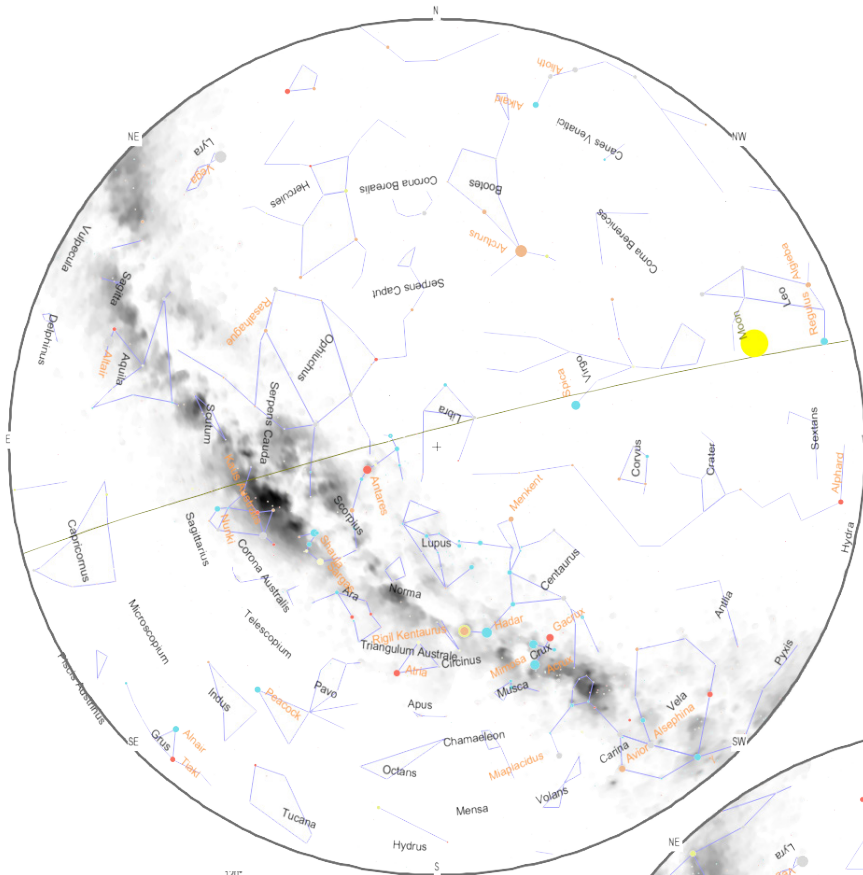


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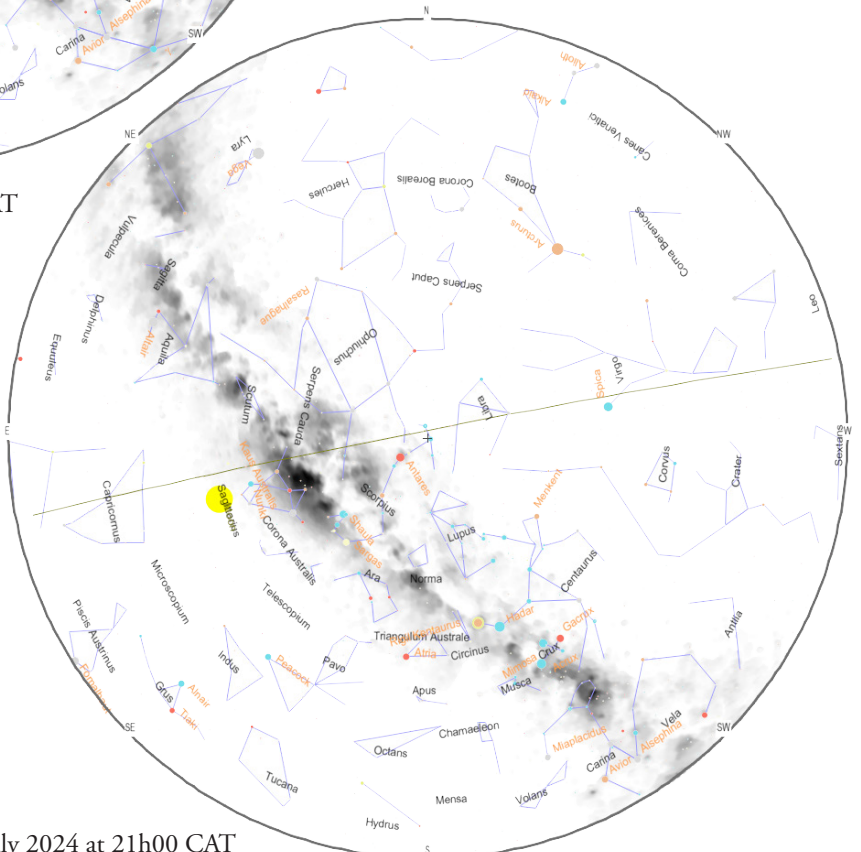
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Astronews July 2024

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120°
Skychart at Windhoek on 10 July 2024 at 21h00 CAT



Skychart at Windhoek on 20 July 2024 at 21h00 CAT

Moon Phases

06 July 2024	New Moon
14 July 2024	First Quarter
21 July 2024	Full Moon
28 July 2024	Last Quarter

Solar System

Planet Visibility	Rise	Culm.	Set
15 July 2024			
Mercury	09:03	14:39	20:15
Venus	08:14	13:41	19:08
Mars	03:19	08:50	14:21
Jupiter	04:29	09:54	15:19
Saturn	22:27	04:40	10:53

Mercury will become visible after dusk at around 18:50 local time above the north-western horizon. Look at about 17 degrees (outstretched above the horizon) It will then sink towards the horizon, setting 1 hour and 52 minutes after

Venus is not yet observable since it is still very close to the Sun.

Mars is visible in the dawn sky, rising at 03:20 and reaching an altitude of 40° above the eastern horizon before fading from view at dawn.

Jupiter becomes visible at around 04:30, roughly 3 hours before the Sun. It will reach an altitude of 30° above the north-eastern horizon before fading from view in the morning sky.

Saturn appears over the eastern horizon and will reach an altitude of about 11° at 23:20 local time, above your eastern horizon. It will fade in the dawn twilight around 06:55, 53° above your western horizon.

Other Occurrences

The Earth at aphelion

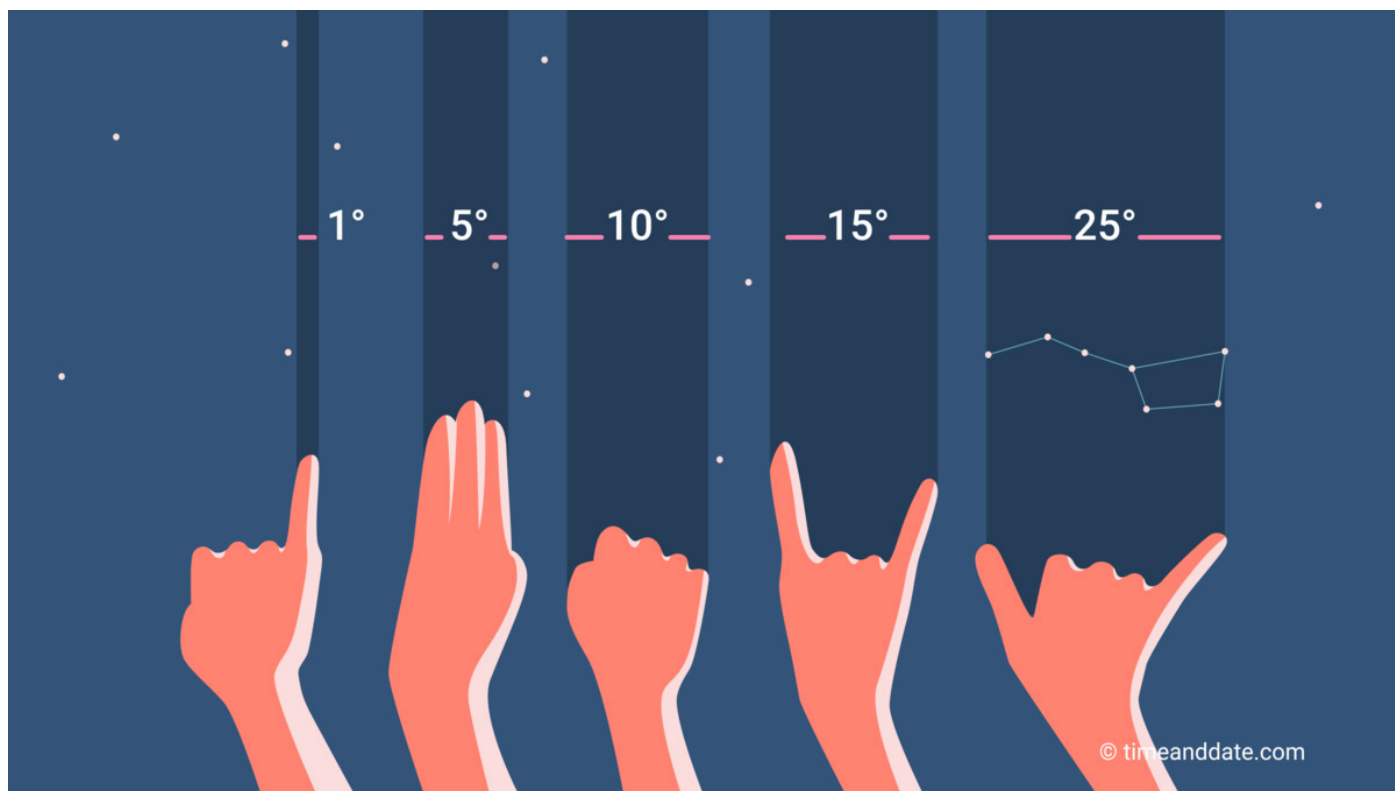
The Earth's annual orbit around the Sun will carry it to its furthest point from the Sun – its aphelion – at a distance of 1.0167 AU.

The Earth's distance from the Sun varies by around 3% over the course of the year because its orbit is slightly oval-shaped, following a path called an ellipse. In practice, this variation is rather slight, however, because the Earth's orbit is very nearly circular. The Earth completes one revolution around this oval-shaped orbit each year, and so it recedes to its greatest distance from the Sun on roughly the same day every year. In 2024, this falls on 5 July.

Annual changes in our weather, for example between the summer and winter, are caused entirely by the tilt of the Earth's axis of rotation, rather than by any change in its distance from the Sun.

How to measure altitude or distance in the night sky with your hands

By holding your hand out at arm's length, the width of your little finger is about 1°. For reference, the diameter of the Sun and Moon are about half a degree. Three fingers is about 5°, a fist is 10°.



Constellation of the Month

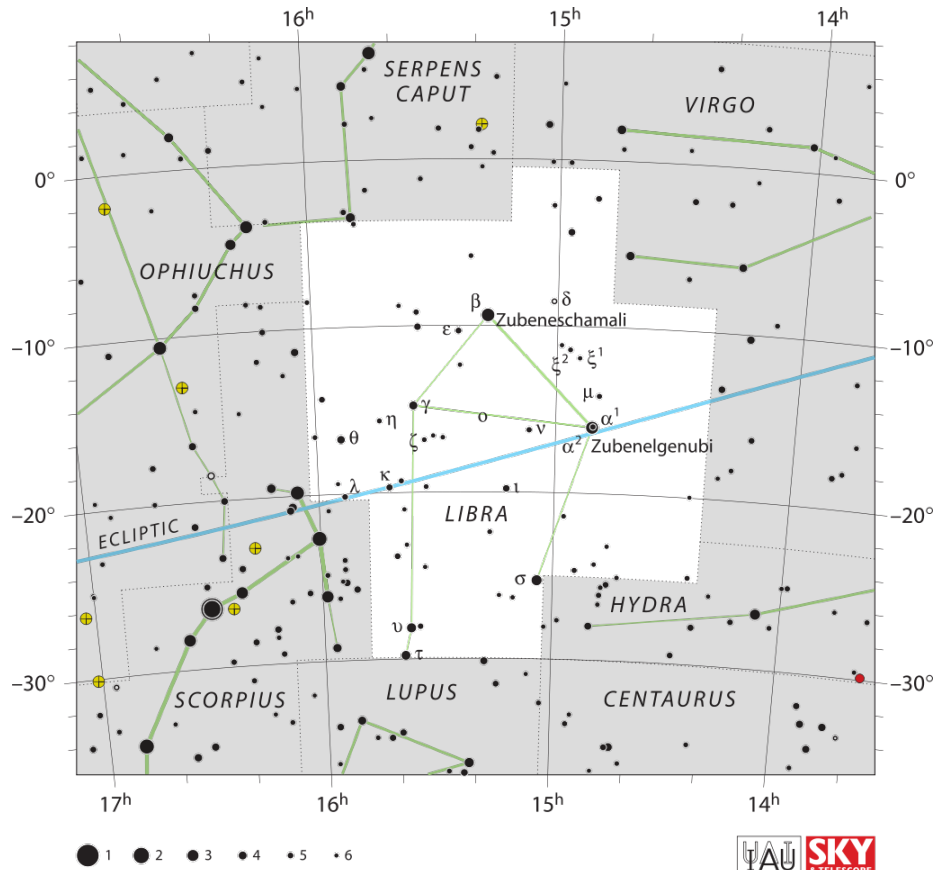
by Simon van der Lingen

Libra

We find the constellation of Libra on the path of the Ecliptic, above the head of the Scorpion. Ancient Egyptians saw Libra as part of Scorpion and named the two brightest stars Zubenelgenubi and Zubeneshamali, surely the coolest names given to any star. Zubenelgenubi means “the southern claw” (of the scorpion) and Zubeneshamali “the northern claw”. The Egyptians alternatively recognised the two stars as part of a balance, sacred to the god Maat, who used the scales to determine the future of every soul at the moment of death. Should the heart of the deceased weigh more than the feather in the second pan of the scale, it would be fed to the crocodile god and the soul banished to the underworld. Should the heart of the recently departed be pure enough that it weighed less than the feather, the soul could ascend to Heaven.

The Romans, and later the International Astronomy Union, adopted and adapted this version, making the scales sacred to Zeus’ daughter Astraea, representing the balance between justice and harmony.

Libra’s primary claim to fame is that it hosts the star HD 140283, better known as the Methuselah Star, after the biblical patriarch who died at the age of 969. Slightly smaller than our Sun, and only 200 light years away, Methuselah is barely visible to the naked eye in a dark sky, but early estimates (2013) of its age dated it as 14.46 billion years – problematic, since other studies had confidently dated the age of the Universe at 13.8 billion years, which remains accepted



by most astrophysicists. The impossibility of a star older than the Universe was resolved by considering firstly the significant uncertainty of the estimate, and later recalculation giving an age of about 12 billion years. Despite the recalculation, Methuselah remains one of the oldest stars known, a survivor of the second generation of stars that began forming only a few million years after the Big Bang and an important source of information on conditions and processes in the early history of our Universe.

Libra also includes the Red Dwarf star Gliese 581, which has a planetary system with two rocky planets regarded as amongst the best candidates to host extra-terrestrial life. Most Red Dwarf stars are prone to regular vicious flares, quite capable of sterilising the surface of nearby planets and quickly stripping their atmosphere. Only planets close to the cool Red Dwarf would be warm enough to have liquid water and hence able to host life. Gliese 581 is unusually placid, retaining its hopeful status.

Credits

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