

PRESS RELEASE MAY 2022






ASTRONOMICAL DIARY

PREPARED BY ASTRONOMICAL PUBLICATION UNIT, SPACE SCIENCE AND ASTRONOMY SECTION

ASTRONOMICAL EVENTS, MAY 2022

DATE	EVENT	TIME
1	Close Approach of Venus and Jupiter	04:56 AM
5	Moon at Apogee (Distance = 405,225.556 km)	08:46 PM
6	η - Aquarids	before sunrise
6	η - Lyrids	04:00 AM
7-8		
17	Moon at Perigee (Distance = 360,390.545 km)	11:27 PM
22	Close Approach of Saturn and Moon	03:20 PM
25	Close Approach of Mars, Jupiter, and Moon	02:00 AM
27	Close Approach of Venus and Moon	11:03 AM
29	Close Approach of Mars and Jupiter	06:26 PM

PHASES OF THE MOON

	New Moon May 01 04:28 AM
	First Quarter May 09 08:21 AM
	Full Moon May 16 12:14 PM
	Last Quarter May 23 02:43 AM
	New Moon May 30 07:30 PM

RISE AND SET TIMES OF PLANETS

DATE	MERCURY		VENUS		MARS		JUPITER		SATURN	
	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set
May 01	06:45 AM	07:41 PM	03:15 AM	03:16 PM	02:23 AM	02:10 PM	03:15 AM	03:14 PM	01:22 AM	12:55 PM
May 11	06:24 AM	07:17 PM	03:14 AM	03:24 PM	02:09 AM	02:01 PM	02:42 AM	02:43 PM	12:45 AM	12:17 PM
May 21	05:36 AM	06:19 PM	03:14 AM	03:32 PM	01:54 AM	01:53 PM	02:09 AM	02:12 PM	12:06 AM	11:39 AM
May 31	04:43 AM	05:20 PM	03:14 AM	03:41 PM	01:39 AM	01:44 PM	01:35 AM	01:39 PM	11:24 PM	11:01 AM



MINERAL MOON ASTRONOMY PICTURE OF THE MONTH

This enhanced image of the Moon contains a lot of color information which corresponds to real differences in the chemical composition of the lunar surface.

The blue tones reveal areas that are titanium-rich basalts, while the yellow-brown color indicates iron-rich lavas.

Photo details: Canon EOS 6D MII, Prime Focus in 120mm refracting telescope. ISO-400, SS 1/1000sec

Image Credit: Mendoza, L.P.

Notes:

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

"tracking the sky...helping the country"

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Stars and Constellations

The best month to observe the northern constellations of **Canes Venatici** and **Coma Berenices** and the southern constellations of **Centaurus**, **Virgo**, **Corvus**, **Crux**, and **Musca** is during May. These prominent constellations are directly overhead at around 9:00 PM, as shown in Figure 1.

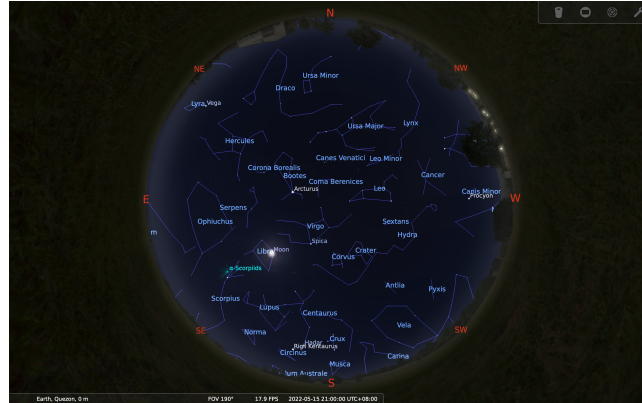


Figure 1: The view of the night sky featuring the prominent May constellations at 9:00 PM on 15 May 2022 using the Stellarium software

The constellations of **Canes Venatici** and **Coma Berenices** can be found above the handle of the famous asterism of the **Big Dipper** (Figure 3). Both constellations are rich in deep-sky objects and also host several prominent galaxies. The **Whirlpool Galaxy (M51)**, **Sunflower Galaxy (M63)**, **Cat's Eye Galaxy (M94)**, **Whale Galaxy (NGC 4631)**, **Hockey Stick Galaxies (NGC 4656 and NGC 4657)**, **Cocoon Galaxy (NGC 4490)**, the spiral galaxy **M106**, and the bright, large globular cluster **M3**, are only some deep-sky objects that are observable in **Canes Venatici** (Figure 2).

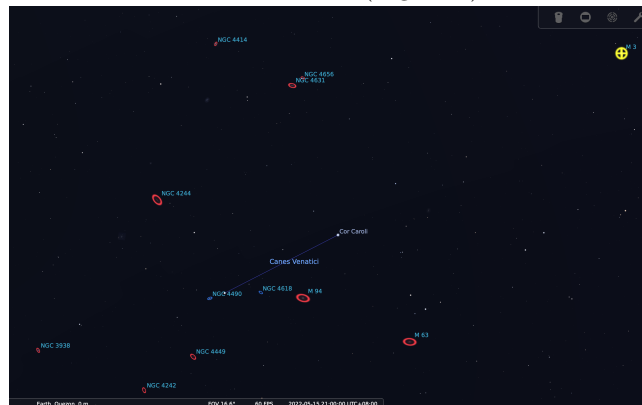


Figure 2: The position of the deep-sky objects in Canes Venatici at 9:00 PM on 15 May 2022 using the Stellarium software

Cor Caroli, a binary star system and the brightest star in **Canes Venatici**, serves as one of the vertices of a prominent spring asterism called **Great Diamond** or **Diamond of Virgo**. The other vertices of the asterism include **Arcturus**, **Spica**, and **Denebola** from the constellations of **Bootes**, **Virgo**, and **Leo**, respectively [1]. Figure 3 shows the view of the **Great Diamond** if an observer is looking north on the night of 15 May at 9:00 PM.



Figure 3: The position of the Great Diamond asterism in the sky at 9:00 PM on 15 May 2022 using the Stellarium software

Coma Berenices also hosts numerous deep-sky objects, including the **Black Eye Galaxy** and the globular cluster **M53**. **Coma Berenices** is also the home of the **Coma Cluster of galaxies**, a cluster of at least 10,000 galaxies, mostly elliptical galaxies, and also the northern part of the **Virgo Cluster** including **M85**, **M88**, **M91**, **M98**, **M99** (**Coma Pinwheel**), and **M100**, the **grand design spiral galaxy**. Figure 4 shows the location in the sky of some deep-sky objects in **Coma Berenices**.

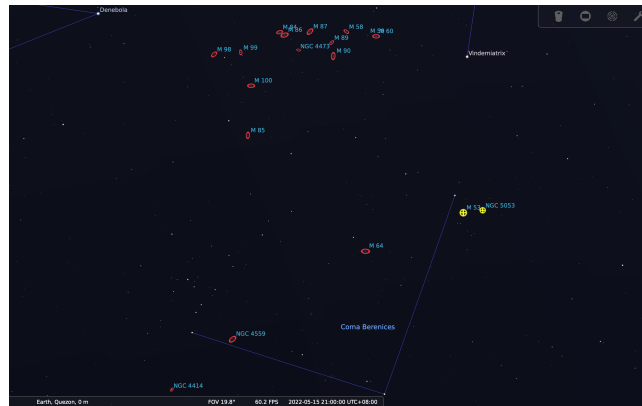


Figure 4: The position of the deep-sky objects in Coma Berenices at 9:00 PM on 15 May 2022 using the Stellarium software

Located south of **Coma Berenices** is **Virgo**, the second-largest constellation, next to **Hydra**. **Virgo** also contains numerous Messier objects, including the famous **Sombrero Galaxy (M104)** and the galaxies belonging to the **Virgo Cluster**, namely, **M49**, the brightest member of the cluster, **M58**, **M59**, **M60**, **M61**, **M84**, **M86**, **M87** (also known as **Virgo A**), the largest and one of the most massive galaxies in the cluster, **M89**, and **M90**. Figure 5 shows the position of the galaxies (magnitude < 10) belonging to the **Virgo Cluster**.

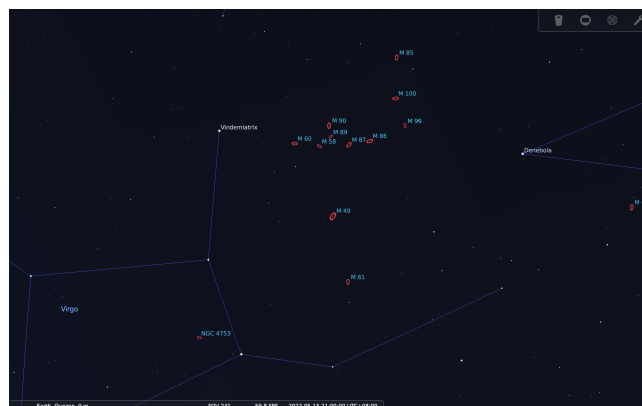


Figure 5: The position of the galaxies belonging to the Virgo Cluster in the constellation Virgo at 9:00 PM on 15 May 2022 using the Stellarium software

Centaurus and **Crux** are the best known southern constellation. **Centaurus** is the ninth-largest constellation in the sky containing 10 stars brighter than magnitude 3.00. **Centaurus** is also the home of **Omega Centauri**, the brightest globular cluster. Meanwhile, **Crux**, also known as the **Southern Cross**, is the smallest constellation in the sky and is used for navigation towards the true south [2].

Planetary Location

At the beginning of the month, **Mercury** is an evening planet lying low near the horizon close to the open cluster, **Pleiades**. However, **Mercury** continues to sink towards the horizon in the following days. **Venus**, **Mars**, **Jupiter**, and **Saturn** are observable as morning planets for the entire month [9].

A close pairing of the planets **Venus** and **Jupiter** will be on 1 May at 04:56 AM. The pair will be located in **Pisces** and will be merely 13.8" from each other. The close pairing is observable from 3:30 AM until before sunrise (Figure 6) [3, 4]. Meanwhile, **Venus** and the **waning crescent Moon**, both in **Pisces**, will be 10.9" away from each other on 27 May. The exact moment of the close approach will occur at 11:03 AM, but the pair may still be observed early morning until before sunrise. Figure 7 shows the view **Venus-Moon pairing** on the eastern horizon on 27 May. The angular separation of these pairings is close enough to fit in the field of view

of a telescope. However, the pairing is also visible to the naked eye or through the aid of a pair of binoculars [5, 6].



Figure 6: The view of the eastern sky on 1 May 2022 at 4:00 AM showing the close approach of Venus and Jupiter using the Stellarium application



Figure 7: The view of the eastern sky on 27 May 2022 at 4:00 AM showing the close approach of Venus and Moon using the Stellarium application

The planets **Jupiter** and **Mars** will be merely 34.9" from each other on 29 May at 6:26 PM. The pair will not be observed at the exact moment of the close approach since it is still below the horizon. However, the pairing is observable as soon as it rises in the east at around 2:00 AM until before sunrise. Figure 8 presents the view of the eastern sky during the close approach of **Jupiter** and **Mars** on 29 May 2022 at 4:00 AM. The planetary pairing has a little too wide angular separation, which cannot fit into the field of view of a telescope but will still be visible to the naked eye or through a pair of binoculars [7, 8]. A few days prior, the **waning crescent Moon** can be observed close to the planets **Jupiter** and **Mars** on 25 May [9]. The view of the trio, located in **Pisces**, is observable in the east from around 2:00 AM until before sunrise. Figure 9 shows the eastern horizon at 4:00 PM on 25 May during the Jupiter-Mars-Moon pairing.



Figure 8: The view of the eastern sky on 29 May 2022 at 4:00 AM showing the close approach of Jupiter and Mars pairing using the Stellarium application

Saturn and the **waning gibbous Moon** will closely approach each other at about $4^{\circ}11'$ on 22 May, 3:20 PM. The exact moment of the pair is not directly observable since it will occur in the afternoon, and both **Saturn**



Figure 9: The view of the eastern sky on 25 May 2022 at 4:00 AM showing the close approach of Jupiter, Mars, and Moon using the Stellarium application

and the **Moon** are still below the horizon. However, the close pairing is observable on the same day but from around 1:00 AM until before sunrise. Figure 10 shows the view of the **Saturn-waning gibbous Moon** pairing on 22 May at 4:00 PM [10, 11].



Figure 10: The view of the southeastern sky on 22 May 2022 at 4:00 AM showing the close approach of Saturn and Moon using the Stellarium application

Meteor Showers

The η -**Aquariids** is one of the meteor showers produced by **Comet Halley's debris**. This major meteor shower is active from 19 April to 28 May, with a peak of activity occurring on 6 May, and may produce about 40 meteors per hour. The radiant of the meteor shower, **Aquarius**, will rise on the eastern horizon at around 1:31 AM. η -**Aquariids** is best observed shortly before dawn when their radiant is at its highest point in the sky Figure 11. The presence of a **waxing crescent Moon** in **Gemini** at the shower's peak will cause no significant interference with the meteor shower observation [12, 13].

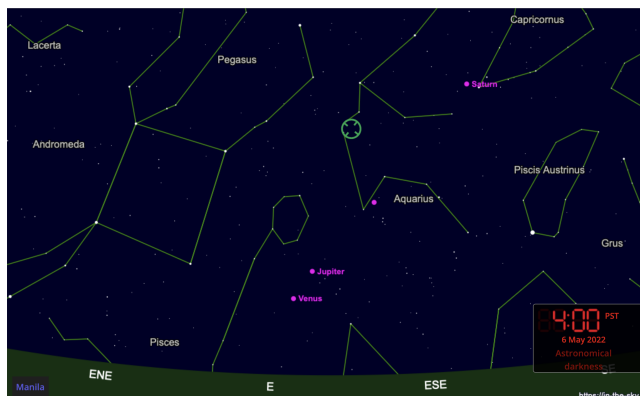


Figure 11: The view of the eastern sky during the peak of η -**Aquariids** on 6 May 2022 at 4:00 AM when the shower's radiant represented by the green solid circle is highest in the sky

η -**Lyrids** is another meteor shower observable in May. η -**Lyrids** is active from 3-14 May, with peak activity

on 8 May producing up to 3 meteors per hour. The parent body responsible for η -Lyrids is a comet named **C/1983 H1 (IRAS-Araki-Alcock)**. The radiant of the meteor shower, **Lyra**, will rise over the eastern horizon at around 9:00 PM. η -Lyrids is observable until before sunrise, with the best shower display at around 4:00 AM when the radiant is at its highest point in the sky (Figure 12). The **waxing crescent Moon** in **Cancer** will not cause any interference to the observation [12, 14].

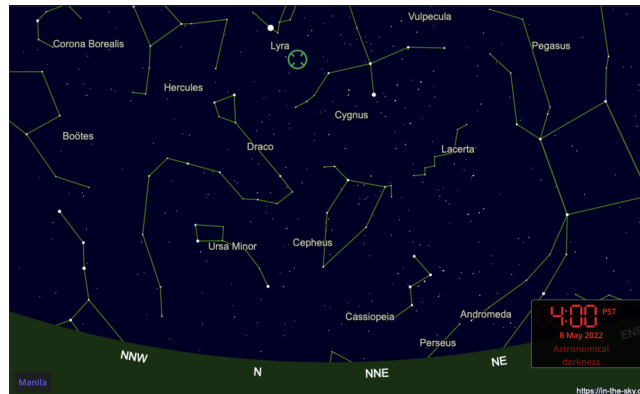


Figure 12: The view of the eastern sky during the peak of η -Lyrids on 8 May 2022 at 4:00 AM when the shower's radiant represented by the green solid circle is highest in the sky

The value of the expected number of meteors observable per hour assumes that the observer is in a clear, dark, moonless sky condition, and the radiant is highest in the sky. Meteor showers are observable through the naked eyes, and no special equipment such as telescopes or binoculars is needed. Maximize the viewing experience by choosing a dark observation site away from the city lights under clear and moonless sky conditions.

Calendar of Astronomical Events for May 2022

Table 1 shows summary of the astronomical events for the month of May 2022. All times displayed are in Philippines Standard Time (PhST).

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Date	Event	Time
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12 April 2022

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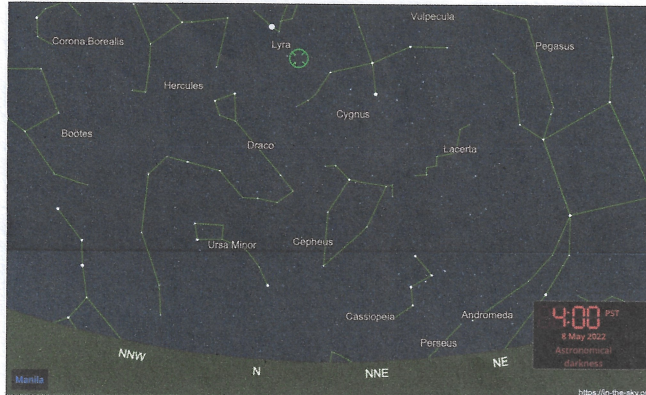


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