

What's Up – August 2017

Sun and Moon

The First Quarter fell on the 30th of July, 2017 at 17h23. The Full Moon is on the 7th of August at 20h10. The Last Quarter will fall on the 15th of August at 03h15. The New Moon is on the 21st of August at 20h30. The First Quarter for a new cycle falls on the 29th of August at 10h13.

On the 18th of August at 15h19, the moon will be at perigee (closest to Earth) at a distance of 366 127 km. On the 2nd at 19h54 the moon will be at apogee (furthest from Earth) at a distance of about 405 024 km.

On the 30th of August at 13h23, the moon be at apogee at a distance of 405 305 km.

Planetary and Other Events – Morning and Evening

Mercury is prominent in the evening sky and can be observed just after sunset for the first half of this month. It drops closer to the Sun as the month progresses and reaches solar conjunction on the 26th of August. Venus still dominates and shines brightly in the morning sky. It can be observed before sunrise near the stars of Gemini and Cancer constellations. Mars reached solar conjunction on the 27th of July and will not be visible this month. Jupiter can be observed after sunset and serves the Evening Star. Jupiter can be observed near stars of the constellation, Virgo. Saturn, near the stars of Ophiuchus can be observed from dusk until around midnight. Uranus near the stars of Pisces can be best observed after midnight this month. Neptune can be located near the stars of the constellation, Aquarius, rises after the evening twilight this month.

Three meteor showers are active in August: the Piscis Australids, the Southern delta Aquariids and the alpha Capricornids. The Piscis Australids are active from the 19th July to the 17th August, peaking on the 28th July. To view the Piscis Australids find a dark spot and look east near the constellation of Piscis Austrinus for the Piscis Australids radiant. The best time to view the shower is from around 21:30 PM until 05:00 AM when they'll be in the west. The Southern delta Aquariids meteor shower is active from the 21st July to 29th August, peaking on the 29th July. To view the Southern delta Aquariids find a dark spot and look east near the constellation of Aquarius for the Southern delta Aquariids radiant. The best time to view the shower is from around 21:30 PM until 05:00 AM when they'll be in the west. The alpha Capricornids meteor shower is active from the 15th July to the 25th August peaking on the 30th July. To view the shower look east near the constellation of Capricornus for the alpha Capricornids radiant. The best time to view the alpha Capricornids is from around 20:00 PM until 04:00 AM when they'll be in the west.

The Evening Sky Stars

In the north, orange Arcturus shines brightly in the evening sky, with the half circle of the Northern Crown to the right, and bright white Vega rising low in the north east. Higher in the ENE, tangled in the northern Milky Way, is Aquila the Eagle with its bright star Altair. Vega and Altair are relatively nearby stars, but like most of the stars visible to the naked eye would appear much brighter than the Sun if they and the Sun were at the same distance.

To the south of Arcturus, high in the NW, shines blue-white Spica, the brightest star in Virgo. Spica actually consists of two stars 260 light years away from us, orbiting each other once every 4 days. Both are much hotter and brighter than the Sun. The brightest of the pair is 11 times as massive as our Sun and 13 000 times as bright, the other 7 times as massive as our sun and 'only' 1 700 times as bright.

Red Antares and the stars of the Scorpion are almost overhead in the early evening, and you should easily be able to see the shape of the Scorpion – this is one of the few constellations which really resemble the creature it's named after. Antares is about 600 light years away, and radiates about 10 000 times as much energy as the Sun at wavelengths perceived by the eye. But Antares has a surface temperature of only 3

300 degrees (compared to 5 500 for the Sun), and radiates most of its energy as infrared radiation. The total energy output of Antares is about 65 000 times as much as the Sun, and this 'red supergiant' is so large that if it were placed at the centre of our own solar system, the orbit of Mars would be less than halfway from the centre of Antares to its swollen surface.

High in the south are the Giraffes of Vanda starlore (the Pointers – Alpha and Beta Centauri – and the stars of the Southern Cross). For observers away from city lights, the winter Milky Way is spectacular on August evenings when the moon doesn't interfere. The centre of our Galaxy is nearly overhead, and it is easy to see the 'pancake' shape of our wheel of hundreds of billions of suns, complete with the bulge near the middle. For the Indian tribes of South America, the dark patches in the Milky Way were also constellations. We know today that such dark areas as the Coalsack (near the Southern Cross) and the Great Rift are dense dust clouds where new stars are forming.

The Morning Sky Stars

Orion is once again prominent in the eastern sky, raising his club to swat the pesky Bull that forever charges at him. Orion's two dogs are with him as well, with Procyon (brightest star in the Small Dog) lower in the east and Sirius (brightest star in the Large Dog) to the southeast of Orion. It's unclear, however, whether the dogs are paying attention to Orion's problems or to the hare which is hopping by between Orion and the Large Dog.

High in the southeast shines Canopus, second brightest star in the sky and brightest star in the huge ancient constellation of Argo, the great exploring ship that sought the Golden Fleece. Today it's split up into several smaller constellations such as the Sails and the Keel. If the Argo is headed to or from Cape Town, it's only logical that Table Mountain is in view, and it is just possible (on a dark night far from city lights) to see the dim stars of the Table Mountain (Mons Mensae) constellation in the far south. Thanks to Nicolas de Lacaille, who added more than a dozen constellations to the southern sky as he observed from Cape Town, Table Mountain is the only geographical feature on Earth to have its own place in the stars. You'll probably find it easier to see the Tablecloth, represented by the Large Magellanic Cloud. The LMC, as astronomers know it, is a satellite galaxy of our own Milky Way, and a mere 180 000 light years away. It's the closest galaxy to our own which is not actually being 'digested'. Our Milky Way is cannibalizing two small galaxies at the moment, and neither is fully separate anymore. Part of the LMC (which looks to the eye like a stray patch of the Milky Way) slops over into the nearby constellation of the Swordfish, and the remainder of the southern sky is taken up with an odd collection of birds, water creatures and scientific instruments such as the Peacock, the Crane, the Water Snake, and the Rhomboidal Net. The instruments, like Table Mountain, owe their place in the sky to Lacaille's mapping of the southern sky in the mid-eighteenth century.

Flowing from the southwest corner of Orion is the long winding constellation of Eridanus the celestial river, with bright Achernar near its 'mouth' high in the southwest. Canopus was 'Naka' (the 'Horn' star), in the Sotho calendar, while Achernar was 'senakane', the 'little horn'. To the west of Eridanus is a rather watery part of the sky including the Whale, the Fishes, the Water Bearer and the Sea Goat. Fomalhaut (meaning 'mouth of the southern fish') is the brightest star in the western sky, but almost all the bright stars in this month's morning sky are in the east. It's relatively nearby (only 25 light years away) and a mere 200 million years old, making it just a baby compared to the Sun. A huge disk of icy dust, four times the diameter of our solar system, surrounds Fomalhaut. There is a clear area around the star itself which may have been caused by the formation of a system of planets, but the actual planets elude detection so far. It's quite likely that there are planets.

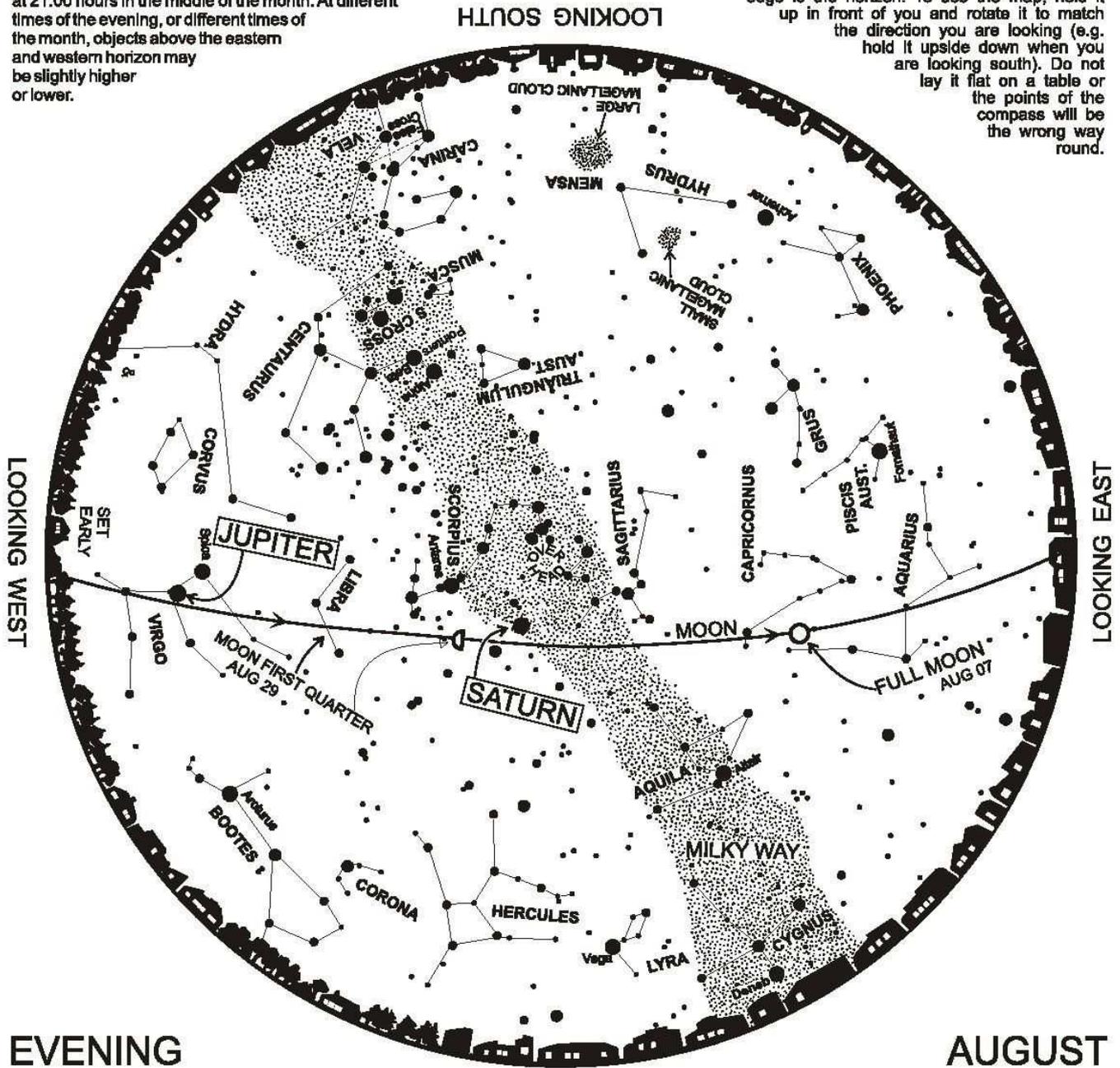


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The map shows the night sky visible above the Cape at 21:00 hours in the middle of the month. At different times of the evening, or different times of the month, objects above the eastern and western horizon may be slightly higher or lower.

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

AUGUST 2017

Looking directly overhead in the direction of Scorpius (Scorpion) and Sagittarius (Archer) we look towards the centre of the Milky Way Galaxy, our home galaxy. Strong evidence supports the existence of a super-massive black hole at the Galactic Centre. Our Solar System lies approximately two thirds of the way, about 25 000 to 28 000 light years, away from the centre. The closest star to the Solar System, Alpha Centauri, is "only" four light years away. It is one of the Pointers, two bright stars "pointing" to the constellation of Crux (Southern Cross) lower down.

Planet Saturn in Ophiuchus (Serpent Bearer) can be seen a few degrees to the north of Antares, the red supergiant star in Scorpius. Lower down towards the west in Virgo (Maiden), planet Jupiter serves as the Evening Star. Although planet Venus is in the daytime sky, it is bright enough to be seen with the naked eye using the Moon as marker. At noon on the 19th it is 3° above and slightly to the right of the Moon. The Moon is in the evening sky until 10 August and again from 23 August. A partial eclipse of the Moon is visible from Cape Town on the evening of 7 August with maximum at 20h20.

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.

