

PRESS RELEASE MARCH 2024

ASTRONOMICAL DIARY

PREPARED BY ASTRONOMICAL PUBLICATION AND PLANETARIUM UNIT, SPACE SCIENCE AND ASTRONOMY SECTION.

ASTRONOMICAL EVENTS, MARCH 2024

DATE	EVENT	TIME
08	Women and Girls in Astronomy	
08	Conjunction of Moon and Mars	01:00 p.m
09	Conjunction of Moon and Venus	01:00 a.m
10	Moon at Perigee (Distance = 357,006.153 km)	03:04 p.m
14	Close approach of Moon and Jupiter	06:44 a.m
14	Conjunction of Moon and Jupiter	09:02 a.m
14	γ -Normid Meteor Shower (ZHR = 6)	
20	March Equinox	11:06 a.m
22	Close approach of Venus and Saturn	07:15 a.m
22	Conjunction of Venus and Saturn	10:00 a.m
23	Mercury at Dichotomy	11:52 a.m
23	Moon at Apogee (Distance = 406,255.254 km)	11:45 p.m
24	Mercury at Highest Altitude in Evening Sky	
25	Mercury at Greatest Elongation East	06:34 a.m

PHASES OF THE MOON



RISE AND SET TIMES OF PLANETS

DATE	MERCURY		VENUS		MARS		JUPITER		SATURN	
L	Rise	Set								
Mar 01	06:23 am	06:11 pm	04:51 am	04:21 pm	04:39 am	04:05 pm	09:38 am	10:11 pm	06:15 am	05:58 pm
Mar 11	06:43 am	06:50 pm	04:56 am	04:34 pm	04:28 am	03:59 pm	09:05 am	09:40 pm	05:40 am	05:24 pm
Mar 21	06:55 am	07:19 pm	04:59 am	04:47 pm	04:16 am	03:52 pm	08:32 am	09:09 pm	05:04 am	04:50 pm
Mar 31	06:40 am	07:11 pm	05:01 am	04:58 pm	04:03 am	03:46 pm	08:01 am	08:39 pm	04:29 am	04:15 pm



WOMEN AND GIRLS IN ASTRONOMY An IAU Outreach Global Project

The Women and Girls in Astronomy is an outreach global project organized by the International Astronomical Union (IAU) to create a venue to recognize the role of Women in the advancement of science. It also promotes and encourages inclusivity for all genders on and off the spectrum in studying Astronomy.

[1] All times displayed are in Philippine Standard Time (PhST)

Notes:

"tracking the sky...helping the country" Science Garden Compound, Senator Miriam P. Defensor-Santiago Avenue Brgy. Central, Quezon City, Metro Manila, Philippines

Telephone Number: 8-284-0800 loc 3015, 3016, 3017 Website: https://bagong.pagasa.dost.gov.ph

Stars and Constellations

March is the ideal month to gaze at the beauty of the night sky, with a particular focus on the northern constellations Cancer, Canis Minor, and Lynx. Meanwhile, in the southern hemisphere, prominent constellations include Carina, Pyxis, Vela, and Volans. The prominent March constellations at 09:00 p.m. on 15 March 2024 are positioned directly overhead as shown in Figure 1. [1,2]



Figure 1: The view of the night sky featuring the prominent March constellations at 09:00 p.m. on 15 March 2024 using the Stellarium software

March is the best time to observe well-known deep sky objects in these constellations, including the **Carina** Nebula, the Pencil Nebula, and Praesepe (the Beehive Cluster, M44). [2]

Lynx, known as a "wild cat", is a faint and elusive constellation. Although it lacks prominent stars, its inclusion in the celestial map adds a touch of mystery. The constellation Lynx was given its name because it required Lynx eyesight to locate it, as it was designed to bridge the gap between its two more well-known companion constellations, Ursa Major and Auriga. [2]

Located just below Lynx is the constellation **Cancer**, the second faintest constellation in the zodiac, sometimes referred to as the celestial crab. The constellation contains *Praesepe*, also known as the Beehive Cluster or Messier 44, [Figure 2a] and the open cluster Messier 67, making it a favorite target for stargazers. Below the constellation Cancer and situated just above the celestial equator is **Canis Minor**, home to *Procyon*. It is easier to locate than Lynx and Cancer because Procyon, the eighth brightest star in the sky, signifies one of the vertices of the Winter Triangle and is part of the Winter Hexagon. The constellation represents one of Orion's hounds, the other being Canis Major. [2]



Figure 2: The Northern Constellations



Figure 3: The Southern Constellations

Carina and Vela are the largest southern constellations in March. They once made up the much larger constellation, Argo Navis, which represents the ship of the Argonauts, together with Puppis. However, this constellation later split into three smaller Carina is home to the second-brightest star ones. in the sky, Canopus, and the Great Carina Neb-Likewise, it contains IC 2602, *ula* [Figure 3a]. sometimes known as the Southern Pleiades. Conversely, the constellation Vela stands for the sails and is home to fascinating deep-sky objects like the [Figure 3b]. Pencil Nebulae In contrast, Pyxis and Volans are considerably smaller and fainter Pyxis, than Vela and Carina. which means a mariner's compass, is located next to what used to be Argo Navis, while Volans represents the flying fish. [2]

Planetary Location

Mercury is not readily available at the beginning of the month but will appear in the early morning sky towards the middle until the end of the month lying low on the western horizon just after sunset. Meanwhile, **Jupiter** is readily available and well placed above the western sky and will set at the western horizon after about 3 hours. On the other hand, **Mars** and **Venus** can be seen rising in the eastern sky for most of the month before sunrise. In contrast, **Saturn** will not be readily available in the early part of the month but will join Mars and Venus from the third week till the end of the month. The trio could easily be faded due to the glare of the Sun before sunrise. [1,3]



Figure 4: The best time to view the close pairing of the Waning Crescent Moon and Mars on the eastsoutheastern horizon at 05:30 a.m. joined by Venus before sunrise on 08 March 2024 using Stellarium.



Figure 5: The best time to view the pairing of the Waning Crescent Moon and Venus on the east-southeastern horizon at 05:45 a.m. joined by Mars before sunrise on 09 March 2024 using Stellarium.

On 08 March at 01:00 p.m., the **Waning Crescent Moon** and **Mars** will share the same right ascension, with the Moon passing 3°31' to the south of Mars. The exact instance of the conjunction is not directly visible since the Moon and Mars are still below the horizon. However, the best view of the close pairing can be observed on the eastern horizon before sunrise among the background stars of the constellation Capricornus at 05:30 a.m. [Figure 4]. Similarly, we can witness the conjunction of the **Crescent Moon** and **Venus** on 09 March at 01:00 a.m. They will be separated by a distance of 3°16' from each other. The best time to view this pairing is at 05:45 a.m [Figure 5] as the pair will already be high in the east-southeastern sky in the constellation Capricornus before sunrise. [3,4,5,6]

The Waxing Crescent Moon and Jupiter will make a close approach, passing within 3°19' of one another on 14 March at 06:44 a.m. It will be followed by their conjunction at 09:02 a.m., separated from each other by 3°35'. However, the exact event cannot be observed as the best time to view this pairing is at 06:30 p.m. or immediately after sunset, situated high above on the western horizon [Figure 6]. The optimum viewing will close along with the peak rate of the γ -Normid meteor shower, providing a captivating astronomical event. Likewise, there will be a conjunction between Venus and Saturn on 22 March. They will be separated by a mere 21' from each other. However, the event cannot be observed due to their proximity to the Sun, lying very low on the eastern horizon before sunrise. [3,7,8,9,10,15]



Figure 6: The best time to view the close pairing of the Waxing Crescent Moon and Jupiter on the western horizon at 06:30 p.m. on 14 March 2024 using Stellarium



Figure 7: The best time to view Mercury during the highest altitude in the evening sky on 24 March 2024 at 06:30 p.m. just after sunset using Stellarium.

On 23 March at 11:52 a.m., Mercury will undergo **dichotomy**, a phenomenon that happens when a planet that is inferior to the sun, like Venus, reaches its half phase. In addition, the planet will reach its highest point in the evening sky on 24 March. [12] The best time to view Mercury is at 06:30 p.m. when it is more than 10° above the western horizon [Figure 7]. Mercury will attain its **Greatest Elongation East** on 25 March at 06:34 a.m., when it will be separated from the Sun by 18.7°. The event will occur below the horizon, so the precise timing will not be seen, but it will appear among the background stars of Pisces and will shine brightly at a magnitude of -0.2. [3,11,12,13]

All the conjunctions and near approaches mentioned between the planet and the moon, or planet to planet, will be visible enough to fit within the field of view of a telescope and can also be viewed with the naked eye or using a pair of binoculars.

March Equinox

The March Equinox, also known as the Vernal Equinox in the northern hemisphere, occurs on 20 March at 11:06 a.m.. The March Equinox is the first day of spring for those in the northern hemisphere and the first day of autumn for those in the southern hemisphere. During equinoxes, the Sun directly points over the Earth's equator, thus creating nearly equal day and night. Also, on this day, the Sun exactly rises due east and sets due west. [3,14]

Meteor Shower

The γ -Normid meteor shower is observable from 25 February to 28 March, with an expected peak activity predicted to occur on 14 March. The view of the meteor shower may be observed as soon as the constellation Norma comes into view, with the shower's radiant rising over the horizon around 11:32 p.m. The shower is predicted to peak in activity at approximately 07:00 p.m., but the finest views may occur before or after 04:00 a.m. when the radiant is already at its highest point in the sky [Figure 8]. With up to six (6) visible meteors per hour, the shower will therefore offer its best show just before dawn. The value stated is predicated on the observer being in a clear, dark, moonless sky with the radiant at its highest point in the sky. The shower will remain active until before sunrise. The shower will peak after the new moon, and so moonlight will present minimal interference. [15]



Figure 8: The view of the southern sky during the peak of γ -Normid on 14 March 2024 at 04:00 a.m. when the shower's radiant is represented by the green solid circle.

There is no need for specialized equipment like binoculars or telescopes to observe meteor showers; they may be seen with the unaided eye. Select a dark observing spot far from city lights under clear, moonless skies to maximize the viewing experience.

Calendar of Astronomical Events for March 2024

Table 1 shows a summary of the astronomical events for March 2024. All times displayed are in Philippines Standard Time (PhST).

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Original Signed:

Ms. SHIRLEY J. DAVID Chief, RDTD

27 February 2024

For more information, call or email:

Ms. MA. ROSARIO C. RAMOS

Chief, SSAS-RDTD PAGASA-DOST Quezon City Trunkline: 8284-0800 local 3015, 3016, 3017 Email address: astronomy@pagasa.dost.gov.ph

References

[1] PAGASA Special Publication No. 840; The Philippine Star Atlas 2019/Stellarium Software

[2] C. Guide, "Constellations: A Guide to the Night Sky." https://www.constellation-guide.com/constellations-by-month/march-constellations, Last accessed on 2024-02-26, 2024.

[3] Multi-Interactive Computer Almanac (MICA), Last accessed on 2024-01-26, 2024.

[4] D. Ford, "In-The-Sky.org Guide to the night sky: "Objects in your sky: Planets" https://in-the-sky.org/data/planets.php, Last accessed on 2024-02-26, 2024.

[5] D. Ford, "In-The-Sky.org Guide to the night sky: "Conjunction of the Moon and Mars" https://in-the-sky.org/news.php?id=20240308_20_100, Last accessed on 2024-02-26, 2024.

[6] D. Ford, "In-The-Sky.org Guide to the night sky: "Conjunction of the Moon and Venus" https://in-the-sky.org/news.php?id=20240308_20_101, Last accessed on 2024-02-26, 2024.

[7]D. Ford, "In-The-Sky.org Guide to the night sky: "Close approach of the Moon and Jupiter" https://in-the-sky.org/news. php?id=20240313_15_100, Last accessed on 2024-02-26, 2024.

[8] D. Ford, "In-The-Sky.org Guide to the night sky: "Conjunction of the Moon and Jupiter" https://in-the-sky.org/news.php? id=20240314_20_100, Last accessed on 2024-02-26, 2024.

[9] D. Ford, "In-The-Sky.org Guide to the night sky: "Close approach of Venus and Saturn" https://in-the-sky.org/news.php?id=20240321_15_100, Last accessed on 2024-02-26, 2024.

[10] D. Ford, "In-The-Sky.org Guide to the night sky: "Conjunction of the Venus and Saturn" https://in-the-sky.org/news. php?id=20240322_20_100, Last accessed on 2024-02-26, 2024.

[11] D. Ford, "In-The-Sky.org: Guide to the night sky: "Mercury at dichotomy": https://in-the-sky.org/news.php?id=20240323_ 11_100, Last accessed on 2024-02-26, 2024.

[12] D. Ford, "In-The-Sky.org: Guide to the night sky: "Mercury at the highest altitude in evening sky": https://in-the-sky.org/news.php?id=20240324_11_100, Last accessed on 2024-02-26, 2024.

[13] D. Ford, "In-The-Sky.org: Guide to the night sky: "Mercury at greatest elongation east" https://in-the-sky.org/news.php? id=20240324_11_101, Last accessed on 2024-02-26, 2024.

[14] D. Ford, "In-The-Sky.org Guide to the night sky: "March equinox" https://in-the-sky.org/news.php?id=20240320_07_100, Last accessed on 2024-02-26, 2024.

[15] D. Ford, "In-The-Sky.org Guide to the night sky: "γ-Normid meteor shower 2024." https://in-the-sky.org/news.php?id= 20240314_10_100, Last accessed on 2024-02-26, 2024.



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Approved by:

Ms. SHIRIEY J. DAVID Chief, RDTD 27 February 2024