DOST-PAGASA
PHILIPPINE ATMOSPHERIC, GEOPHYSICAL AND ASTRONOMICAL SERVICES ADMINISTRATION
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PRESS RELEASE SEPTEMBER 2026

ASTRONOMICAL DIARY

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

ASTRONOMICAL EVENTS, SEPTEMBER 2026

DATE	EVENT	TIME
07	Conjunction of the Moon and Mars	02:26 a.m.
07	Close Approach of the Moon and Mars	04:28 a.m.
07	Moon at Perigee (Distance = 368,303.923 km)	04:43 a.m.
09	Conjunction of the Moon and Jupiter	02:11 a.m.
09	Close Approach of the Moon and Jupiter	02:44 a.m.
09	September ε-Perseid meteor shower (ZHR = 5)	---
14	Conjunction of the Moon and Venus	07:11 p.m.
14	Close approach of the Moon and Venus	07:34 p.m.
19	Moon at Apogee (Distance = 404,148.988 km)	11:00 a.m.
23	September equinox	08:05 a.m.
23	Venus at greatest brightness	---
27	Close approach of the Moon and Saturn	02:35 p.m.
27	Conjunction of the Moon and Saturn	08:01 p.m.

PHASES OF THE MOON

Last Quarter
Sep 04 03:51 p.m.

New Moon
Sep 11 11:27 a.m.

First Quarter
Sep 19 04:44 a.m.

Full Moon
Sep 27 12:49 a.m.

RISE AND SET TIMES OF PLANETS

DATE	MERCURY		VENUS		MARS		JUPITER		SATURN	
	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set
Sep 01	06:03 am	06:26 pm	08:46 am	08:25 pm	01:46 am	02:42 pm	04:00 am	04:41 pm	08:02 pm	08:15 am*
Sep 11	06:36 am	06:42 pm	08:37 am	08:07 pm	01:34 am	02:29 pm	03:30 am	04:09 pm	07:21 pm	07:33 am*
Sep 21	07:01 am	06:52 pm	08:20 am	07:43 pm	01:22 am	02:14 pm	02:59 am	03:37 pm	06:39 pm	06:51 am*
Sep 30	07:19 am	06:57 pm	07:55 am	07:13 pm	01:10 am	02:00 pm	02:31 am	03:07 pm	06:02 pm	06:13 am*

Image Credit: Francesco Antonucci

LOOKING INTO THE FUTURE: THE DUMBBELL NEBULA (M27)

Astronomy Picture of the Month

The **Dumbbell Nebula**, also known as **Messier 27 (M27)**, is a planetary nebula formed when an aging star shed its outer layers into space, creating a glowing cloud of gas and dust. M27 was discovered by French astronomer Charles Messier in 1764 while he was creating a list of diffuse objects that could be mistaken for comets. It was the first planetary nebula ever discovered and became the 27th object on his list. Located in the constellation Vulpecula (the Fox), M27 is more than 1,200 light-years away and has an apparent magnitude of about 7.5. It is one of the brightest planetary nebulae in the sky and can be observed with a small telescope, particularly during September. The image shows enhanced colors, with red representing hydrogen and blue representing oxygen. Scientists believe that our Sun will undergo a similar process in roughly 5–7 billion years. After exhausting the hydrogen fuel in its core and passing through its later stages of stellar evolution, the Sun will shed its outer layers, creating a planetary nebula. Its remaining core will become a very hot white dwarf, whose radiation will illuminate the surrounding gas.

Source: https://science.nasa.gov/asset/webb/rho-ophiuchi-nircam-image/; https://science.nasa.gov/asset/hubble/close-up-of-m27-the-dumbbell-nebula/; https://science.nasa.gov/mission/hubble/science/explore-the-night-sky/hubble-messier-catalog/messier-27/

Notes:
[1] All times displayed are in Philippine Standard Time (PhST)
*[2] *following day*

Stars and Constellations

September brings an interesting view of the night sky as different constellations become visible throughout the evening. Looking toward the north, the constellations **Cygnus, Vulpecula, Delphinus**, and **Equuleus** take prominence, while **Capricornus, Microscopium**, and **Indus** shine across the southern sky. These constellations will be positioned directly overhead at 09:00 p.m. on 15 September 2026, as depicted in Figure 1. [1]

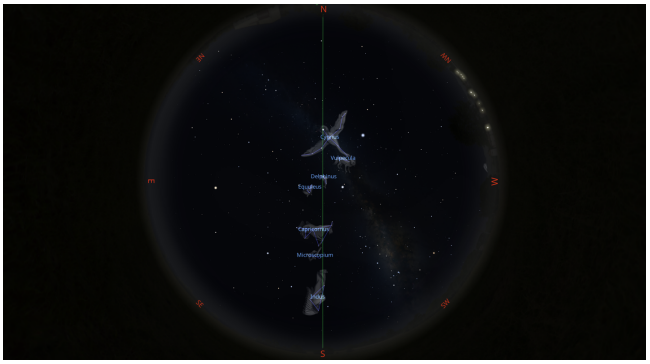

Figure 1: The view of the night sky featuring the prominent September constellations at 09:00 p.m. on 15 September 2026 using the Stellarium software.

Cygnus, also known as the Swan, is one of the most recognizable constellations in the northern sky. It is easily identified by the prominent cross-shaped asterism known as the Northern Cross. Its brightest star, Deneb (Alpha Cygni), has an apparent magnitude of 1.25, making it the 19th brightest star in the night sky. Deneb marks the tail of the celestial swan and the top of the Northern Cross. It is also one of the three stars that form the Summer Triangle, along with Vega in Lyra and Altair in Aquila. Beyond its distinctive pattern of stars, Cygnus lies along the Milky Way and is home to numerous deep-sky objects. These include the North America Nebula (NGC 7000), an emission nebula named for its resemblance to the continent; the Fireworks Galaxy (NGC 6946) [Figure 2a], a spiral galaxy near the border with Cepheus; and the Blinking Planetary Nebula (NGC 6826) [Figure 2b], known for its distinctive, eye-like appearance. [2,3]

With an area of approximately 72 square degrees, **Equuleus**, or the "little horse," is the second smallest of the 88 constellations. Its brightest star, Kitalpha (Alpha Equulei), has an apparent magnitude of 3.9 and is a binary system located about 190 light-years away. Despite its modest size and relatively faint stars, Equuleus remains a distinct feature of the northern sky. It contains few notable deep-sky objects, including NGC 7015, NGC 7040, and NGC 7046 [Figure 2c], although their faintness makes them difficult to observe. Equuleus can be located by tracing an imaginary line from Altair in Aquila to Enif in Pegasus, with the small constellation lying between them. [2,4,5]

Capricornus, associated with the mythological half-goat, half-fish creature known as the Sea-Goat, is one of the 12 constellations of the zodiac. Although relatively large, its stars are generally faint, making its distinctive triangular shape somewhat challenging to identify. The brightest star in the constellation, Deneb Algedi (Delta Capricorni), is a multiple-star system that marks the tail of the celestial Sea-Goat. It has a mean visual magnitude of 2.81, while the other stars in the constellation are fainter than magnitude 3.00. Capricornus may not have many bright stars, but it contains some notable deep-sky objects. One of the most famous is Messier 30 (M30), a dense globular cluster about 27,000 light-years away and around 93 light-years across. Another notable object is HCG 87, a compact group of galaxies about 400 million light-years away. It consists of two spiral galaxies and an elliptical galaxy, best observed with a large telescope under dark skies. Capricornus is also home to the grand-design spiral galaxy NGC 6907 [Figure 3a]. To locate Capricornus, draw a line from the stars Vega to Altair in the Summer Triangle asterism and extend it downward. [2,6,7]

Indus is a small and faint constellation in the southern sky. Although it lacks bright stars, it contains several noteworthy ones. The brightest, Alpha Indi, also known as "The Persian," is an orange giant about 101 light-years away, with an apparent magnitude of 3.11. It is an evolved star that has exhausted its core hydrogen and expanded to about 12 times the Sun's diameter. The second-brightest, Beta Indi, is a yellow-white giant located about 600 light-years away and is nearly 60 times more luminous than the Sun. Indus is not known for many prominent deep-sky objects, but it contains several interesting galaxies. Among the brightest are the spiral galaxy NGC 7090 [Figure 3b] and the lenticular galaxy NGC 7049 [Figure 3c], which is notable for its prominent dust ring and large halo of globular clusters. Another interesting object is NGC 7083, a spiral galaxy situated about 142 million light-years distant. To locate Indus, draw an imaginary line from Peacock in Pavo to Alnair in Grus. Indus lies between the two stars. [2,8,9]

Figure 2: The Northern Constellations

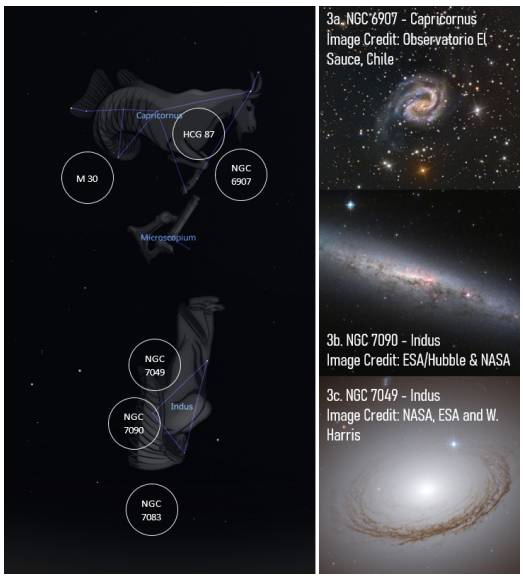

Figure 3: The Southern Constellations

Planetary Location

Saturn will be visible rising in the eastern sky during the early evenings of September and will remain observable throughout the night until it is lost in the glare of the Sun the following morning. **Mars** and **Jupiter** will also appear in the early morning sky, rising in the east before gradually becoming obscured as the sky brightens toward sunrise. **Venus** will shine brightly in the evening sky after sunset as dusk fades into darkness, remaining visible until it sets below the western horizon. It will reach its greatest brightness during its evening apparition on 23 September, shining at a magnitude of -4.6. Meanwhile, **Mercury** will be difficult to observe throughout the month due to its close proximity to the Sun. [1,10]

On 07 September at 02:26 a.m., the **Moon** and **Mars** will share the same right ascension, reaching conjunction with an angular separation of 3°00'. At 04:28 a.m., their separation will decrease to 2°57', marking their close approach. Both objects will lie within Gemini, with the Moon at magnitude -11.1 and Mars at magnitude 1.2. The exact timing of these events will be visible in the eastern sky as shown in Figure 4. [11,12,13]

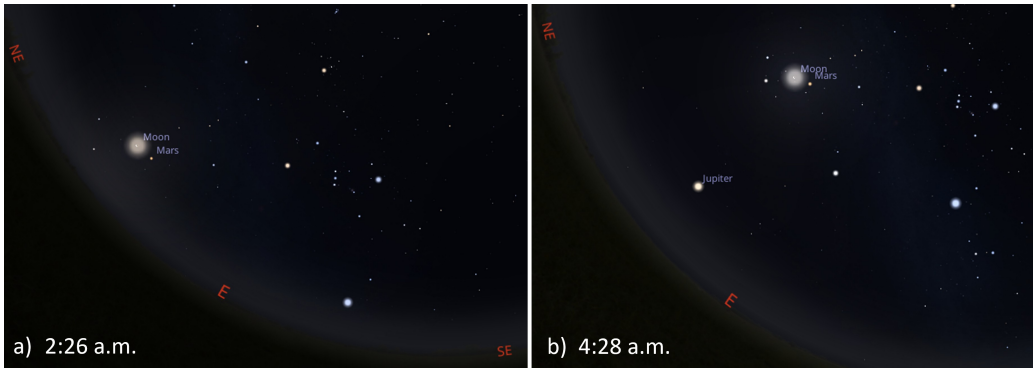

Figure 4: The view of the eastern sky showing the a) conjunction at 02:26 a.m. and b) close approach at 04:28 a.m. of the Moon and Mars on 07 September using Stellarium.

On 09 September at 02:11 a.m., the **Moon** and **Jupiter** will share the same right ascension, with the Moon passing 50' north of Jupiter. About half an hour later, at 02:44 a.m., the pair will reach their appulse, with their angular separation narrowing to just 46.4 arcminutes. The Moon will shine at magnitude -9.8, while Jupiter will appear at magnitude -1.8. The two objects will be visible against the background stars of Cancer, offering a notable sight in the pre-dawn sky. The exact occurrences of these events will not be observable, as both objects will still be below the horizon. However, the pair can be seen rising together above the eastern horizon at around 04:30 a.m. [Figure 5] and will remain visible until they are lost in the glare of the Sun. [11,14,15]

On 14 September at 07:11 p.m., the 3-day-old **Moon** and **Venus** will meet in conjunction, passing within 31' of each other. At approximately the same time, the pair will reach their closest apparent approach, with an angular separation of a mere 28.8 arcminutes. Both objects will be visible against the backdrop of the constellation Virgo. The Moon will shine at magnitude -10.3, while brilliant Venus will appear at magnitude -4.5, making

this a striking pairing in the evening sky. Their conjunction will be visible in the western sky as shown in Figure 6, while their close approach will be challenging to observe as the pair lies low above the western horizon. [11,16,17]

Figure 5: The view of the eastern sky showing the close pairing of the Moon and Jupiter on 09 September at 04:30 a.m. using Stellarium.

Figure 6: The view of the western sky showing the conjunction of the Moon and Venus on 14 September at 07:11 p.m. using Stellarium.

Figure 7: The view of the eastern sky showing the conjunction of the Moon and Saturn on 27 September at 08:01 p.m. using Stellarium.

On 27 September at 02:35 p.m., the **Moon** and **Saturn** will make a close approach, passing within 6°11' of each other. Later that evening, at 08:01 p.m., the pair will reach conjunction, with the Moon positioned 6°55' north of Saturn. The Moon will shine at magnitude -12.7 as it moves through the constellation Pisces, while Saturn will appear at magnitude 0.3 in Cetus. Their close approach will not be observable, as it occurs during the daytime; however, their conjunction will be visible in the night sky as shown in Figure 7. [11,18,19]

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.

September Equinox

The **September Equinox**, also known as the **Autumnal Equinox**, will occur on **23 September** at **08:05 a.m.** It marks the beginning of autumn in the Northern Hemisphere and spring in the Southern Hemisphere. Equinoxes occur because the Earth's rotational axis, or polar axis, is tilted at an angle of approximately 23.5° relative to the plane of its orbit around the Sun. During an equinox, the Sun is positioned directly over the Earth's equator, resulting in nearly equal lengths of daytime and nighttime, with each lasting approximately 12 hours. On the day of the equinox, the Sun also rises due east and sets due west. [20]

Meteor Shower

The **September ε-Perseid** meteor shower is a subtle annual meteor shower active from **05–21 September**, with peak activity expected around **09 September**. Under ideal dark-sky conditions, observers may see up to five (5) meteors per hour at the shower's peak. The shower's radiant, located in the constellation Perseus, rises above the eastern horizon at around 09:02 p.m., allowing meteors to become visible from that time onward. Activity continues through the night until dawn, at approximately 05:20 a.m. The radiant reaches its highest altitude at around 04:00 a.m. [Figure 8], offering favorable viewing conditions as the radiant climbs higher in the sky. The shower's peak will occur near the New Moon, meaning moonlight will cause minimal interference, providing darker skies and better conditions for observing these faint meteors. [21]

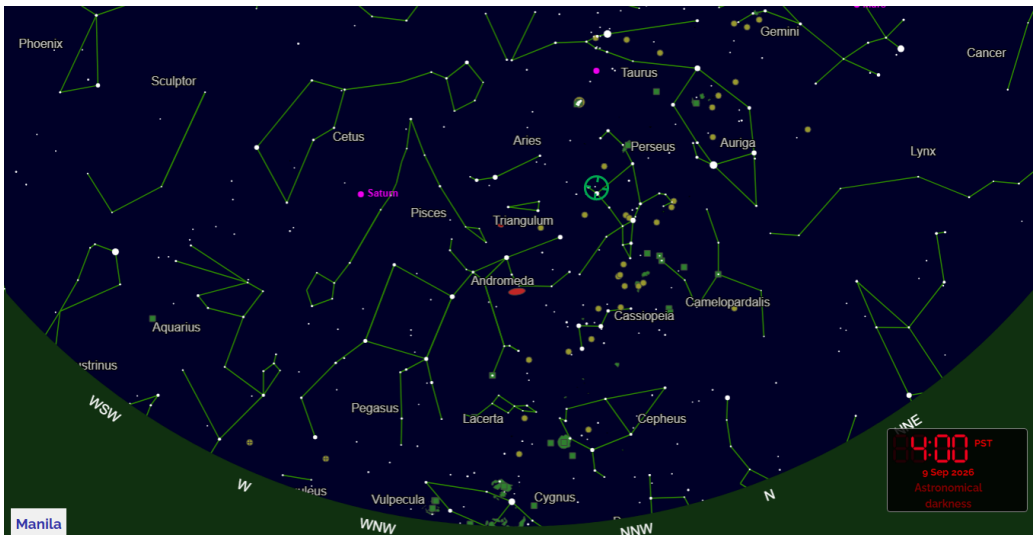

Figure 8: The view of the northwestern sky during the peak of the September ε-Perseid meteor shower on 09 September 2026 at 04:00 a.m. when the shower's radiant is represented by the green solid circle.

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.

Calendar of Astronomical Events for September 2026

Table 1 shows a summary of the astronomical events for September 2026. All times displayed are in Philippines Standard Time (PhST).

Table 1: The summary of astronomical events for September 2026

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27	Conjunction of the Moon and Saturn	08:01 p.m.

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24 August 2026

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