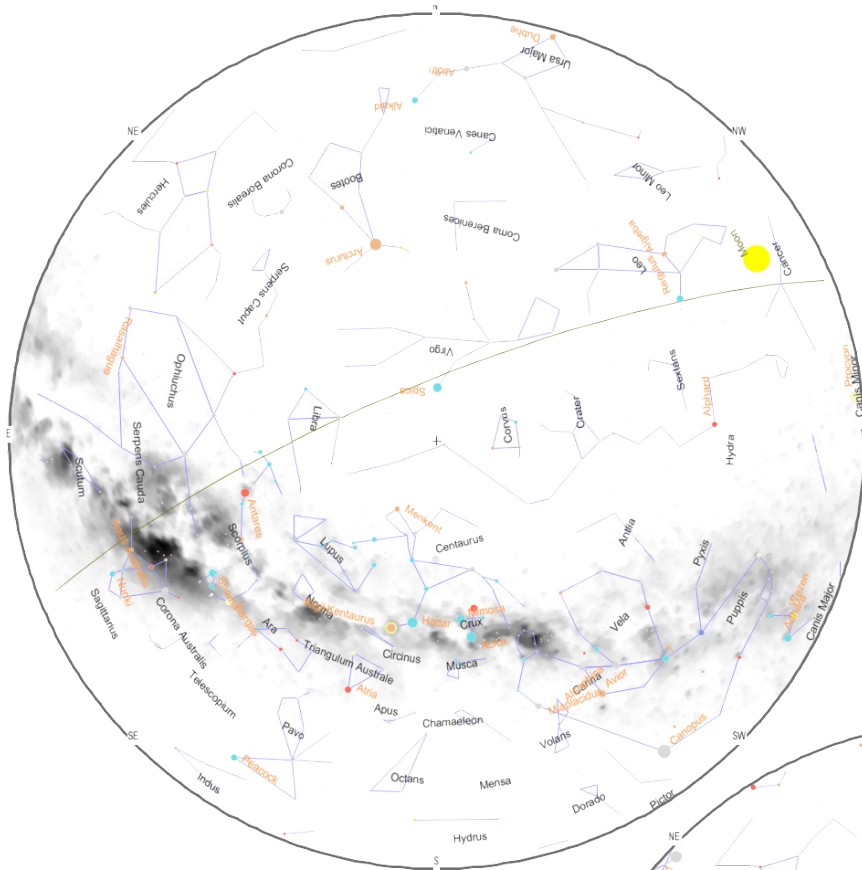


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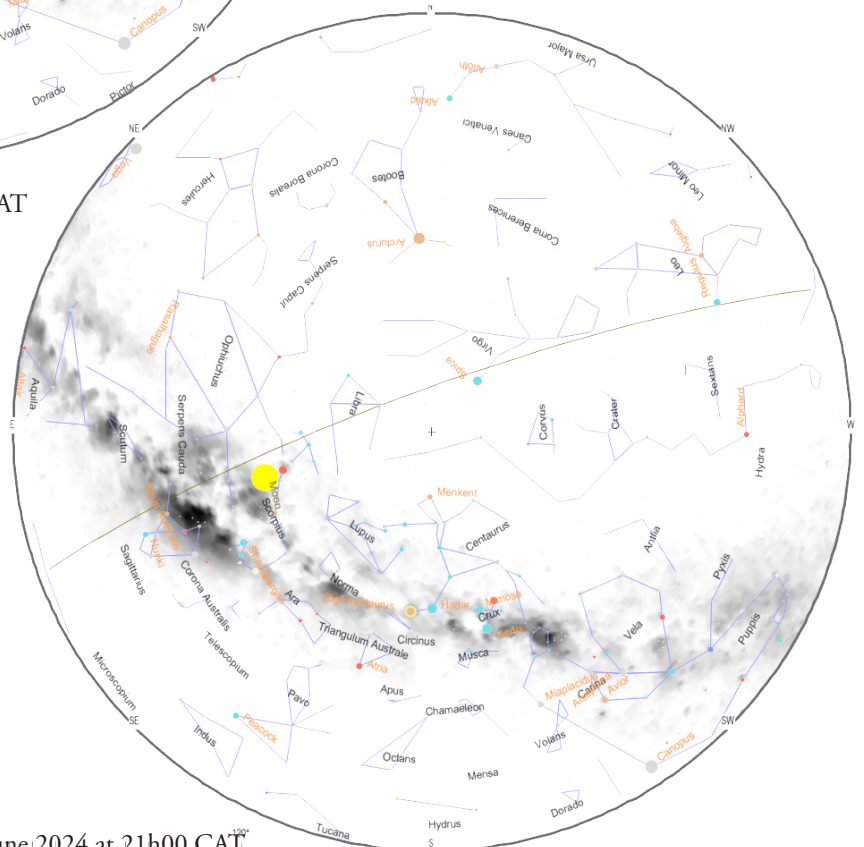
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Astronews June 2024

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Skychart at Windhoek on 10 June 2024 at 21h00 CAT



Skychart at Windhoek on 20 June 2024 at 21h00 CAT

Moon Phases

30 May 2024	Last Quarter
06 June 2024	New Moon
14 June 2024	First Quarter
22 June 2024	Full Moon

Solar System

Planet Visibility	Rise	Culm.	Set
15 June 2024			
Mercury	07:30	12:49	18:09
Venus	07:40	13:00	18:21
Mars	03:40	09:23	15:06
Jupiter	05:57	11:24	16:52
Saturn	00:25	06:38	12:50

Mercury recently passed behind the Sun and is not observable since it is very close to the Sun, at a separation of only 1° from it.

Venus recently passed behind the Sun. From Namibia, it is not observable since it is very close to the Sun.

Mars is visible in the dawn sky, rising at 03:40 and reaching an altitude of 39° above the eastern horizon before fading from view at dawn.

Jupiter recently passed behind the Sun. From Namibia, it is visible in the dawn sky, rising at 05:57 – 1 hour and 30 minutes before the Sun – and reaching an altitude of 14° above the north-eastern horizon before fading from view in the morning sky.

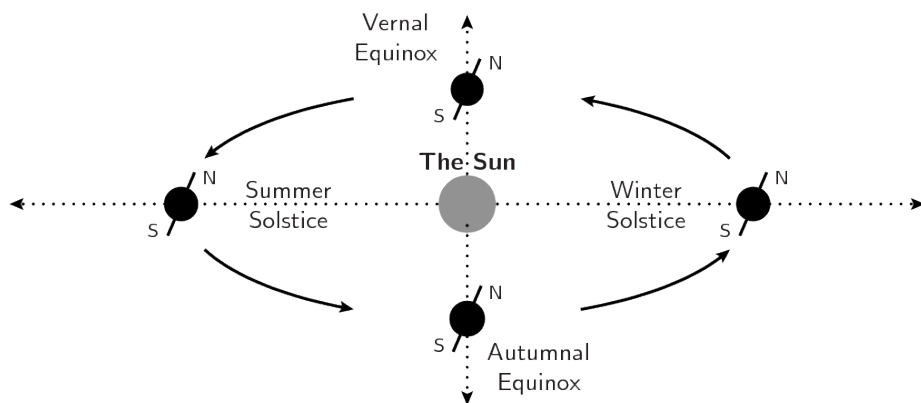
Saturn is visible in the morning sky, after rising in the east at around 01:18, when it reaches an altitude of 11° above your eastern horizon. It will then reach its highest point in the sky at 73° above your northern horizon, before dawn twilight.

Other Occurrences

The **Arietid meteor shower** will be active from 14 April to 24 June, producing its peak rate of meteors around 10 June.

Seen from central Namibia, the shower will not be visible before around 05:10 in the morning when its radiant point rises above our eastern horizon. It will then remain active until dawn breaks around 07:00.

The shower is expected to reach peak activity at around 10:00 CAT on 10 June 2024,



so the best displays might be seen before dawn on 10 June.

Meteor showers arise when the Earth passes through streams of debris left behind in the wake of comets and asteroids. Over time, the pieces of grit-like debris in these streams distribute themselves along the length of the parent object's orbit around the solar system.

Shooting stars are seen whenever one of these pieces of debris collides with the Earth's atmosphere, typically burning up at an altitude of around 70 to 100 km.

June solstice 20 June will be the shortest day of 2024 in the southern hemisphere, midwinter day.

This is the day when the Sun's annual journey through the constellations of the zodiac carries it to its most northerly point in the sky, in the constellation of Cancer at a declination of 23.5°N . This day is counted by astronomers to be the first day of winter in the southern hemisphere.

The Earth orbits the Sun once every 365.242 days, and this is the time period over which the cycle of solstices and equinoxes, and consequently all the Earth's seasons, repeat from one year to the next.

In any year which is not a leap year, the solstices occur roughly 5 hours and 48 minutes – just under a quarter of a day – later from one year to the next.

This is why the seasons would drift later in the year if it was not for an additional day being inserted into every fourth year on 29 February.

Measuring the radius of the Earth

At the solstice, the Sun appears overhead at noon when observed from locations on the tropic of Cancer, at a latitude of 23.5°N .

This fact was used by the ancient Greek astronomer Eratosthenes in around 200 BC to work out the radius of the Earth for the first time. He knew that at midsummer, the Sun appeared exactly overhead in the Egyptian city of Aswan (called Swenet then) because its light shone right to the bottom of deep wells.

He travelled to Alexandria, on the Egyptian north coast, at a distance of 5,000 stades from Aswan. Here, he used a stick in the ground to determine that the Sun was seven degrees away from the zenith at midsummer, implying that a distance of 5,000 stades around the circumference of the Earth corresponded to a distance of seven degrees around the Earth's curved surface.

Thanks to this experiment, the ancient Greeks were well aware that the Earth was spherical, and even had a good idea of its size, long before anyone had circumnavigated the globe.

Constellation of the Month

by Simon van der Lingen

Scorpius

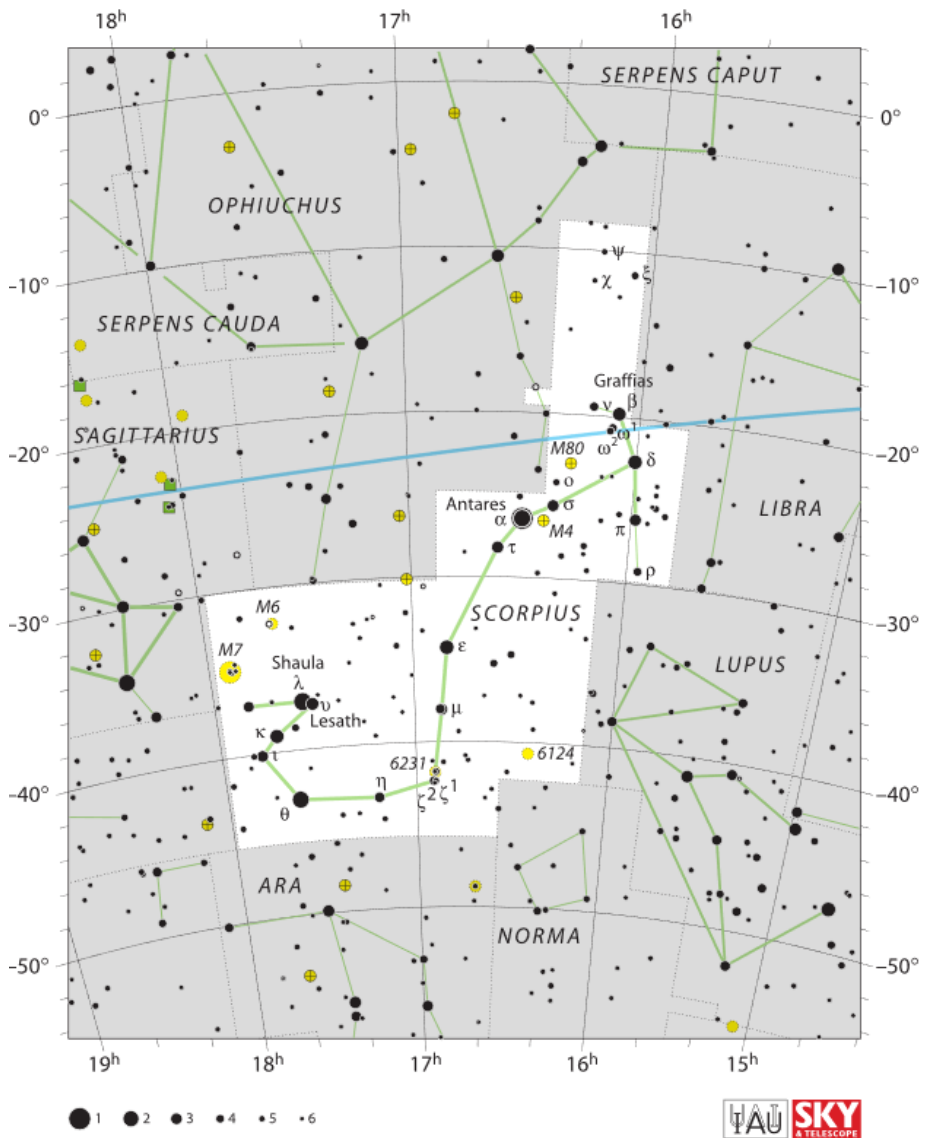
For those of you who can remember as far back as last month's article, the eruption of T Corona Borealis into a nova has not yet happened; it's still scheduled for some time before the end of September, so keep on looking up! For those whose memory is failing, or who didn't read last month's article, T Corona Borealis is a White Dwarf, normally invisible to us here, in the constellation of Corona Borealis, that is slowly stealing hydrogen from its neighbour and which, some time before September, is expected to have accumulated enough to briefly flare back into life and become once again visible from Earth. This doesn't happen often, about once every 70 years in fact, and the signs are that it's happening any time now.

Evenings are definitely getting cooler and as our beautiful planet continues its journey around the Sun, we once again see the constellation of Scorpius rising in the east in the evenings. Scorpius is a favourite for many amateur stargazers, partly because it really does look at least a bit like a scorpion, partly, because it's easy to find and partly because it, is also chock full of relatively accessible and interesting deep sky objects.

Greek mythology tells us that the Goddess Gaia sent a magical scorpion to punish the hunter Orion for wreaking havoc on the wildlife of the Greek islands. Recognizing his danger, Orion appealed to Zeus for protection and Zeus hurled him to safety in the sky. Not so easily thwarted, Gaia did the same and threw her scorpion into the sky as well, where it doggedly pursued Orion through the millennia.

Although the Greeks saw a scorpion, the Indonesians see the top half of the constellation as a coconut palm bent by the wind and Hawaiians see the bottom half as a fish hook, sacred to their demigod Maui. Maui was made famous by Disney in the animated musical, Moana.

Central to Scorpius is Antares, the Heart of the Scorpion and a Red Supergiant about 15 times as massive and a diameter 680 times that of our Sun. Giant stars burn very much faster than their smaller cousins,



and although very much younger than our Sun, Antares is already close to extinction. Antares is a Binary star system but partner Antares B is difficult to find, even with a telescope, hidden in the glare from the bigger star.

Close to Antares is the Spider Globular Cluster, just visible 1.3° west of Antares. Barely visible under good conditions, it's easy to find with a pair of binoculars. Globular Clusters are densely packed, generally very old, collections of stars, usually quite distant from us. The Spider Globular Cluster at 6,000ly distant is the closest Globular Cluster that we know of and contains about 100,000 stars. The Spider Cluster is identified on many star charts as M4, short for Messier 4. Charles Messier was an 18th-century astronomer obsessed with comets. Comets famously look like fuzzy balls, and Messier quickly grew irritated by objects of similar appearance that were not comets and drew up a catalogue of 110 deep sky objects, labelled from M1 to M110, of things that are not comets. Although Mess-

ier found them boring, it's fun to work your way through a checklist of Messier Objects.

Between the optical binary of Shaula and Lesanth that make up Scorpius' stinger and the spout of the Teapot Asterism in Sagittarius, we can find Ptolemy's Open Cluster. Despite the similar name, Open Clusters are quite different to Globular Clusters. They are much smaller collections of stars that have only recently formed from gas clouds (in this case about 200 million years ago) that will eventually separate and drift apart. Named for the Greek Astronomer Ptolemy who first recorded it as a small bright cloud, the Ptolemy Cluster is a naked-eye object but it's much better viewed through a pair of binoculars. Unsurprisingly, Messier included it as M4 in his catalogue of irritating objects.

By far the most magnificent sight in the winter night sky, the Milky Way stretches from horizon to horizon. Our solar system lies within the Milky Way, about half way between the Central Core and the edge of the Galaxy. We are tilted 60° to the plane

of the Milky Way, meaning that Southern Hemisphere stargazers get a much more direct view of the Milky Way centre than our northern cousins. Not only does Namibia have world-class dark and clear night skies, we also have the best seats in the theatre!

Greek mythology explains the Milky Way as a jet of milk shot from the breast of the Goddess Hera when a jealous Zeus tore the baby Hercules from her. Southern African mythology tells of a young girl who threw a handful of ashes from the campfire to guide her father home after a long day of hunting. The ashes form the background of the Milky Way, the glowing coals become the visible stars we see within it.

Although no planets will be visible in June's evening sky, at 06.30 on the 3rd of June, early rising planetary enthusiasts will be able to see Saturn overhead followed by Neptune (difficult to find), Mars adjacent to a very new moon, Uranus and Mercury, with Jupiter just peeping over the horizon as the Sun comes up. Venus, rising at 7.30 will be late for the parade!

Credits

SkyChart: Cartes du Ciel/Wikipedia, Data: <https://in-the-sky.org/> / ASSA Sky Guide 2024, Pictures: Wikipedia