

What's Up – June 2016

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Sun and Moon

The New Moon is on the 5th of June, at 05h00. The First Quarter falls on the 12th of June, at 10h10. The Full Moon occurs on the 20th of June at 13h02 and the Last Quarter falls on the 27th of June at 20h19.

On the 15th of June at 14h00, the Moon will be at apogee (furthest from Earth) at a distance of about 405 000 km. The Moon will be at perigee (closest approach to Earth) at a distance of about 361 100 km on the 3rd of June at 12h55

The Winter Solstice is on the 21st of June at 00h35

Planetary and Other Events – Morning and Evening

Mercury is visible in the morning sky before sunrise and reaches greatest elongation on the 5th of June. At sunset, Mars, Jupiter and Saturn are visible, with Venus becoming marginally visible in the early evening at the month-end. The three planets (Mars, Jupiter and Saturn) will brighten the early evening sky. Saturn is visible through out the night and reaches opposition on the 3rd of June (it will be closest to the Earth). This therefore means Saturn will be at its brightest and this is the best time to observe it through the telescope. Mars reached opposition on the 22nd of May and this month is still ideal opportunity to observe the telescopic details of red planet and its disk. By midnight, Mars, Jupiter, Saturn and Neptune can be seen, although Jupiter will have set by midnight at month end. Uranus is visible in the pre dawn skies but remember one needs a telescope to locate and observe Uranus and Neptune.

Two meteor showers are active in June, the theta-Ophiuchids and the June Lyrids. Observing prospects for both these showers are good. The theta-Ophiuchids are active from the 8th June to the 16th June peaking on the 13th June. They are best viewed between 20:00 PM and 05:30 AM looking between the constellations of Sagittarius, Scorpius and Ophiuchus. The June Lyrids are active from the 11th June to the 21st of June, peaking on the 16th. They are best viewed between 23:30 PM and 02:00 AM low down between NW and NE. They will appear to come from the general direction of the constellation Lyra (low in the North), but the longest trails will be visible about ¼ of the sky from here, either NW or NE, or higher in the North

The Evening Sky Stars

Leo the Lion's upside down question mark should be easy to spot in the NW early in the evening, with the right triangle of the Lion's hindquarters and tail following in the NNW. Bright orange Arcturus guards the Great Bear (invisible from the Cape except for its feet) from the NE, with the dimmer semicircle of the Northern Crown a bit to the right for an observer looking N. Snaking its way across the sky above the constellations of the Lion, the Virgin and the Crow is the great water monster Hydra, with lonely Alpheratz at its heart fairly high in the NW at evening's beginning. Alpheratz is an orange giant star, 175 light years away and 400 times as bright as our Sun. If Alpheratz were at the centre of our solar system, it would extend halfway to the orbit of Mercury, and we would be toast. Arcturus is a similar star, also an orange giant, which appears brighter in our skies because it's only 37 light years away – but is really only half as bright as Alpheratz. It's always a good idea to remember that the universe is NOT two-dimensional, but that

stars are at varying distances from us!

By month's end the Milky Way follows a path from west to ESE across the southern sky, with the bright stars Sirius and Canopus nearby in the W and SW, and the Large Dog, the great ship Argo, the Cross, the Fly, the Centaur, the Wolf, and the Scorpion tangled in the Milky Way itself. By late June the centre of our Milky Way has begun to rise even in early evening, and by late evening the winter Milky Way is at its most majestic, with the centre of the galaxy passing nearly overhead. Notice the way the brighter stars are mostly in a belt almost, but not quite, coinciding with the Milky Way. This is 'Gould's Belt', showing where young stars in our part of the galaxy have been forming in the last few million years. From outside, our Milky Way galaxy would look like a glowing pancake with a lump in the middle, but the pancake would not be perfectly flat – some parts would appear slightly tilted or warped.

Below the Milky Way are the bright stars Canopus in the SW and Achernar (very low in the SSW), the 'horn' and 'little horn' stars of African legend.

The Morning Sky Stars

By morning, the Milky Way has nearly set, running near the horizon from north around through the west into the south. Deneb shines in the NW predawn skies of early June, marking the top of the Northern Cross, with bright Vega near the northwestern horizon. In the WNW, Altair is the brightest of the stars of Aquila the Eagle, flying southward through the Milky Way. Low in the WSW and SW are the stars of the Archer and the Scorpion, with the stars of the Pointers and the Cross low in the SSW and S as seen from the Cape. From northern South Africa they will typically be invisible.

Almost overhead in the predawn sky at the beginning of the month is the Southern Fish with its brightish star Fomalhaut ('mouth of the fish'), the 17th brightest star in the sky. It's only 25 light years away and about 16 times brighter than our sun. Around it is a celestial doughnut, a giant disk of icy dust four times the diameter of our solar system. But the centre, around the star itself, is largely free of this material, possibly because planet formation has swept this area clean.

To the south of Fomalhaut are the stars of the Crane, with bright Achernar a bit further southeast. Canopus rises low in the SE before the Sun in early June, and by late June, bright Sirius is visible low in the ESE as well, while Orion can be seen low in the east before sunrise.

High in the northern sky are the stars of the Great Square of Pegasus. The Fishes are above and to the right of the Square (tied together by their tails). Beyond the Fish, high in the NNE sky, is the Whale. With the Water Bearer and the Sea Goat to the SW of Pegasus, and the Southern Fish nearly overhead, this is a fairly waterlogged part of the sky!

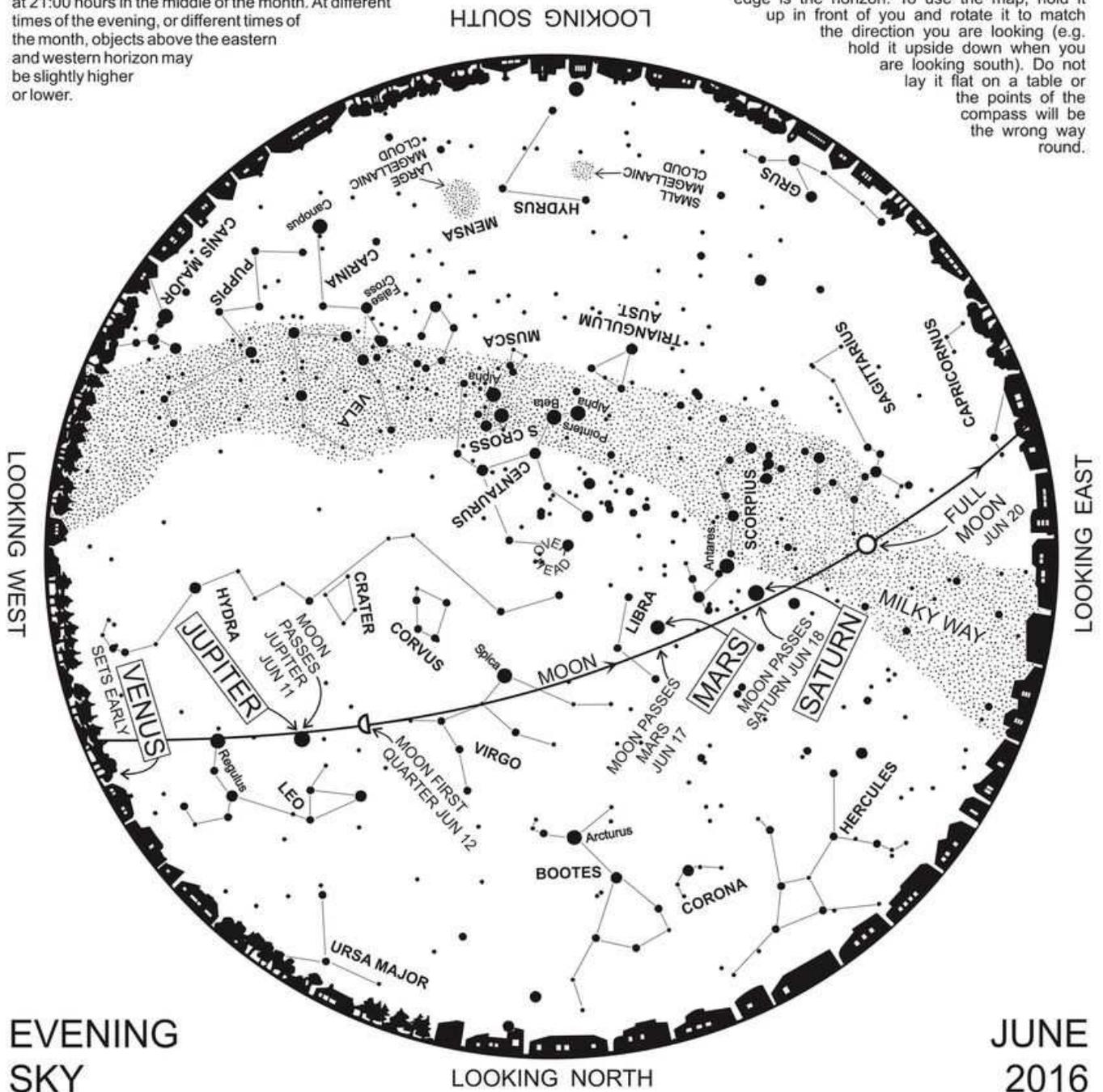
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The map shows the night sky visible above the Cape at 21:00 hours in the middle of the month. At different times of the evening, or different times of the month, objects above the eastern and western horizon may be slightly higher or lower.

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

JUNE
 2016

Halfway above the northern horizon in the constellation of Boötes, the Herdsman, we find the bright star, Arcturus, 37 light years away. It is the 4th brightest star in the night sky, classified as an orange giant which shines 113 times more brightly than our Sun and has 25 times the Sun's diameter. The 3rd brightest star is Alpha Centauri, one of the Pointers close to Crux, the Southern Cross. Alpha Centauri is a system consisting of three stars just over 4 light years away from us. The 2nd brightest star, Canopus in Carina, the Keel, can be seen low above the south-western horizon. The brightest star, Sirius in Canis Major, the Big

Dog, sets before 9pm. As Earth orbits around the Sun, year after year the Sun appears to move along the same path against the background stars. The planets can always be found somewhere along this path, called the ecliptic, as they all orbit the Sun in more-or-less the same plane. Jupiter can be seen with the stars of Leo, the Lion in the background, Mars is in Libra, the Scales, and Saturn in Ophiuchus, the Serpent Bearer. The Moon is in the early evening sky from 5 June until 24 June. Winter solstice occurs on 21 June.

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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