PRESS RELEASE FEBRUARY 2024

ASTRONOMICAL DIARY

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

ASTRONOMICAL EVENTS, FEBRUARY 2024

DATE	EVENT	TIME
08	Conjunction of Moon and Venus	02:50 a.m.
08	Conjunction of Moon and Mars	02:30 p.m.
09	α-Centaurid Meteor Shower (ZHR=6)	---
09	Conjunction of Moon and Mercury	05:59 p.m.
11	Conjunction of Moon and Saturn	08:40 a.m.
11	Moon at Perigee (Distance = 358,193.158 km)	02:53 a.m.
15	Close approach of Moon and Jupiter	02:16 p.m.
19-23	National Astronomy Week	---
22	Conjunction of Venus and Mars	05:46 p.m.
25	Moon at Apogee (Distance = 406,274.358 km)	10:59 p.m.
28	Mercury at Superior Solar Conjunction	---
29	Saturn at Solar Conjunction	---

PHASES OF THE MOON

Last Quarter
Feb 03 07:18 a.m.

New Moon
Feb 10 06:59 a.m.

First Quarter
Feb 16 11:01 p.m.

Full Moon
Feb 24 08:30 p.m.

RISE AND SET TIMES OF PLANETS

DATE	MERCURY		VENUS		MARS		JUPITER		SATURN	
	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set
Feb 01	05:18 am	04:34 pm	04:21 am	03:37 pm	05:05 am	04:20 pm	11:17 pm	11:48 pm	07:57 am	07:38 pm
Feb 11	05:41 am	05:04 pm	04:33 am	03:52 pm	04:57 am	04:15 pm	10:42 pm	11:14 pm	07:22 am	07:03 pm
Feb 21	06:03 am	05:38 pm	04:44 am	04:07 pm	04:48 am	04:09 pm	10:08 am	10:40 pm	06:46 am	06:29 pm
Feb 29	06:20 am	06:07 pm	04:50am	04:19 pm	04:40 am	04:05 pm	09:41 am	10:14 pm	06:81 am	06:01 pm

NATIONAL ASTRONOMY WEEK

"Popularizing Astronomy in the Region through Science Education and Communication (PARSEC)"

On 27 January 1993, under the administration of the late President Fidel V. Ramos, he passed Proclamation No. 130 declaring the third week of February of every year as National Astronomy Week. Under the auspices of the Philippine Astronomical Society, Inc. (PAS) and the Philippine Atmospheric, Geophysical, and Astronomical Services Administration (PAGASA), the National Astronomy Week became an annual celebration for the Filipino youth.

The theme for the 31st-year celebration - Popularizing Astronomy in the Region through Science Education and Communication (PARSEC). Through this, the event aims to raise awareness about the significance of astronomy in education and its relevance to our everyday life. This is to encourage a sense of community engagement and instill in the youth the importance of environment conservation and preservation through gaining an appreciation of Astronomy as stated in the Presidential Proclamation No. 130 of 1993.

Read more on NAW 2024 Press Release here: https://bit.ly/NAW2024PressRelease

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

Stars and Constellations

February stands out as the ideal month to marvel at the beauty of the night sky, with a particular focus on the northern constellations **Auriga, Camelopardalis, Gemini,** and **Monoceros**. Meanwhile, in the southern hemisphere, prominent constellations include **Canis Major, Columba,** and **Puppis**. The prominent February constellations at 09:00 p.m. on 15 February 2024 are positioned directly overhead as shown in Figure 1 [1, 2].

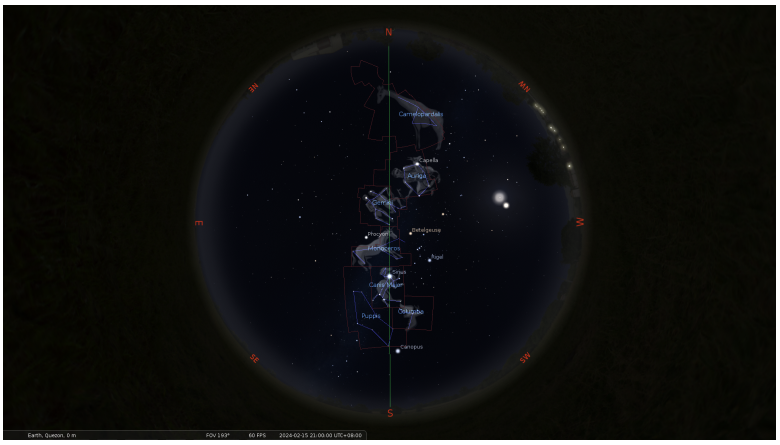

Figure 1: The view of the night sky featuring the prominent February constellations at 09:00 p.m. on 15 February 2024 using the Stellarium software

The **Auriga** constellation is easily recognizable with its helmet-like shape. It's home to bright stars, including *Capella*, the sixth-brightest in the night sky. Other stars include Rigel, Aldebaran, Castor, Pollux, Procyon, and Sirius, forming the Winter Hexagon (Figure 2). Within Auriga lies the Flaming Star Nebula or IC 405 (Figure 2a) [2].

Gemini is a constellation with two bright stars, *Castor* and *Pollux*, which mark the heads of the celestial twins. Additionally, there are several notable deep sky objects like Messier 35, NGC 2392 (aka Eskimo Nebula or Clown Face Nebula), (Figure 2b) Medusa Nebula, and the galactic supernova remnant IC 443, also known as the Jellyfish Nebula [2].

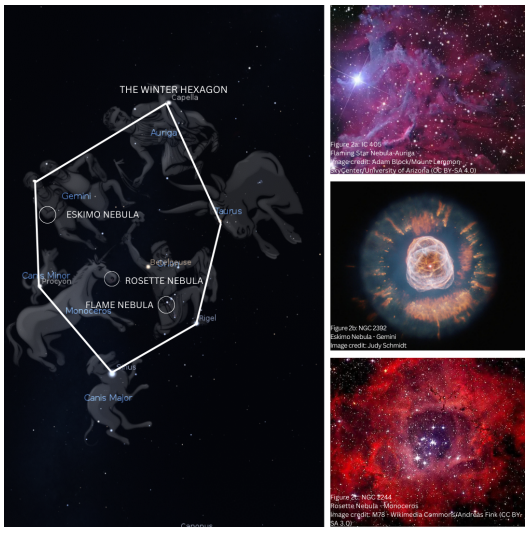

Figure 2: The Northern Constellations

Monoceros, or the Unicorn, is a faint constellation with no bright stars. It has notable variable stars, including Plaskett's Star and A0620-00, the nearest black hole to the Sun. Stargazers love Monoceros for its famous nebulae and clusters, like the Christmas Tree Cluster and the Rosette Nebula [Figure 2c] [2].

Camelopardalis is one of the largest constellations visible in February. It represents the graceful giraffe, sometimes called the "camel-leopard" because of its long neck like a camel and body with spots like a leopard. Its location is the gap between Ursa Major and Cassiopeia. The constellation has three stars with known exoplanets but no Messier objects. The brightest star in this constellation is *Beta Camelopardalis* [2].

Canis Major is a constellation that contains *Sirius*, the brightest star in the sky and one of the closest stars to our solar system. Sirius is part of two major asterisms, the *Winter Hexagon* and the *Winter Triangle*, which dominate the evening sky in the winter months. Canis Major is easy to spot as it sits next to Orion. There are several notable deep sky objects in Canis Major like the open clusters Messier 41, Caroline's Cluster (NGC 2360) and the Tau Canis Majoris Cluster (NGC 2362), the emission nebula NGC 2359, also known as Thor's Helmet (Figure 3a) [2].

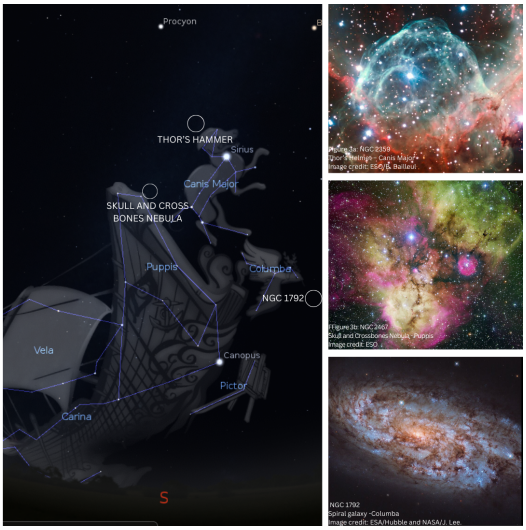

Figure 3: The Southern Constellations

Underneath Canis Major lies the constellation **Puppis**. Formerly part of the Argo Navis constellation, along with Carina and Vela. It has open clusters like Messier 46, Messier 47, and Messier 93, as well as planetary nebulae NGC 2438 and NGC 2440. The Skull and Crossbones Nebula is also here (Figure 3b) [2].

Located to the south of Canis Major and Lepus lies the constellation **Columba**. This constellation does not have any bright stars, but it is home to several interesting deep-sky objects, including the globular cluster NGC 1851, the Seyfert galaxy NGC 1808, and the spiral galaxy NGC 1792 (Figure 3c) [2].

Planetary Location

Due to its proximity to the Sun, **Mercury** won't be visible this month. However, **Venus** and **Mars** will be observable shortly before sunrise. As the two will rise closer to the Sun during the last week of February, the glare coming from the Sun will make it harder to spot Venus and Mars [1,3].

Currently, **Jupiter** is still the centerpiece of the night sky. It will continue to shine at an average apparent magnitude of about -2.25 and visible for most of the night. **Saturn**, on the other hand, will only be observable until the second week of February. It can be seen just after an hour before sunset [1,3].

Figure 4: The view of the east-southeastern sky showing the pairings of Waning Crescent Moon, Mars, and Venus in a triangular shape on 08 February at 05:30 a.m. using the Stellarium Software

On 08 February at 02:50 a.m., the **Waning Crescent Moon** and **Venus** will be in conjunction, passing within 5°26'. Shortly after, at 02:30 p.m., the **Waning Crescent Moon** and **Mars** will also be in conjunction, separated by 4°13'. Both pairings will be unobservable; however, the best time to witness the Moon, Venus, and Mars is at 05:30 a.m. as the trio forms a triangle shape (Figure 4) [1,3,4,5,6].

On 09 February, at 05:59 a.m., the **Waning Crescent Moon** and **Mercury** will be in conjunction. Mercury will be 3°22' apart from the Moon. Similarly, on 11 February at 08:40 a.m., the **Waning Crescent Moon** and **Saturn** will be in conjunction. They will be separated by 1°48' from each other. Unfortunately, these two conjunctions won't be visible due to the presence of the Sun, as the pairing can easily get lost in the glare of the Sun [1,3,10,11].

Similarly, on 15 February at 02:05 p.m., the **Waxing Crescent Moon** and **Jupiter** will come close to each other, passing within 2°53'. After two hours, at 04:16 p.m., the pair will be in conjunction, with Jupiter being separated by 3°09' from the Moon. However, due to the presence of the Sun, the conjunction will not be visible. The best time to view this pairing is at 07:00 p.m. in the western sky, both in the constellation Aries (Figure 5) [1,3,7].

Figure 5: The view of the western sky showing the pairing of Waxing Crescent Moon and Jupiter on 15 February at 07:00 p.m. using Stellarium.

On 22 February at 05:46 p.m., the planets **Venus** and **Mars** will closely approach, passing within 37.4 arcminutes of one another. Later that evening, just before midnight, the pair will be in conjunction, separated by 37.8 arcminutes. Unfortunately, the event will not be visible as it occurs when both planets are still below the horizon. However, the best time to see this occurrence will be at approximately 05:30 a.m. on 23 February, looking in the east-southeastern sky before sunrise, located in the constellation **Capricornus** (Figure 6) [1,9].

Figure 6: The view of the pairing of planet Venus and Mars, located 10° above the east southeastern sky on 23 February at 05:30 a.m. using Stellarium.

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.

Meteor Shower

The α**-Centaurid** meteor shower will be active from **31 January to 20 February**, peaking on **9 February**. At its peak, the meteor shower will produce an estimated nominal rate of 6 meteors per hour. The shower will be visible from the time constellation Centaurus rises in the southeastern sky, which is around 12:23 AM. However, in Manila, we can expect to see only 1 meteor per hour during the peak of the meteor shower, as the radiant is on the lower portion of the sky, as shown in Figure 7 [12,13].

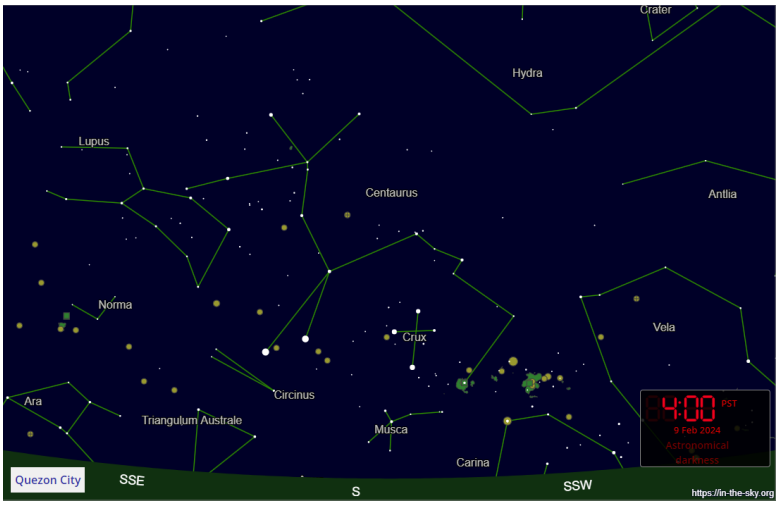

Figure 7: The view of the southern sky during the peak of α-Centaurid on 09 February 2024 at 04:00 a.m. when the green solid circle represents the shower radiant.

Meteor showers are best viewed with the naked eye when the radiant point is above the horizon. The number of visible meteors increases as the radiant point moves higher in the sky. For the best viewing experience, find a dark observation site away from the city lights and ensure clear, moonless sky conditions.

Calendar of Astronomical Events for February 2024

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

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29 January 2024

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