PRESS RELEASE JUNE 2023

ASTRONOMICAL DIARY

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

ASTRONOMICAL EVENTS, JUNE 2023

DATE	EVENT	TIME
04	Mercury at dichotomy	02:02 p.m.
07	Moon at Perigee (Distance = 364,927.621 km)	07:06 a.m.
10	Close Approach of Moon and Saturn	---
21	June Solstice	10:58 p.m.
22	Close Approach of Moon and Venus	---
22	Close Approach of Moon and Mars	---
23	Moon at Apogee (Distance = 405,325.693 km)	02:30 a.m.
27	June Bootids	09:00 p.m.
30	International Asteroid Day	---

PHASES OF THE MOON

Full Moon
Jun 04 11:42 a.m.

Last Quarter
Jun 11 03:31 a.m.

New Moon
Jun 18 12:37 a.m.

First Quarter
Jun 26 03:50 p.m.

RISE AND SET TIMES OF PLANETS

DATE	MERCURY		VENUS		MARS		JUPITER		SATURN	
	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set
Jun 01	04:00 AM	04:34 PM	08:43 AM	09:40 PM	09:32 AM	10:20 PM	03:11 AM	03:39 PM	12:06 AM	11:47 AM
Jun 11	04:08 AM	04:53 PM	08:46 AM	09:37 PM	09:18 AM	10:02 PM	02:39 AM	03:09 PM	11:24 PM	*11:09 AM
Jun 21	04:38 AM	05:35 PM	08:44 AM	09:28 PM	09:05 AM	09:44 PM	02:07 AM	02:38 PM	10:45 PM	*10:30 AM
Jun 30	05:23 AM	06:26 PM	08:37 AM	09:14 PM	08:52 AM	09:28 PM	01:37 AM	02:09 PM	10:09 PM	*09:54 AM

SOLSTICE AT STONEHENGE

ASTRONOMY PICTURE OF THE MONTH

Believed to have been standing since 2500 BC, the Stonehenge is one of the most famous archeological sites in the world.

With its Sarsen stones and smaller bluestones placed in the solstice axis to follow the movement of our Sun, the Stonehenge is believed to be precisely framed for the sunrise of the Summer Solstice and the sunset of Winter Solstice.

Image Credit: https://pixabay.com/photos/sunrise-stonehenge-mystical-england-3901312/

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

"tracking the sky…helping the country"
PAGASA Science Garden Complex, BIR Road,
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

June is the best month to observe the northern constellations Bootes, the Herdsman, and Ursa Minor, the Little Bear, and the southern constellations Libra, the Scales and Lupus, the Wolf. Figure 1 depicts the view of the June constellations once they reach their highest point in the night sky on 15 June 2023 at 09:00 p.m. [1,2]

One of the most well-known asterisms in the northern sky, the Little Dipper, is formed by the constellation Ursa Minor, the Little Bear. The brightest star in this constellation, Polaris, is the closest bright star in the north celestial pole, which denotes the Little Dipper's tail that is used for navigation. While Kochab and Pherkad, known to be the "Guardians of the Pole Star" are the second and third brightest star in Ursa Minor, respectively [2].

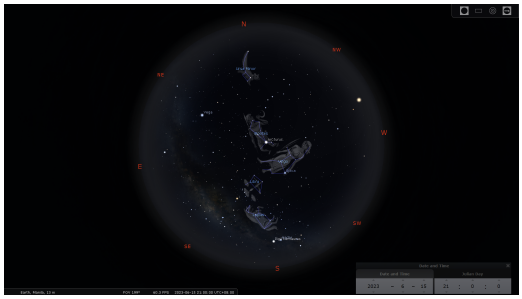

Figure 1: The view of the night sky featuring the prominent June constellations showing the Northern and the Southern Hemisphere on 15 June at 09:00 p.m. using the Stellarium software

Libra is the only constellation in the zodiac that is not an animal or a mythological figure. The four brightest stars in the constellation form a quadrangle. Libra does not contain many bright, deep-sky objects, and the only notable one includes the globular cluster NGC 5897, with an apparent magnitude of 8.52 [2].

Between the well-known constellations of Scorpius and Centaurus is the constellation Lupus, the Wolf. There are a number of fascinating stars and deep-sky objects in the constellation. These include the Retina Nebula (IC 4406), the globular clusters NGC 5824 and NGC 5986, and the legendary supernova remnant SN 1006 [2].

Figure 2: The view of the west-northwestern sky featuring the Spring Triangle asterism using the Stellarium software

Figure 3: The view of the west-northwestern sky featuring the Great Diamond asterism using the Stellarium software

Arcturus, the brightest star in the constellation Boötes, is the fourth brightest star in the night sky, with a magnitude of -0.05. Arcturus, an orange giant, indicates the left foot of Boötes, the Herdsman. To locate

Arcturus, just locate the handle of the asterism Big Dipper, as it points exactly at the star. Moreover, it is also part of two prominent spring asterisms, namely, the **Spring Triangle** (Figure 2), together with the stars Spica of Virgo and Regulus of Leo, and the asterism, the **Great Diamond of Virgo** (Figure 3), with Spica, Denebola of Leo, and Cor Caroli of Canes Venatici [2].

Planetary Location

The month of June provides an opportunity to view the planets Venus and Mars in the western sky during the early evening or after sunset. Conversely, Jupiter and Saturn can be seen in the eastern sky in the early morning, while Mercury can be seen just before sunrise [3].

On 01 June, **Mercury** will shine at a magnitude of 0.4 and will be at its highest point in the sky [4]. As a morning object, Mercury is still just about visible, having passed its greatest elongation west and moving back toward the Sun. Mercury is best observed in the first half of the month and will typically lose in the glare of the Sun as it begins to diminish in the dawn sky from the second half until the end of the month [5].

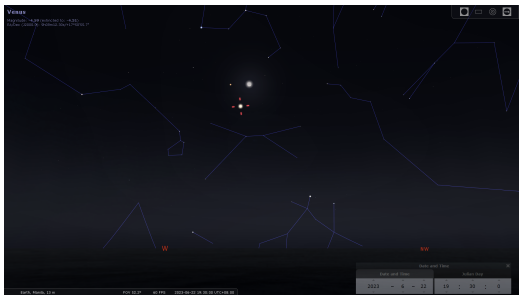

Figure 4: The view of the west-northwestern sky on 22 June 2023 showing the close approach of the Moon, Venus, and Mars using the Stellarium application

Throughout the entire month, **Venus** and **Mars** will be visible in the early evening western sky. On 22 June at 08:48 p.m., the Moon and Venus will be in conjunction, with the Moon passing 3°41' to the north of Venus. At the same time, they will make a close approach, passing within 3°31' of each other [6, 7]. Meanwhile, at around 08:54 p.m., the Moon and Mars will make a close approach passing within 3°34' of one another, among the background stars of the constellation Leo. The Moon, Venus, and Mars are arranged in a triangle formation in Figure 4 providing an excellent opportunity for astrophotographers [8].

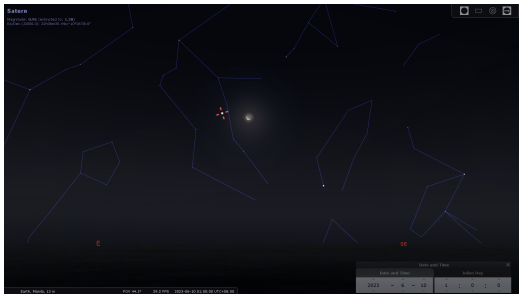

Figure 5: The view of the east-southeastern sky on 10 June 2023 showing the close approach of Moon and Saturn using the Stellarium application

Meanwhile, **Jupiter** and **Saturn** are both visible in the early morning sky at the eastern horizon. The waning gibbous Moon and Saturn will be in conjunction on 10 June at 04:22 a.m., with the Moon passing 2°58' south of Saturn. At around the same time, the pair will make a close approach, passing within 2°42' of each other. The view of the close pairing placed among the background stars of the constellation Aquarius can be observed in the east southeastern horizon as soon as it rises at around *11:29 p.m. (*June 09) (Figure 5) [9, 10].

Meteor Shower

The **June Bootid Meteor Shower** is active from 22 June to 02 July, with its peak activity occurring on 27 June at around 07:00 p.m. The parent body responsible for this meteor shower is the comet 7P/Pons-Winnecke. The June Bootids will most likely put its best displays at 09:00 p.m., when the radiant point is highest in the sky. The first quarter Moon in Virgo presents significant interference with the meteor shower observation (Figure 6) [11, 12].

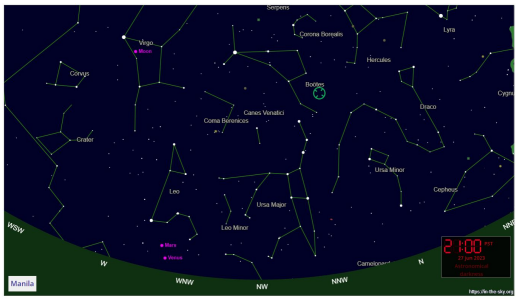

Figure 6: The view of the north-northeastern sky during the peak of June Bootids on 27 June 2023 at 09:00 p.m. when the shower's radiant represented by the solid green circle is highest in the sky

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.

June Solstice

The **June Solstice** will be on 21 June at 10:58 p.m. By then, the Sun will reach its most northerly point in the sky in Taurus at a declination of 23.5°N. During the June Solstice, the northern hemisphere will experience the longest day and will mark the first day of summer. Subsequently, it will also mark the first day of winter in the southern hemisphere, wherein the Sun will have a shorter time staying above the horizon than any other day of the year [13, 14].

Calendar of Astronomical Events for June 2023

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

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Approved by:

Ms. SHIRLEY J. DAVID
Chief, RDTD

29 May 2023

For more information, call or email:

Ms. MA. ROSARIO C. RAMOS
Chief, SSAS-RDTD
PAGASA-DOST

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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

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