

## What's Up – March 2025

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#### Sun and Moon

The First Quarter Moon falls on the 6<sup>th</sup> of March at 18h32 and the Full Moon occurs on the 14<sup>th</sup> of March at 08h55. The Last Quarter Moon falls on the 22<sup>nd</sup> of March at 13h30. The New Moon occurs on the 29<sup>th</sup> of March at 12h58. On the 17<sup>th</sup> of March at 18h37, the Moon will be at apogee (furthest from Earth) at a distance of 405 754 km. The Moon will be at perigee (closest approach to Earth) at a distance of 361 967 km on the 1<sup>st</sup> of March at 23h18, and again at a distance of 358 127 km on the 30<sup>th</sup> of March at 07h26. The March (autumnal) equinox occurs on the 20<sup>th</sup> of March at 11h01. This marks one of the two dates in the year where day and night are approximately equal in length. There will be a total lunar eclipse on the 14<sup>th</sup> of March but it will only be visible as a penumbral lunar eclipse in South Africa, as the Moon is setting before the full eclipse begins. In the very east of South Africa the eclipse won't be visible at all. The penumbral eclipse starts at 05h57. In Cape Town, it reaches its maximum at 06h37 before it ends with the moon setting at 06h43. On the 29<sup>th</sup> of March, there will be a partial solar eclipse but this will be visible only in the Americas, Russia, Europe and parts of North Eastern Africa.

#### Planetary and Other Events – Morning and Evening

Venus and Mercury are visible just after sunset in the western horizon near the stars of the constellation Pisces at the beginning of the month, before they become invisible in the solar glare. In the last days of the month, Saturn, Venus and Mercury will be visible in the morning sky, all near the stars of Pisces. The Moon will be near Venus on the 1<sup>st</sup> of March and near Saturn on the 28<sup>th</sup> of March. Mars can be observed in the north east near the stars of the constellation Gemini in the first half of the night. The Moon will be near Mars on the 7<sup>th</sup> of March. Jupiter is located near the stars of the constellation Taurus and is visible in the evening sky. One meteor shower is active in March. The gamma-Normids are active from February the 25<sup>th</sup> to March the 28<sup>th</sup>, peaking on the 14<sup>th</sup> of March. This shower is best viewed between 00h00 and 04h30 looking south-east towards the constellation Norma. Hourly rates are expected to be around 5 meteors per hour at the maximum.

#### The Evening Sky Stars

The bright stars near the summer Milky Way continue to dominate the evening sky, just as in February. The Milky Way runs from NNW to SE in early evening at the beginning of March, and from NW to SE at the end of the month. If you live where a lack of city lights allows you to see the Milky Way, notice how very different the northern and southern portions appear. In the north the Milky Way appears relatively smooth and dim, becoming suddenly brighter and clumpier south of straight up. In the north we're looking out toward the edge of our Milky Way galaxy; while at the point where we see the sudden brightening (in the constellation of Carina, the Keel of the great ship Argo) we are looking along our spiral arm of the galaxy, where there are far more stars in the line of sight. Orion is still high in the NNW in early evening, outlined by the bright stars Rigel, Saif, Betelgeuse and Bellatrix. Taurus the Bull, with the brightish star Aldebaran, is low in the NW.

Directly below Orion in the north are the stars of Auriga the Charioteer, with brilliant Capella near the horizon. Capella is really a pair of giant stars which orbit each other every 104 days. About 100 million km apart, the two stars are each about 10 times the diameter of the Sun, and 50 and 80 times as bright, respectively.

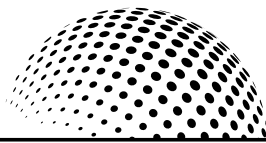
Low in the NNE are the bright stars of the Twins, Castor and Pollux. Castor is another interesting multiple star. Through a telescope, there are 3 stars visible, and astronomers have discovered that each of these is itself double. Castor thus consists of 3 pairs of stars, with each pair of stars orbiting each other with periods of 20 hours to 9 days, the two bright pairs orbiting each other every 400 years, and the dim pair orbiting the other two over many thousands of years.

The brightest star in the night sky, Sirius the Dog Star, appears almost overhead on March evenings, while a bit south of the point overhead is the second brightest star in the night sky, Canopus. Rising in the southeast are the stars of the Southern Cross and the Pointers (Alpha and Beta Centauri). Alpha Centauri is a triple system, with two sun-like stars orbiting each other every 80 years and a dim red dwarf tagging along at a much larger distance. This star was discovered by Robert Innes at the Union Observatory in Johannesburg in 1915, who also suggested the name Proxima. As seen from a planet around either of its brighter companions, Proxima would be an ordinary dim star, invisible for observers plagued by city lights. When it was discovered, Proxima was the faintest star known, but it has long lost even this distinction. At a little over 4 light years away, the stars of the Alpha Centauri system are the closest neighbours of our own Sun.

Achernar and the Magellanic Clouds (looking like detached pieces of the Milky Way) can still be seen in the southwest on March evenings. The Large and Small Clouds are the nearest galaxies to our own Milky Way (with the exception of two small galaxies actually being swallowed by our galaxy) and are about 180 thousand and 190 thousand light years away, respectively. Compare this with Achernar, which is located inside the Milky Way and only a mere 90 light years away. The Sotho referred to Achernar as the senakane (the little horn) while the shield of the little horn is the Small Magellanic Cloud, known as mo'hora le tlala (plenty and famine). If dry dusty air made it appear dim, famine was to be expected.

#### The Morning Sky Stars

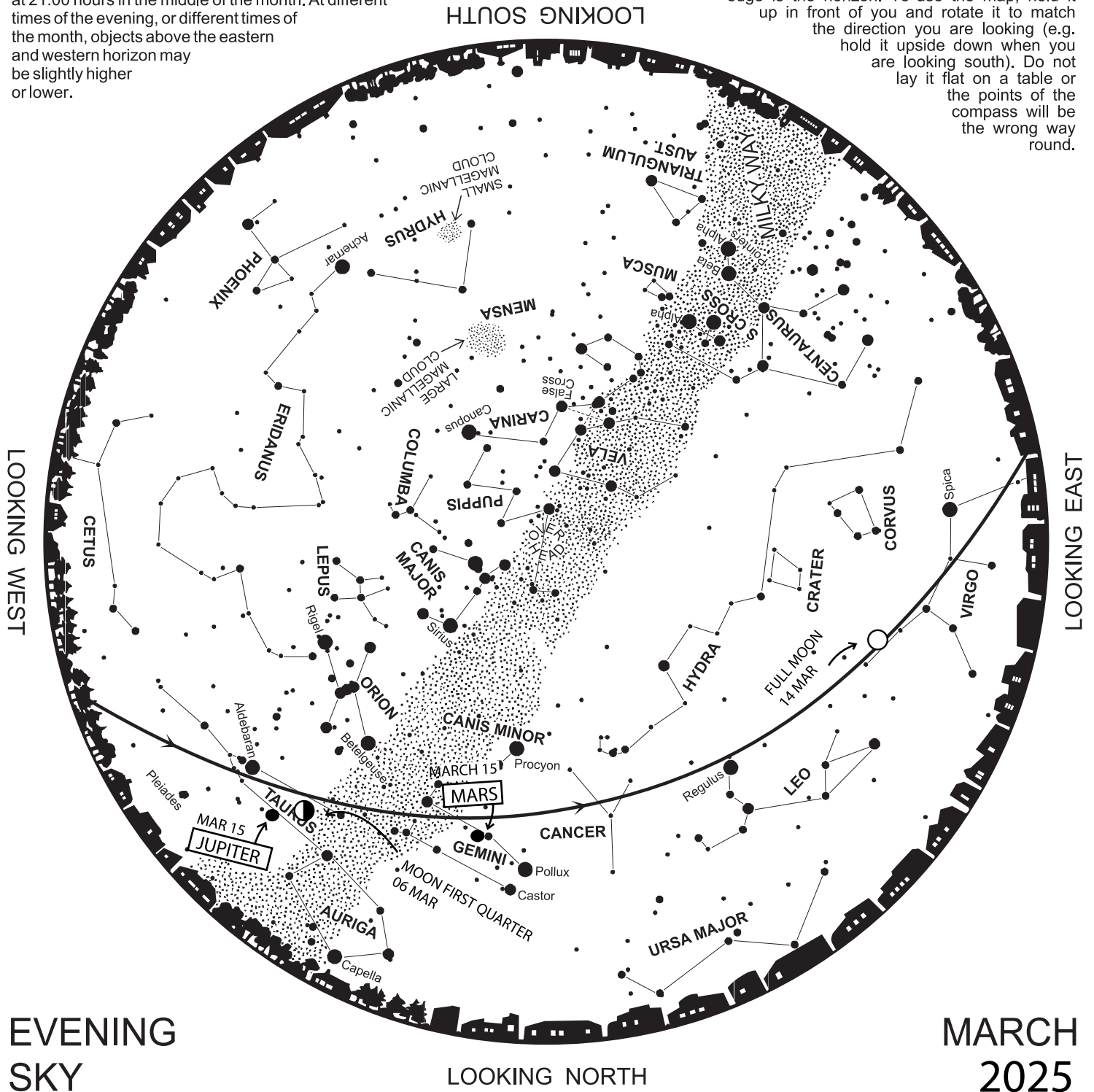
Bright orange Arcturus is low in the northwest before dawn, while ice-white Vega can be seen rising in the northeast. Vega is one of our neighbours, only 25 light years away, and is surrounded by a disk of dust which has intrigued astronomers. To the right of Arcturus is the dim semicircle of the Northern Crown, with the stars of Hercules between the Crown and Vega. Almost overhead is Antares, heart of the Scorpion. The Milky Way runs from northeast to southwest, with the brightest part of the Milky Way in the Scorpion and in Sagittarius the Archer. High in the south are the stars of the Southern Cross and the Pointers, with bright Canopus very low in the southwest. Achernar shines low in the southeast, with the stars of the 'Celestial Aviary' above it. In this part of the sky are the Toucan, the Phoenix, the Crane and the Peacock, assorted scientific instruments and the Southern Fish.



# IZIKO PLANETARIUM AND DIGITAL DOME

The map shows the night sky visible above the Cape at 21:00 hours in the middle of the month. At different times of the evening, or different times of the month, objects above the eastern and western horizon may be slightly higher or lower.

The centre of the map is the overhead point, the edge is the horizon. To use the map, hold it up in front of you and rotate it to match the direction you are looking (e.g. hold it upside down when you are looking south). Do not lay it flat on a table or the points of the compass will be the wrong way round.



## EVENING SKY

## MARCH 2025

According to African starlore, the Milky Way Galaxy was created when a girl of an ancient race flung a handful of ashes and burning edible root into the sky, creating a glowing path for her elders to find their way back home. The old red roots created the cool red stars and the young white roots, the hotter blue/white stars.

Try identify the different coloured stars in the Milky Way as it unfurls itself directly overhead this month. These colours give an indication of the star's surface temperature, where white stars like Rigel (see Orion, hunter, in the north-west) and Sirius (Canis Major, big dog, overhead) are typically much

hotter with shorter lifespans than cooler red stars like Betelgeuse (Orion) and Aldebaran (Taurus, bull, low in the north-west).

The March Equinox (roughly equal day and night) takes place on 20 March (11:01 SAST), with Full Moon ('Harvest Moon') on 14 March. Jupiter (in Taurus) and Mars (in Gemini) are bright evening objects seen towards the north-west (close to Aldebaran) and north respectively. During the month, Venus will migrate from 'Evening Star' at the start of the month (setting just after sunset in the west) to 'Morning Star' at the end of the month (rising before sunrise in the east), where it will reside for the rest of the year.