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What's Up – May 2017

Sun and Moon

First Quarter occurs on the 03rd May at 04h47. Full Moon falls on the 10th of May, at 23h42. Last Quarter occurs on the 19th of May, at 02h33. The New Moon falls on the 25th of May at 21h44.

On the 26th of May at 03h20, the Moon will be at perigee (closest approach to Earth) at a distance of about 357 209 km. The Moon will be at apogee (furthest from the Earth) at a distance of about 406 210km on the 12th of May at 21h51.

Planetary and Other Events – Morning and Evening

Mercury and Venus are two bright and prominent morning “stars” this month. Mercury is at its best for the year around mid-month, when its rises about two hours before the Sun. Brilliant Venus is at its best, rising three hours before the Sun. Mars sets before nightfall and maybe glimpsed in the twilight early in the month. Jupiter is prominent in the evening sky, setting early in the morning. Saturn marginally visible at dusk, but well placed for observation from midnight to dawn. Uranus and Neptune are visible in the morning near the constellation of Pisces and Aquarius respectively.

Three meteor showers are active in May. The alpha Scorpiids are active between the 11th of April and the 12th of May, peaking on the 3rd of May. The eta Aquariids are active from the 21st April to the 12th May, peaking on the 5th of May. The chi Scorpiids are active from the 27th May until the 20th June, peaking on the 5th June.

The Scorpiids are minor showers with only around 5 meteors per hour expected at their peaks. The eta Aquariids meteor shower originates from dust grains ejected by Halley's Comet. The grains are distributed along the comet's orbit. Every time the Earth passes through the dust stream we experience the eta Aquariids meteor shower. To view the eta Aquariids, look towards the constellation Aquarius between 04:00 AM and 05:30 AM. At the peak, around 60 meteors per hour are expected.

The Evening Sky Stars

Orion can still be seen low in the WNW in the early evening, with bright Sirius (“The Dog Star”) faithfully following at his heels (or possibly chasing Lepus the Hare into the western twilight). Leo's upside down question mark should be easy to spot in the north, above the few stars in the Great Bear that creep above our horizon. A bit higher in the north is lonely Alpheratz, the brightest star in the Water Snake, while another and much brighter orange star, Arcturus, rises in the northeast. Arcturus' atypical motion and chemical composition mark it as a likely ‘immigrant’, a star from a smaller galaxy which long ago was “eaten” by our own Milky Way giant spiral. A bit higher in the sky is blue-white Spica, rising in the ENE in early evening. Spica appears to the naked eye as a single fairly bright star, but it is actually a system of 5 stars 260 light years away. The two brightest stars in the Spica system rotate around each other once every 4 days, and are respectively 13 400 and 1 700 times as bright as our own Sun. Paradoxically, most of the stars you can see without a telescope are brighter than our Sun, even though most stars in our neighbourhood are much dimmer than the Sun. This is because we can see bright stars even when they are far away, while most stars would be too dim to spot even at the distance of our closest stellar neighbours. Gliese 581, host star to two very interesting planets, is a typical example. This first of these two planets is about 5-6 times the Earth's mass and is located in the “habitable zone” where it is possible for liquid water oceans to exist on the planet's surface. The second of these is even smaller with a mass about

twice that of Earth, but closer in to its parent star than the former. At only 20 light years away, Gliese 581 is one of our near neighbours, but is 66 times too faint to see with the unaided eye.

Rising in the southeast are the stars of the Scorpion and the Wolf, with the stars of the Cross and the Pointers high in the SE. Look out for Antares, the bright red star in Scorpius. Well up in the SSW is Canopus, second brightest star in the sky and brightest in the great ship Argo, serenely sailing along the Milky Way, which runs from Scorpio in the SE to the Twins and the Unicorn in the NW. Accompanying the Argo are the Flying Fish and the Swordfish, with the Fly and the Bird of Paradise flying on ahead.

The Morning Sky Stars

Achernar, the “Little Horn”, shines brightly high in the SE before dawn, with the celestial river Eridanus flowing down toward the east. Assortments of birds occupy much of the southern sky, including (from west to east) the Bird of Paradise, the Peacock, the Crane, the Toucan and the Phoenix. The stars of the Pointers and the Cross are now low in the SW, with the Scorpion the Wolf and the Altar in the WSW and Sagittarius the Archer still halfway up in the west. The centre of our galaxy, with the most brilliant parts of the Milky Way, is well into the west before dawn, but the Great Rift (a dark band running through the northern Milky Way) is still easy to see. The brightest stars in the NW are Altair in the Eagle, Vega, very low in the NW in the Lyre, and Deneb, the tail of the Swan. The Swan, at the far northern end of our Milky Way on May mornings before dawn, is also known as the Northern Cross. The dim star at the southern end of the Northern Cross is Albireo, a beautiful gold-and-blue double star through a telescope. Albireo's two stars are far brighter than ours, but they would still be dim compared to Deneb. We don't know the exact distance to Deneb, and can't be sure just how bright it is, but the minimum estimate is 60 000 times the brightness of the Sun!

Just east of the point overhead is Fomalhaut, brightest star in the Southern Fish, with the dimmer stars of the Sea Goat and the Water Carrier just to the north. Low in the northeast are the stars of the Great Square of Pegasus, with the two fishes to the south and east, tied together by their tails. Rising in the E before dawn are the stars of the Whale.

But the most carefully watched star on May mornings in at least some parts of Southern Africa was Canopus, known to some as ‘Naka’ (the Horn). BaSotho men would camp in the mountains where they made fires and watched the early morning skies in the South. It was believed that the first person to see the star would be very prosperous that year, with a rich harvest and good luck to the end of his life. In olden times the chief would give the lucky man a heifer. The day after Naka was sighted was the time for the men with divining bones to examine their bones in still water, to predict the tribe's luck for the coming year. Among the Venda, the first person to see Nanga (Canopus) in the morning sky announced his discovery by climbing a hill and blowing a sable antelope horn (phalaphala). Among the Mapeli, the first person to see the star would begin ululating loudly enough to be heard in the next village, which would then join the noise making to warn other villages, each in turn until all knew Canopus had been seen.

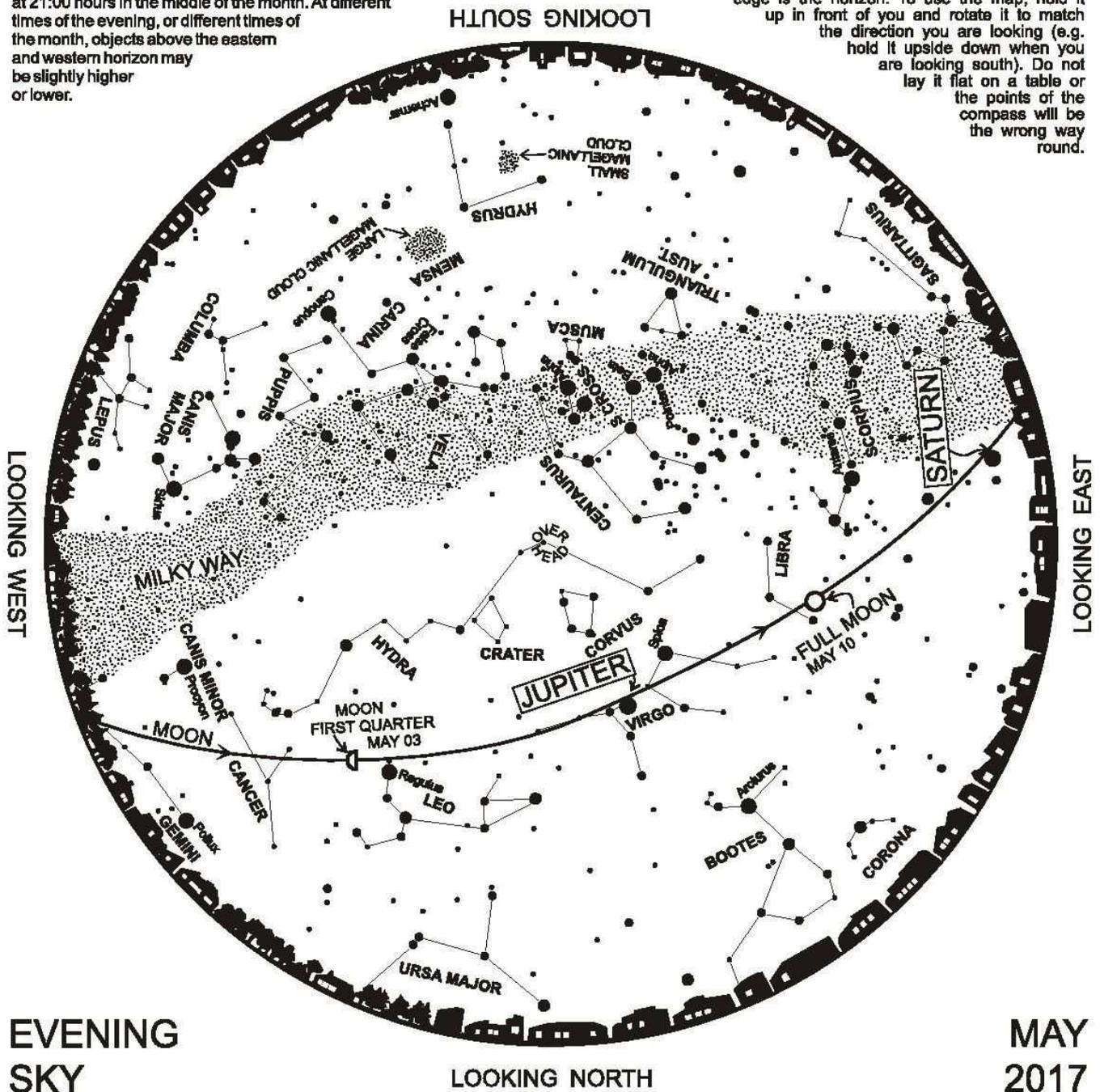
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The map shows the night sky visible above the Cape at 21:00 hours in the middle of the month. At different times of the evening, or different times of the month, objects above the eastern and western horizon may be slightly higher or lower.

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

MAY 2017

The well-known constellation of Orion, the Hunter, is low on the western horizon. Associated with summer skies, it will soon disappear from the evening sky. The line of three bright stars known as Orion's Belt, sets vertically and almost directly east. Above the belt is the brightest star in the night sky, Sirius, in Canis Major (Big Dog). The second brightest star, Canopus, lies not far off towards the south in Carina (Keel). It is a white supergiant 310 light-years away and about 71 times the size of our Sun. If Canopus was placed at the centre of the Solar System, it would extend 90% of the way to the orbit of Mercury. The bright star high in the

north, Regulus, lies at the top of a curve of stars known as the Sickle of Leo (Lion). To the east, Antares, the red supergiant star in the constellation of Scorpius (Scorpion) has made its appearance, announcing that winter is on its way.

Planet Jupiter shines brightly in Virgo (Maiden), close to the bright star Spica. By mid-month planet Saturn is visible above the eastern horizon, moving from Sagittarius (Archer) to Ophiuchus (Serpent Bearer).

The Moon is in the evening sky until 14 May and again after 26 May.

This map is given to those who attend the shows on Saturday at 13:00, Sunday at 13:00 and Tuesday at 20:00. It is copyright to the Planetarium.

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