

## What's Up – March 2024

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#### Sun and Moon

The Last Quarter Moon falls on the 3<sup>rd</sup> of March at 17h23, and the New Moon occurs on the 10<sup>th</sup> of March at 11h00. The First Quarter Moon falls on the 17<sup>th</sup> of March at 06h10. The Full Moon occurs on the 25<sup>th</sup> of March at 9h00.

On the 23<sup>rd</sup> of March at 17h45, the Moon will be at apogee (furthest from Earth) at a distance of 406 294 km. The Moon will be at perigee (closest approach to Earth) at a distance of 356 895 km on the 10<sup>th</sup> of March at 09h04.

The March (Vernal) Equinox occurs on the 20<sup>th</sup> of March at 05h06. This marks one of the two dates in the year when day and night are approximately equal in length. Astronomically, it marks the beginning of autumn on the southern hemisphere.

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

Jupiter is located near the stars of the constellation Aries and is still visible after sunset. It will be near the Moon on the 14<sup>th</sup> of March. Mercury can hardly be observed this month.

Venus, Mars and Saturn can be observed by the early risers in the morning sky. Venus shines as the bright morning star and is located near the stars of the constellation Capricornus at the beginning of the month, and near Pisces at month end. Mars is also located near Capricornus at the beginning of the month but will have moved to Aquarius by month end. Saturn is caught in the solar glare but can be glimpsed in Aquarius towards the very last days of the month and will be clearly visible in April.

Two meteor showers are active in March. The gamma-Normids are active from the 25<sup>th</sup> of February to the 28<sup>th</sup> of March, peaking on the 14<sup>th</sup> of March. This meteor 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, and observing prospects are favourable. The delta-Pavonids (which are rated weak) are active from the 11<sup>th</sup> of March to the 16<sup>th</sup> of April, peaking around the 6<sup>th</sup> of April. They are best viewed between 02h00 and 04h30 looking towards the constellation of Pavo (the Peacock). 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 the 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.

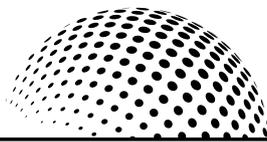
The brightest star in the sky (not counting the Sun), Sirius the Dog Star, appears almost overhead on March evenings, while a bit south of the point overhead is the second brightest star in the sky, Canopus. Rising in the southeast are the stars of the Southern Cross and the Pointers (Alpha and Beta 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 dimmish star, invisible for observers plagued by city lights. When it was discovered, Proxima was the faintest star known, but it has long lost 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.

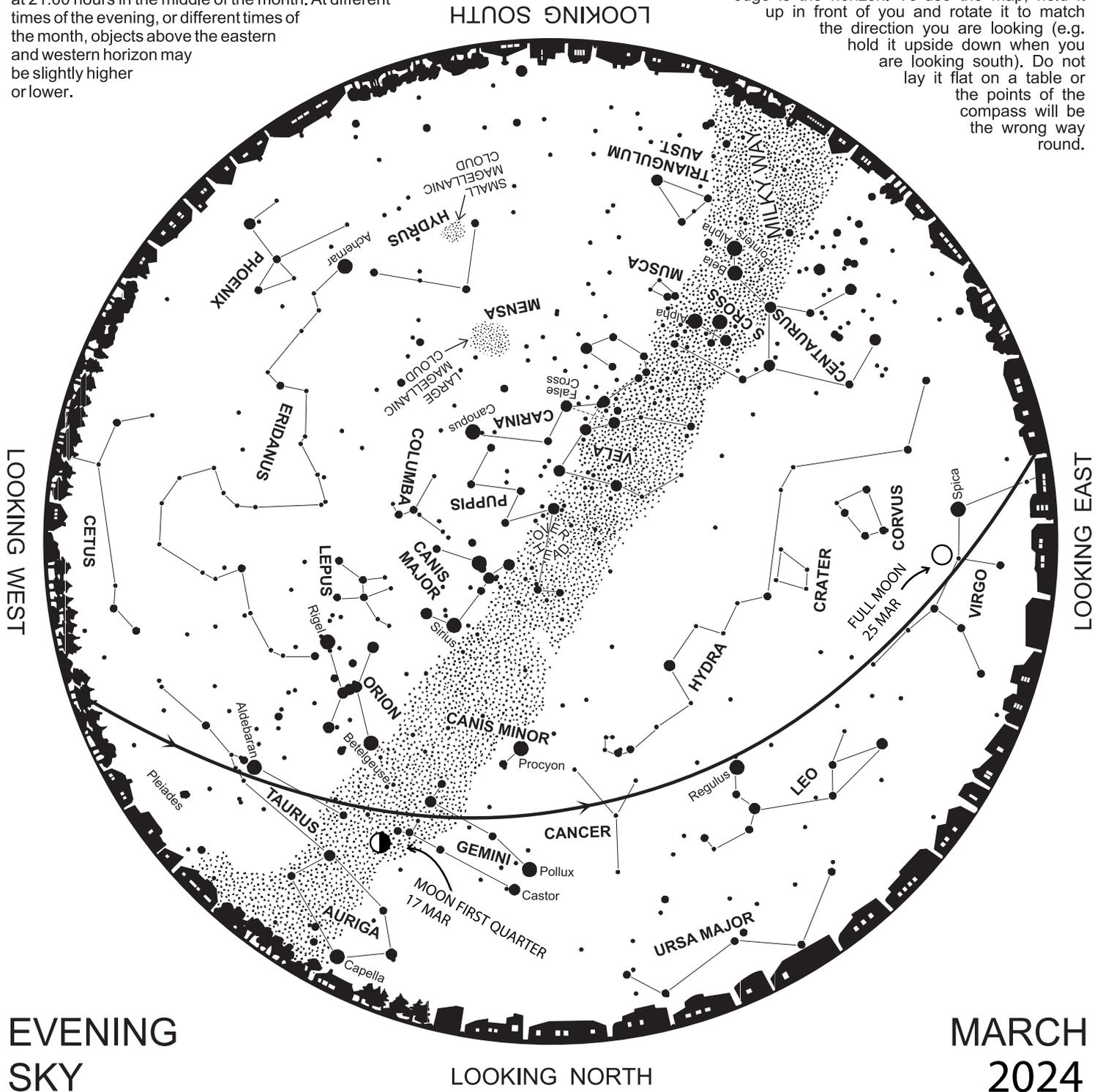
High in the south are the stars of the Southern Cross and the Pointers, with bright Canopus very low in the southwest. Achernar shines low in the southeast, with the stars of the 'Celestial Aviary' above it. In this part of the sky are the Toucan, the Phoenix, the Crane and the Peacock, assorted scientific 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 2024

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 Moon will reappear in the evening sky after 10 March (New Moon), with Full Moon ('Harvest Moon') on 25 March and March Equinox (roughly equal day and night) on 20 March (05:17 SAST). A penumbral lunar eclipse takes place on 24/25 March (only visible from the Americas). Throughout March, just after sunset, Jupiter is clearly visible towards the west within Aries (ram). Mars, Venus, and Saturn are visible near to the eastern horizon just before sunrise (with Venus and Saturn at their closest on 22 March).