east-southeastern horizon at 7 a.m.



This article is provided by NASA Space Place.

With articles, activities, crafts, games and lesson Plans. NASA Space Place encourages everyone to get excited about science and technology. Visit spaceplace.nasa.gov to explore space and EarthScience!

Sixty Years of Observing Our Earth

By Teagan Wall

Satellites are a part of our everyday life. We use global positioning system (GPS) satellites to help us find directions. Satellite television and telephones bring us entertainment, and they connect people all over the world. Weather satellites help us create forecasts, and if there's a disaster—such as a hurricane or a large fire—they can help track what's happening. Then, communication satellites can help us warn people in harm's way.

There are many different types of satellites. Some are smaller than a shoebox, while others are bigger than a school bus. In all, there are more than 1,000 satellites orbiting Earth. With that many always around, it can be easy to take them for granted. However, we haven't always had these helpful eyes in the sky.

The United States launched its first satellite on Jan. 31, 1958. It was called Explorer 1, and it weighed in at only about 30 pounds. This little satellite carried America's first scientific instruments into space: temperature sensors, a microphone, radiation detectors and more.

Explorer 1 sent back data for four months, but remained in orbit for more than 10 years. This small, relatively simple satellite kicked off the American space age. Now, just 60 years later, we depend on satellites every day. Through these satellites, scientists have learned all sorts of things about our planet.

For example, we can now use satellites to measure the height of the land and sea with instruments called altimeters. Altimeters bounce a microwave or laser pulse off Earth and measure how long it takes to come back. Since the speed of light is known very accurately, scientists can use that measurement to calculate the height of a mountain, for example, or the changing levels of Earth's seas.

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Satellites also help us to study Earth's atmosphere. The atmosphere is made up of layers of gases that surround Earth. Before satellites, we had very little information about these layers. However, with satellites' view from space, NASA scientists can study how the atmosphere's layers interact with light. This tells us which gases are in the air and how much of each gas can be found in the atmosphere. Satellites also help us learn about the clouds and small particles in the atmosphere, too.

When there's an earthquake, we can use radar in satellites to figure out how much Earth has moved during a quake. In fact, satellites allow NASA scientists to observe all kinds of changes in Earth over months, years or even decades.

Satellites have also allowed us—for the first time in civilization—to have pictures of our home planet from space. Earth is big, so to take a picture of the whole thing, you need to be far away. Apollo 17 astronauts took the first photo of the whole Earth in 1972. Today, we're able to capture new pictures of our planet many times every day.

Today, many satellites are buzzing around Earth, and each one plays an important part in how we understand our planet and live life here. These satellite explorers are possible because of what we learned from our first voyage into space with Explorer 1—and the decades of hard work and scientific advances since then. To learn more about satellites, including where they go when they die, check out NASA Space Place: <https://spaceplace.nasa.gov/spacecraft-graveyard>



This photo shows the launch of Explorer 1 from Cape Canaveral, Fla., on Jan. 31, 1958. Explorer 1 is the small section on top of the large Jupiter-C rocket that blasted it into orbit. With the launch of Explorer 1, the United States officially entered the space age. Image credit: NASA

PAC lab experiment at Pleasant Valley High School

Here are the pictures from Ian's physics lab last night (Jan. 23rd) at Pleasant Valley HS. This was a lot of fun and thanks to Ian for serving as our teacher for the pendulum equation derivation. **Al Sheidler**



INCOMING...

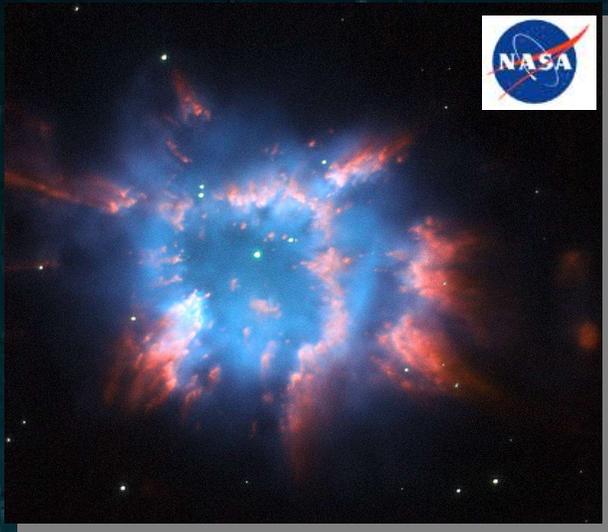
You might find these pictures from John McGill interesting. Members of the Ford Amateur Astronomy Club searched for and found some meteorite fragments from the bolide that appeared this last week (Jan. 16th) over southeastern Michigan. Looks like the snow enhanced the likelihood of finding meteorites. Thanks.



here is link to the news conference:
<http://wcrz.com/michigan-meteor-press-conference-at-longway-planetarium-video/>



NEWS LINKS



Hubble's Holiday Nebula "Ornament"

<https://www.nasa.gov/multimedia/imagegallery/iotd.html>

Follow Juno "Mission to Jupiter"

https://www.nasa.gov/mission_pages/juno/main/index.html



STAR "EATS" PLANET

December 21st, 2017

<https://www.sciencedaily.com/releases/2017/12/171221160737.htm>



(Continued on next page)

NEWS LINKS



Supermassive black holes control star formation in large galaxies

January 1st, 2018

<https://www.sciencedaily.com/releases/2018/01/180101144800.htm>

NASA's newly renamed Swift Mission spies a comet slow-down

January 10th, 2018

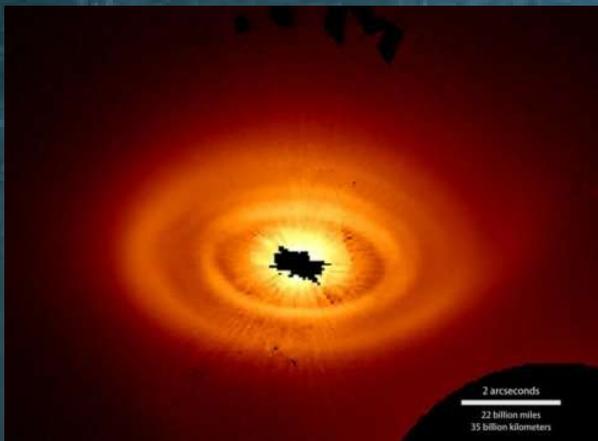
<https://phys.org/news/2018-01-nasa->



No planets needed for rings around stars: Disk patterns can self-generate

January 11th, 2018

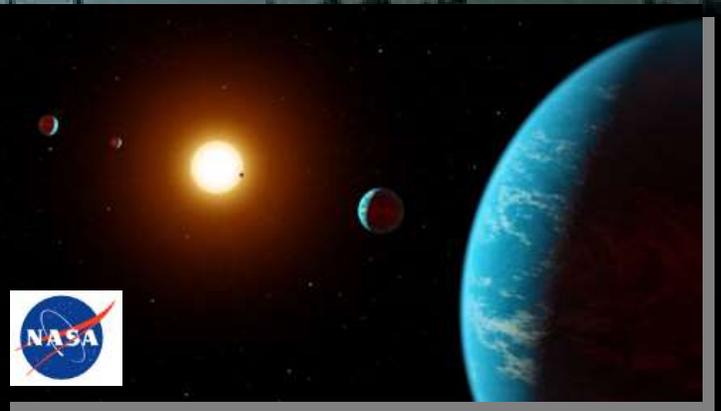
<https://www.sciencedaily.com/releases/2018/01/180111155042.htm>



Multi-planet System Found Through Crowdsourcing

January 11th, 2018

<https://www.nasa.gov/feature/jpl/multi-planet-system-found-through-crowdsourcing>



(Continued on next page)

NEWS LINKS



Take a Breathtaking Trip Through the Orion Nebula in NASA's New Video

January 15th, 2018

<https://www.smithsonianmag.com/smart-news/take-trip-through-orion-nebula-nasas-awesome-video-1-180967825/>

How I Discovered the Origins of the Cigar-Shaped Alien 'Asteroid' 'Oumuamua

January 16th, 2018

[https://www.space.com/39300-how-i-discovered-alien-asteroid-oumuamua.html?](https://www.space.com/39300-how-i-discovered-alien-asteroid-oumuamua.html?utm_content=bufferf1850&utm_medium=social&utm_source=facebook)

[utm_content=bufferf1850&utm_medium=social&utm_source=facebook](https://www.space.com/39300-how-i-discovered-alien-asteroid-oumuamua.html?utm_content=bufferf1850&utm_medium=social&utm_source=facebook)



NASA Team Studies Middle-aged Sun by Tracking Motion of Mercury

January 18th, 2018

<https://www.nasa.gov/feature/goddard/2018/nasa-team-studies-middle-aged-sun-by-tracking-motion-of-mercury>



Extra Stars Might Downsize Exoplanets

January 22nd, 2018

http://www.skyandtelescope.com/astronomy-news/extra-stars-might-downsize-exoplanets-2201201823/?utm_content=buffer01c2b&utm_medium=social&utm_source=facebook.com&utm_campaign=buffer



UNCLE ROD'S ASTRO BLOG

A gentlemen in the deep south puts out monthly blog containing a lot of Astronomy information, equipment reviews, his travels and just a lot of fun stuff to read on a cold night.

Check out this link:

<http://uncle-rods.blogspot.com/>

Uncle Rod's Astro Blog
A quiet little spot where Rod Mollise shares his adventures and misadventures...

Me
Name: [Rod Mollise](#)
Location: Mobile, Alabama, United States
View my complete profile

When is a Star Party Not a Star Party?
Sunday, April 26, 2015



The answer is "never" the elements that make star partying, I still think is secondary to my first...
Or so I tried to tell the Scrimmage, the spirit me away from the star nights that I did it again 16th, approached, I b...
That began with my Telescope or at least white envelope. Rut...

I was expecting that. The last time I was called was in 1985, just after then was a call to the court to tell 'em I was no longer an Alabama another peep out of the judicial system.

I was expecting a Jury Summons now both because it had been so long since 1994. Same address. Same phone number. Same voting place, license, voting place. I had the suspicion one of those things would...

Not that I have a pro...
I try to do every sing...

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A quiet little spot where Rod Mollise shares his adventures and misadventures...

Me
Name: [Rod Mollise](#)
Location: Mobile, Alabama, United States
View my complete profile

You Can't Go Home Again
Sunday, May 20, 2007



I really wanted it to work, but I'm been working great. No, what I me...
Sometimes I do long for that simple brigade a little more than a decade Thomas Wolfe was not an amateur...
As you can see in the picture, Rod's was before I undertook this exercise wonderful job of bringing a sick old the Sky C with this...
Dark our moving in Alabama, United States
Transparent amazing profile

Despite these hazy, humid skies, Old Bets Uncle has forgotten how to collimate a Ne...
When the scope was ready, though, she p of the sky to the other, often putting targ had made a difference too. Stars seemed have to rely on my fading memories of ho...
ted yet, and yet, I found myself enjoying...

Issue 503: On the Road Again...
Monday, July 25, 2016



Well, cats and kittens it's *that time again*. What time? St Annual Road Tour. First one I'll be speaking at is the Main some brief reporting from the scene, but don't expect to Wisconsin's Northwoods Starfest).

So what's an Astro-blog deprived astronomy maniac to do ten years now. There's plenty of stuff you might have mi...

posted by Rod Mollise @ 7:47 AM 1 comments [links to this post](#)

Issue 502: How Low Can You Go on the Messiers?
Sunday, July 17, 2016



As in "How little aperture can an expert backyard?" This is, friends, a follow on concerned me of late is the size and we years from now, but right now.

Last time, I mentioned, somewhat in part of my Zhumell 10-inch Dobsonian problem night when I transported the Dob, Zelda good friends.

Zelda, a GSO scope with a solid, steel tube had at least lessened, if not gone away, dark site, and reloading her in the truck after I get home, unloading the next mo...
nice views on a good if not perfect evening.

And Zelda did deliver those views: spiral arms in M51, countless stars in M10 and M12.

Member Observations

MERCURY EASILY VIEWED

I got up early on January 4th . At 6:10 am, spotted Jupiter and Mars high in the southern sky from my window. I knew that Mercury was in a direct line with the two and looked at the southeast horizon as I had clear view, . Did not see anything at first. I tried to follow the line several times but didn't see anything. I finally got out a pair of binoculars and at 6:20 a.m. caught it just over a roof in the southeast. It got much brighter as it rose and could finally see it with the eye very easily. Very bright at magnitude -0.35 . It was very steady in appearance with no flashing from titillation (for being so low) and a slight reddish tint to it (when viewed through binoculars). According to Stellarium, it is about at gibbous phase. It is just 3 days past greatest western elongation. It will stay in about the same position for several days before dimming slightly and moving back towards the Sun. I finally lost sight of it at 6:55 a.m. I did not make telescopic observations as it was -7 degrees and the telescope would probably freeze before I got it set up.

Terry Dufek



Member Observations

Mars– Jupiter Conjunction



Photo By
Ken Boquist
January 5th , 2018

I went out this morning and imaged the conjunction. Attached is a photo. It was taken about 5:50 am. The planets are arranged properly according to the cardinal directions in the sky. The Galilean satellites are in the classic I II III IV position from left to right (Io, Europa, Ganymede, and Callisto). The image scale and exposure time needed to show everything was too long to capture any detail on Jupiter itself. As it is, it was difficult to focus given a temp of -10d.

It's too bad that the actual conjunction doesn't occur until 3:03 pm this afternoon according to the Naval Observatory. Then Jupiter and Mars would have been vertical in the picture and slightly closer.

(Continued in next column)

I also decided to try to see Mercury. I have never seen a December morning apparition, and they aren't favorable for northern observers. However, I found it was really not that difficult. I went down to Davenport's Marquette St. boat ramp and saw it at about 6:35 am. I had no problem seeing it visually, Binoculars weren't necessary. All I have to do now is see it again in the March evening apparition to cross off another project on the Solar System observing program!

Ken Boquist
January 6th, 2018

(Continued on next page)



Member Observations

Mars– Jupiter Conjunction (cont)

Photos By
Al Sheidler
January 5th, 2018



FL=135mm, F5.0, 1.0 sec,
ISO3200, Nikon D90



(Continued on next page)



Member Observations

Mars– Jupiter Conjunction (cont)

Photos By
Al Sheidler
January 5th, 2018



FL=300mm, F5.6, 1/4 sec,
ISO1600, Nikon D90



Member Observations



I've attached a picture I took of the sun today (Jan. 27th) in H-alpha. It was taken at 11:23 today with my 50mm H-alpha scope double stacked. I was able to get a reasonably good focus today, so you should be able to zoom in on the prominences. The group on the left, particularly the lowest of the three, is really nice!

Ken Boquist

LUNAR ECLIPSE

These are a few pictures of this morning's (January 31st) lunar eclipse. The smaller images were taken with a 300 mm telephoto lens. The larger images were taken through an ETX-90 telescope. I used a Nikon D90 camera to capture the images. Various camera settings were used to get the effect I was after in these images. Let me know if you want to know the settings. Thanks. **Al Sheidler.**



(Continued on next page)

LUNAR ECLIPSE

Viewing was from Riverside Park in Moline by the boat ramp.

All taken with Canon 7D II; 100-400 @ 400 @ f/5.6.

- 547A7512 MOD 5X5 - 5:51am 1/800 sec, ISO400
- 547A7545 MOD 5X5 - 6:30am 1/4 sec, ISO800
- 547A7562 MOD 5X5 - 6:39am 1/2 sec, ISO1600

Mike Gaciah





PAC MONTHLY MEETING

President Alan Sheidler called the January meeting of the Popular Astronomy Club to order in the Deere-Wiman carriage house. 7:00 p.m. local time, on Monday January 8th, 2018. There were 19 members and 3 guests.

Observation Reports:

Ken Boquist and Terry Dufek reported that they had observed Mercury low in the southeast the previous week. Very easy to see. Al Sheidler and Ken Boquist presented photos taken of the Mars– Jupiter conjunction from January 5th and 6th. Ken also had a photo of the Sun and an enhanced version (done by Al) which brought out great detail. Dale Hachtel reported observations of the Super Moon on January 1st.

There was some discussion of the upcoming lunar eclipse on January 31st and where best to see it as there is such a short time before it sets.

Outreach Possibility:

Dino Milani reported that a possible outreach might be put together with twenty college students at an upcoming date (to be determined).

Report Openings:

- **Constellation Reports:** filled for the year
- **Programs:** filled for the year
- **Newspaper Articles:** Openings for June, August, September, October, November, December

(Continued in next column)

Club Event:

On January 23rd, Ian Spangenberg will conduct a physics lab at the Pleasant Valley High School from 7 to 9 p.m. More details to follow.

Upcoming Meetings and Events:

The next meeting will be on February 12th at the Butterworth Center at 7:00 p.m. (all further meetings until further notice will be there) Mike Mack has the presentation "Galileo Galilei - The Leap Forward in Astronomy" and Cindy Pippert has the constellation report.

The March 12th meeting will be a business meeting and program containing a Smorgasbord of Short Presentations

March 16-18th, 2018 Messier Marathon (QCAS at Menke Observatory)

March 17th, 2018 Imagination Station at WIU - QC Campus Outreach

March 17th, 2018 Niabi Zoo Outreach,

Constellation Report: Ara by Adam Beals

Program: Early Solar System Formation by Terry Dufek

The Meeting was adjourned.