NIGHTFALL

A PUBLICATION OF THE HUACHUCA ASTRONOMY CLUB

MARCH 2019

PRESIDENT'S NOTES

March? Already? All Ready!

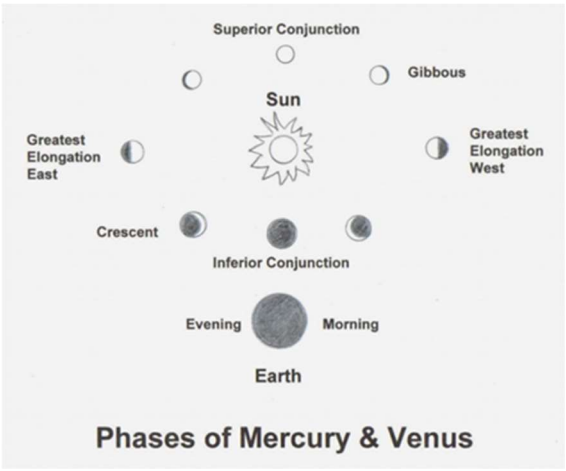
As planets go, Mercury has more fascination to me than the reality of observing the planet for its surface properties. A weird little planet; very little tilt to its polar axis, and tidally locked with the Sun that yields a 3:2 spin-orbit resonance. That means it rotates on its axis exactly three times for every two revolutions around the Sun. It has a high density, more like that of the core of a stony planet, and it appears to have very little, if any, atmosphere. Mercury is the closest planet to the Sun, but not the hottest. It does, however, have the greatest surface variations in temperature, "ranging from 100 K (−173 °C; −280 °F) at night to 700 K (427 °C; 800 °F) during the day across the equatorial regions. The Polar Regions are below 180 K (−93 °C; −136 °F),"* so its poles are known to hold frozen water.

Until recently, it was not known which was larger, Mercury or Pluto. Now we know that the diameter of Mercury is 4,879 km twice that of Pluto's 2,360 km. That helps in the, "why is Mercury a planet and Pluto isn't?" argument a bit.

Still weird, little Mercury is a planet, and we all want to look at the planets from time to time. This is why I brought up Mercury in the first place. Mercury is not always easy to see, often being too close to the Sun for safe viewing. However, in the last few weeks of February and the first week of March, Mercury will be well placed in the evening sky and especially favorable for Northern Hemisphere viewing. It will reach greatest elongation on February 27, and then start moving back towards the Sun. However, despite my first sentence, there are reasons to want to study Mercury telescopically.

I don't know of many images from amateur telescopes, or terrestrial professional observatories for that matter, that show any surface features on Mercury. Therefore, there's that, attempting to take images of the tiny world. Then, there is coolest reason to view (either by imaging or visually) Mercury from time to time. Referred to as having an inferior orbit (or being an inferior planet -- a term not meant to be derogatory), Mercury's orbit is simply closer to the Sun, so smaller than our own. Because of this smaller orbit, Mercury exhibits the full range of phases as does Venus and the Moon.

PHASES OF INFERIOR PLANETS



Source: The astronomical society of Central New York State's Mohawk Valley and surrounding areas http: //www.mvas-ny.org/HowObsPlanets.htm

Oh, and one last reason on my short list to view Mercury, to get some eyepiece time on the planet throughout this year in preparation for the transit nearly directly across the disk of the Sun on the morning of November 11, 2019. That will probably be the biggest astronomical event of the year, unless you're travelling south to the total eclipse, see a meteor crash or a great comet comes by.

Also coming this month, the Spring Equinox 2019 in the Northern Hemisphere will be at 2:58 PM local time on Wednesday, March 20. The Sun will appear directly over the equator, and there will be nearly equal amounts of day and night throughout the world. This is also the first day of fall (Autumnal Equinox) in the Southern Hemisphere. Along the equator, it's pretty much just another day.

The next day, March 21, is a full moon; another supermoon (the last of three for 2019). This full moon is known as the Full Worm Moon as well as the Full Crow Moon, the Full Crust Moon, the Full Sap Moon, and the Lenten Moon.

Last, but perhaps even more amazing than these natural events, the Huachuca Astronomy Club (HAC) of Southeastern Arizona 2019 Astronomical/Optical Swap Meet and Sale that lands in the Patterson observatory March 23, 2019 at noon.

Anyhow, get out and stare!

*Prockter, Louise (2005). "Ice in the Solar System" (PDF). Volume 26. Johns Hopkins APL Technical Digest. Archived from the original on September 11, 2006.

Please Welcome Our New Members

Allan Bartlett of New Liskeard, Ontario, Canada joined the club in February. Allan is a friend of HAC members Ian and Sylvia Halton who also live in Ontario. Welcome to the club Allan, we are glad you joined!

At the March Meeting

The March meeting will be held on March 22 at 7 PM in the Community Room, Student Union Building of Cochise college 901 N. Colombo Avenue, Sierra Vista. Our speaker is Dr. Peter Behroozi of the University of Arizona. His talk will center on how the evolution of dark matter and dark energy drive the formation of galaxies.

Peter uses computational statistics to study links between dark matter halo assembly, galaxy formation, and the growth of supermassive black holes. His research involves generating simulated universes for millions of different physical models, with the aim of constraining which physics best describes current observations, and which new observations would best improve our current understanding of galaxy and black hole formation. These methods are especially powerful as they allow combining many disparate observations (across different redshifts, environments, and formation tracers) into a self-consistent description of the Universe.

Astronomy Swap Meet

Here is your chance to unload that unused telescope, duplicated eyepiece, and unwanted camera! And while you are there buy someone else's unused telescope, duplicated eyepiece or unwanted camera. Don't miss it!

The 2019 Astronomical & Optical Swap Meet and Sale will be held on Saturday March 23, at the Patterson Observatory. Setup starts at 11 am, Sales start at noon and go to 4 pm.

Don't forget your checkbook!

The Swap Meet flyer with all the details is located at https://groups.io/g/HACAstro/files/ but you can also contact HAC President David Roemer with your questions.

Join the HacAstro Group

The club's GroupsIO list serve is our electronic meeting room. Members and friends of HAC can relate observing experiences, share astrophotos, ask questions and advertise observing opportunities and star parties. It is also the vehicle the club officers use to announce events and club initiatives.

If you are not subscribed to the group, you are missing out! To join, just send an email to HACAstro+subscribe@groups.io or ask the administrator, Ted Forte, to send you an invitation.

NASA Night Sky Notes March 2019

This article is distributed by NASA Night Sky Network

The Night Sky Network program supports astronomy clubs across the USA dedicated to astronomy outreach. Visit nightsky.jpl.nasa.org to find local clubs, events, and more!

Springtime Planet Party

By 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!

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Earth from orbit on the March equinox, as viewed by EUMETSAT. Notice how the terminator – the line between day and night - touches both the north and south poles. Additional information can be found at http://bit.ly/earthequinox Image credit: NASA/Robert Simmon

The morning planets on March 31. Image created with assistance from Stellarium.

Pictures from HAC Members

NGC 2022 by David Roemer

Leo I by David Roemer

Comet C2018Y1 Iwamoto meets M38 and NGC 1907 by Bob Kepple

Want Ads

FOR SALE: Celestron CGEM Equatorial Mount. Less than 3 years old, like new. Will hold an 11-inch SCT plus camera. Rated at 40 lbs. Tripod included. $1000.00. Permanent pier also available.

Phone Bob Kepple at 520-366-0490 or see him at meeting.

FOR SALE: 16 inch. F8 OTA, Carbon Truss RC Astro Tech. Includes three extension rings and Laser collimator. Only two years old and hardly used. Bought for $7,000.00. I am asking $5,000.00
Phone: 808-277-9439.

Club Officers and Contacts

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For more information on products and contact information, their websites are:

Farpoint Astronomy http://www.farpointastro.com/

Starizona http://starizona.com/

HAC Mar - Apr Calendar of Events

SU	MO	TU	WE	TH	FR	SA
3	4	5	6  9:04 AM	7	8	9 Astro Night at Huachuca City Library
10 Daylight Savings Time Begins	11	12	13	14  3:27 AM Patterson Public Night 7 PM	15	16
17 	18	19	20  6:43 PM **Vernal Equinox 3:58 PM**	21	22 HAC Meeting Student Union	23 **Astronomy Swap Meet at Patterson. Noon – 4 PM**
24	25	26 Jupiter/Moon	27  9:10 PM	28	29 Saturn/Moon and Pluto	30
31	1 Apr Total solar eclipse during the transit of Venus.	2	3	4	5  1:50 AM	6 **Kartchner Star Party noon to 9 PM**
7	8	9 School Field Trip Patterson 9:30A 1:30P	10	11 Patterson Public Night 7:30 PM	12  12:06 PM Yuri's Day	13 UA Family Day Patterson Open House 10A-2P
14	15	16 Sistsre Cities Students at Patterson 9A	17	18	19  4:12 AM HAC Meeting Library Commons	20 Earth day at Kartchner noon
21 	22	23 School Field trip Patterson 9:30A -1:30PM	24	25 Earth Day at Farmers Market 10A-2P	26  3:18PM Math & Science Patterson 8A-1P	27
28	29	30	1 May	2	3	

All event times MST. Join Haclist to keep up to date with all of the Huachuca Astronomy Club events
Send an email to: haclist-subscribe@yahoogroups.com