

PRESS RELEASE APRIL 2023





ASTRONOMICAL DIARY

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

ASTRONOMICAL EVENTS, APRIL 2023

DATE	EVENT	TIME
1-30	Global Astronomy Month	---
12	Mercury at Greatest Elongation, East	---
16	Moon at Perigee (Distance = 368,015.744 km)	10:24 a.m.
20	Partial Solar Eclipse	---
23	Close approach of Moon and Venus	---
24	Lyrids	04:00 a.m.
24	π -Puppids	08:00 p.m.
26	Close approach of Moon and Mars	---
28	Moon at Apogee (Distance = 404,227.349 km)	02:43 p.m.

PHASES OF THE MOON

	Full Moon Apr 06 12:34 PM
	Last Quarter Apr 13 05:11 PM
	New Moon Apr 20 12:12 PM
	First Quarter Apr 28 05:20 AM

RISE AND SET TIMES OF PLANETS

DATE	MERCURY		VENUS		MARS		JUPITER		SATURN	
	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set
Apr 01	06:38 AM	07:07 PM	07:59 AM	08:44 PM	11:03 AM	*12:06 AM	06:23 AM	06:40 PM	03:51 AM	03:29 PM
Apr 11	06:47 AM	07:29 PM	08:03 AM	08:56 PM	10:46 AM	11:47 PM	05:52 AM	06:10 PM	03:15 AM	02:54 PM
Apr 21	06:27 AM	07:12 PM	08:09 AM	09:09 PM	10:31 AM	11:30 PM	05:20 AM	05:41 PM	02:39 AM	02:19 PM
Apr 30	05:44 AM	06:22 PM	08:17 AM	09:20 PM	10:17 AM	11:14 PM	04:52 AM	05:15 PM	02:06 AM	01:46 PM



Credit: Astronomers Without Borders

GLOBAL ASTRONOMY MONTH

ASTRONOMY EVENT OF THE MONTH

Global Astronomy Month (GAM) is the world's largest annual event occurring for the entire month of April to celebrate astronomy. GAM is the flagship event by Astronomers Without Borders to encourage everyone to go outside and enjoy the beauty of the sky.

This year, PAGASA's highlights of the GAM celebration are the Partial Solar Eclipse observation on 20 April, and the free Planetarium Show, free Telescoping and Stargazing session every Wednesday of April.

For further updates and announcements on PAGASA's GAM celebration, stay tuned to our official Facebook page (facebook.com/PAGASA.DOST.GOV.PH/)

Notes:

[1] * following day

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

"tracking the sky...helping the country"

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 Website: <https://bagong.pagasa.dost.gov.ph/>

Stars and Constellations

The constellations Antlia, Chamaeleon, Crater, Hydra, Leo, Leo Minor, Sextans, and Ursa Major are the ones that are easiest to see in April. The Ursa Major, Leo, and Leo Minor are located in the north, and the Sextans, Hydra, Crater, Antlia, and Chamaeleon lie south of the celestial equator (Figure 1) [1].

The month of April is also the greatest time of the year to view some well-known galaxies, nebulae, and star clusters that includes the Southern Pinwheel Galaxy (NGC 5236), the Cigar Galaxy (M82), the Pinwheel Galaxy (M101), the Owl Nebula (M97), the Leo Triplet of galaxies (M65, M66, and NGC 3628), and the Pinwheel Nebula [2].

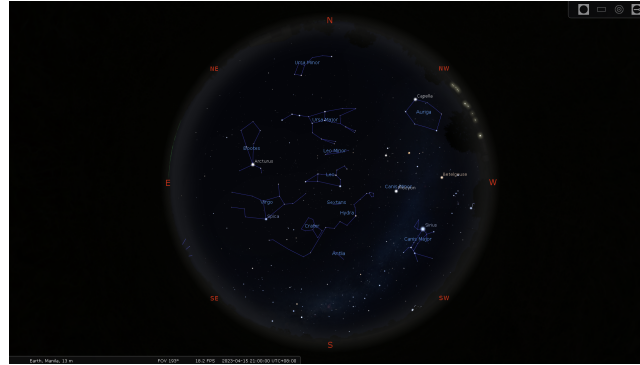


Figure 1: The view of the night sky featuring the prominent April constellations on 15 April at 09:00 p.m. using the Stellarium software

Ursa Major is the largest northern constellation and the third largest among the 88 constellations, next to Hydra and Virgo. Its name means “the great bear,” or “the larger bear”. Ursa Major is also the home of the famous Big Dipper asterism. Merak and Dubhe, bright stars of Ursa Major, are used as pointer stars to find the north star, Polaris [2].

Leo is easily identified because of the six bright stars that make up the lion’s head and are easily recognized because they combine to form the Sickle, a conspicuous spring asterism. The star that denotes the lion’s heart, Regulus, is at the end of the sickle, which resembles a backward question mark [2].

Hydra is the largest and longest of all the modern 88 constellations. The head of the hydra is south of the constellation Cancer, and the tail is between Centaurus and Libra. Hydra contains some fascinating deep sky objects, such as the Southern Pinwheel Galaxy (M83), a brilliant face-on spiral galaxy; the globular cluster Messier 68; and the open cluster Messier 48 [2].

Planetary Location

At the beginning and up to the middle of April, **Mercury** is visible as a nighttime planet that appears low on the west-northwestern sky after sunset (Figure 2). Mercury is at dichotomy on 09 April at 11:25 a.m.. A phenomenon that happens when an inferior planet like Mercury reaches its half phase [3]. Likewise, Mercury will be at its highest position in the evening sky on 11 April, and on 12 April at 02:51 a.m., Mercury will be at its farthest distance from the Sun, called the greatest elongation east. However, the exact time of the event is not visible since it happened below the horizon. [4]

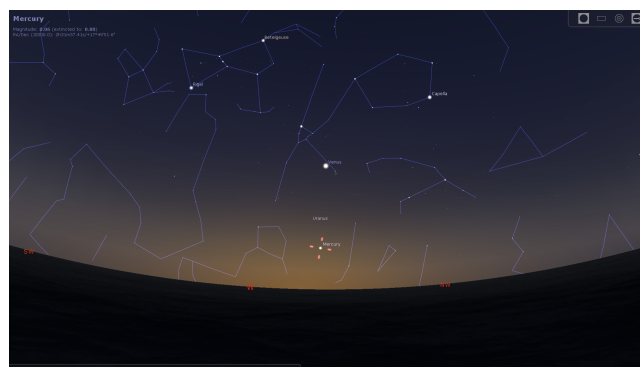


Figure 2: The view of the west-northwestern sky on 12 April 2023 at 06:45 p.m. showing the position of Mercury 16 hours after greatest elongation east and after sunset, using the Stellarium software

Venus is emerging to appear in the evening sky as it gets closer to its greatest elongation east. [5] The Moon and Venus will be in conjunction on 23 April at 09:03 p.m.. At the same time, the two objects will also make a close approach, with the Moon passing $1^{\circ}18'$ to Venus' north. They are both in the Taurus constellation. However, because the two objects were already positioned on the horizon, the precise moment of the occurrence is not observable. Yet, it can be seen two hours in advance [6, 7].

Mars, is also an evening planet that can be observed in the west-northwest of the sky after sunset. On 26 April, the Moon and Mars, will share the same right ascension with the Moon and make a close approach on the same day, with the Moon passing $3^{\circ}13'$ to the north of Mars. They are both located in the constellation Gemini. However, the exact time of the event is not observable as it occurs during the daytime (Figure 3) [8, 9].

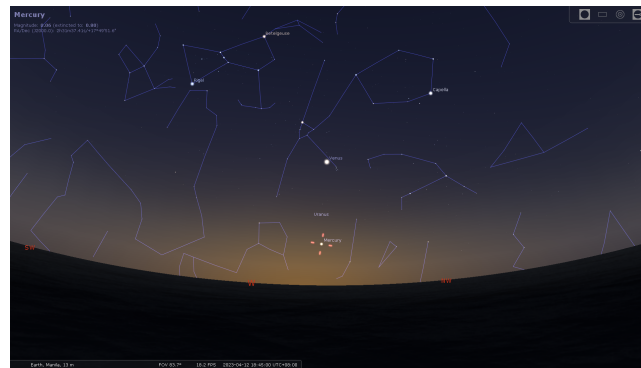


Figure 3: The view of the west-northwestern sky on 26 April 2023 at 09:00.m. showing the close approach of Moon and Mercury, using the Stellarium software

Saturn is easily visible in the early morning and will remain visible until the end of the month. The Moon and Saturn will be in conjunction on 16 April at 11:49 a.m., but it will not be observed as it occurs in the daytime. On the same day, the pair will also make their closest approach, with the Moon passing $3^{\circ}29'$ to the south of Saturn. The pair will be visible from Manila starting at around 02:55 a.m. till they disappear from view just before daybreak. At the time of the event, they are both located in the constellation Aquarius [10, 11]. Meanwhile, Jupiter is not readily available and is difficult to observe due to its proximity to the Sun [12].

Meteor Shower

The **Lyrid Meteor Shower** will be observed from 16-25 April, with an expected peak of activity on 23 April, when Hercules, the radiant of the meteor shower, rises at about 09:14 p.m. every night and is visible until about 05:13 a.m., the next day. The radiant is highest in the sky at around 04:00 a.m., as shown in the finder chart in Figure 4. Thus, the shower will produce the best display shortly before dawn, with up to 16 meteors per hour. The value mentioned assumes that the observer is in a clear, dark, moonless sky condition and that the radiant is highest in the sky. The presence of the Waning Gibbous Moon in Sagittarius presents a significant interference with the meteor shower observation throughout the night [13].

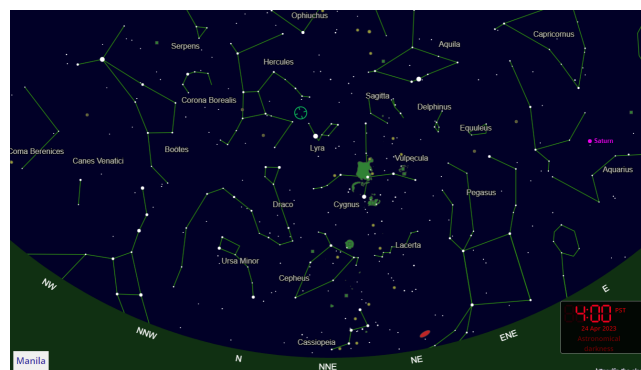


Figure 4: The view of the northern sky during the peak of Lyrids on 24 April 2023 at 04:00 a.m. when the shower's radiant is represented by the green solid circle.

Another meteor shower that can be observed in April is the π -**Puppids**, which is active from 15-28 April, with an expected peak of activity on 24 April. The view of the meteor shower can be observed after sunset until the

shower's radiant sinks towards the horizon at around 10:10 p.m. Figure 9 exhibits the position of the shower's radiant on 23 April at 08:00 p.m. The presence of the Waxing Crescent Moon in Taurus during the peak activity will produce an insignificant effect on the meteor shower observation (Figure 5) [14].

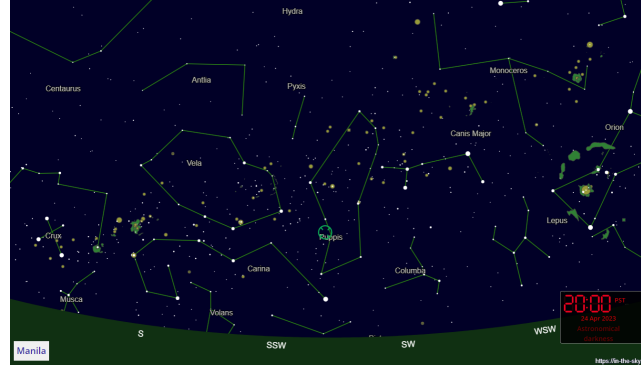


Figure 5: The view of the southern sky during the peak of π -Puppids on 24 April 2023 at 08:00 p.m. when the shower's radiant is represented by the green solid circle.

Meteor showers are observable through the naked eye, 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.

Hybrid Solar Eclipse

The Moon will move in front of the Sun on April 20, 2023, causing a **Hybrid Solar Eclipse** that will be visible from western Australia, East Timor, And Eastern Indonesia. A hybrid solar eclipse combines an annular and a total solar eclipse. At the eclipse's path, it can produce a variety of phenomena for observers at various locations. At the beginning of the event, the observer may witness an annular solar eclipse or a brief "ring of fire", then observe a totality during the hybrid solar Eclipse's middle phase and switches it back to an annular solar eclipse before the eclipse is over [15].

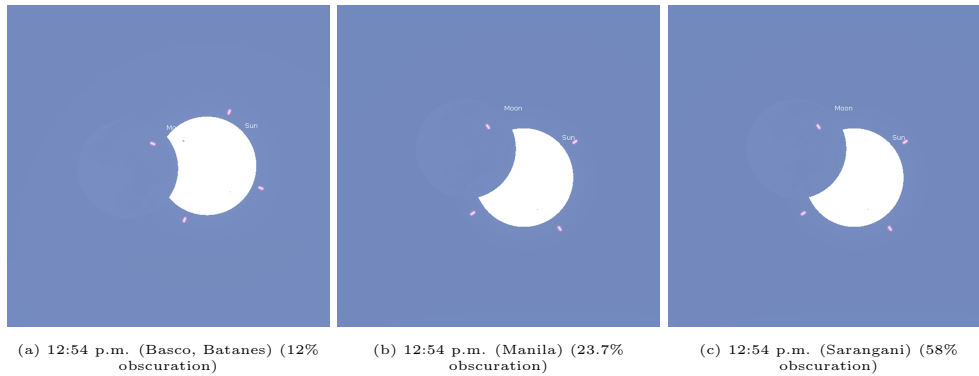


Figure 6

The hybrid solar eclipse cannot be observed in Manila. However, it can be observed as a **partial solar eclipse**, with the maximum eclipse of the Sun at 23.7% obscuration. The Partial Solar Eclipse begins at 11:44 a.m., with the maximum eclipse occurring at 12:55 p.m. and coming to an end at 02:04 p.m. Elsewhere in the Philippines, the partial solar eclipse can be observed at a minimum obscuration of 12% to the north (Basco, Batanes) and a maximum obscuration of 58% to the south (Municipality of Sarangani) (Figure 6) [15].

Calendar of Astronomical Events for April 2023

Table 1 shows a summary of the astronomical events for April 2023. All times displayed are in Philippines Standard Time (PhST).

Table 1: The summary of astronomical events for April 2023

Date	Event	Time
1-30	Global Astronomy Month	
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28	Moon at Apogee (Distance = 404,227.349 km)	02:43 p.m.

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28 March 2023

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References

- [1] PAGASA Special Publication No. 840: The Philippine Star Atlas, 2019
- [2] C. Guide, "Constellations: A Guide to the Night Sky, April Constellation" <https://www.constellation-guide.com/constellations-by-month/april-constellations/>, Last accessed 2023-03-24, 2023
- [3] D. Ford, "In-The-Sky.org Guide to the night sky: Mercury at dichotomy" https://in-the-sky.org/news.php?id=20230409_11_100, Last accessed 2023-03-24, 2023
- [4] D. Ford, "In-The-Sky.org Guide to the night sky: Mercury at greatest elongation east" https://in-the-sky.org/news.php?id=20230411_11_101, Last accessed 2023-03-24, 2023
- [5] D. Ford, "In-The-Sky.org Guide to the night sky: Venus (Planet)" <https://in-the-sky.org//data/object.php?id=P2>, Last accessed 2023-03-24, 2023
- [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=20230423_20_100, Last accessed 2023-03-24, 2023
- [7] D. Ford, "In-The-Sky.org Guide to the night sky: Close approach of the Moon and Venus" https://in-the-sky.org/news.php?id=20230423_15_100, Last accessed 2023-03-24, 2023
- [8] 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=20230426_20_100, Last accessed 2023-03-24, 2023
- [9] D. Ford, "In-The-Sky.org Guide to the night sky: Close approach of the Moon and Mars" https://in-the-sky.org/news.php?id=20230426_15_100, Last accessed 2023-03-24, 2023
- [10] D. Ford, "In-The-Sky.org Guide to the night sky: Conjunction of the Moon and Saturn" https://in-the-sky.org/news.php?id=20230416_20_100, Last accessed 2023-03-24, 2023
- [11] D. Ford, "In-The-Sky.org Guide to the night sky: Close approach of the Moon and Saturn" https://in-the-sky.org/news.php?id=20230416_15_100, Last accessed 2023-03-24, 2023
- [12] D. Ford, "In-The-Sky.org Guide to the night sky: Jupiter (Planet)" <https://in-the-sky.org//data/object.php?id=P5>, Last accessed 2023-03-24, 2023
- [13] D. Ford, "In-The-Sky.org Guide to the night sky: Lyrid meteor shower 2023" https://in-the-sky.org/news.php?id=20230423_10_100, Last accessed 2023-03-24, 2023
- [14] D. Ford, "In-The-Sky.org Guide to the night sky: π -Puppids meteor shower 2023" https://in-the-sky.org/news.php?id=20230424_10_100, Last accessed 2023-03-24, 2023
- [15] J. Carter, "Hybrid solar eclipse: Everything you need to know about the rare and strange phenomenon" <https://www.space.com/hybrid-solar-eclipse-guide>, Last accessed 2023-03-24, 2023