

What's Up – April 2014

Sun and Moon

LAST QUARTER (half moon in the morning sky) falls on the 22nd. NEW MOON is on the 29th at 06:14 AM. FIRST QUARTER (half moon in the evening sky) falls on the 7th. FULL MOON occurs on the 15th at 07:42 PM.

New moon is on 29th April, 08:14 SAST which may be visible in the Pacific with optical aid from south western North America and Central America. April 30th visibility may be worldwide except for southern New Zealand. **First possible sighting in South Africa will be 30th April.**

On the 8th at 16:53 PM the Moon will be at apogee (furthest from Earth) at a distance of about 404 501 km. The Moon will be at perigee (closest approach to Earth) at a distance of about 369764 km on the 23rd at 02:28 AM.

Planetary and Other Events – Morning and Evening

Mercury is best visible in the early morning during the first half of the month. Venus shines as a brilliant morning star throughout the whole month. Mars and Saturn are visible for most of the night throughout the entire month. Jupiter is visible throughout the month seen above the western horizon until after 22:00 PM in the middle of the month.

Uranus and Neptune are both too faint to observe with the naked eye, but Neptune may be seen using binoculars or a small telescope just above Venus in the later half of the month. Uranus is mostly unobservable during the month due to its proximity to the Sun. However, by month's end it will begin to be visible just below setting Venus in the early morning.

Four meteor showers are active in April, the delta-Pavonids, April Lyrids, pi Puppids and the eta Aquarids. Observing prospects for the April Lyrids are poor due to the full Moon on the 15th and relatively high dec. The delta-Pavonids are active from the 11th March to the 16th April peaking on the 6th April. They are best viewed between 02:00 AM and 04:30 AM looking towards the constellation of Pavo (the Peacock). The eta Aquarids are active from the 21st April to the 12th of May, peaking on the 5th May. They are best viewed between 04:00 AM and 05:30 AM looking towards the constellation of Aquarius.

The Evening Sky Stars

The bright stars near the summer Milky Way are still prominent in the sky in April evenings, but are further to the west than in March. Stars rise about 2 hours earlier and set about 2 hours earlier than they did on the same day of the previous month — our point of view keeps changing as Earth goes around the Sun. The Milky Way gets more and more impressive as the night progresses, as the centre of our galaxy rises in the east and eventually passes overhead before dawn.

Orion can still be seen in the NW in early evening, with Taurus the Bull charging at him from low in the NW. Since Orion is upside down for us in the southern hemisphere, we see Sirius (brightest star in the sky and the eye of Orion's Large Dog) 'above' Orion, with the dim stars of the Hare just above Orion's feet. Between Orion and the stars of Leo the Lion (rising in the NE in early evening) are the dim stars of the Unicorn and the Crab, with Procyon (brightest star in Orion's Small Dog) between them, while below Procyon are the 'Twin' stars Castor and Pollux low in the NNW.

In the NNE at the end of evening twilight is the upside-down question mark of Leo the Lion, representing the Lion's head and mane. Brightest of Leo's stars is Regulus, the 'prince' and one of the four 'royal stars', Second-brightest among Leo's stars is Denebola ('tail of the lion'), well to the east (right, for an observer facing north) of the 'question mark'. According to Egyptian legend, the sun was in Leo immediately after the Creation, near Denebola. On a more scientific note, Denebola is about 36 light years away, and 12 times as bright as our sun. The dust clouds around this star suggest that planets may have formed around it, but none have been detected yet.

Blue-white Spica, brightest star in Virgo, is often shown as an ear of wheat held by a young woman, who in Babylonian mythology was queen of the stars and the lover of the god of grain. Above her in the eastern sky fly the four stars of the Crow. The head of the water snake (Hydra) is a small group of stars between Leo and Orion's Big Dog. The rest of the snake winds its way down toward the Crow, with its brightest star, Alphard, heart of the serpent, high in the northwest. Above and to the left of the Crow, for an observer facing east, is the Cup. Alphard is an Arabic name meaning the 'solitary one', as there are no other bright stars near it. At about 40 times the diameter of the sun and 400 times as bright, Alphard is one of the 'bright giants' in our neighbourhood. But our 'neighbourhood' is rather large. Alphard is 11 million times as far away from us as our own sun – so it looks a lot dimmer to us!

To the south of Sirius, and nearly overhead, is Canopus, second brightest star in the sky, lighting the keel of the great ship Argo. If they were at the same distance, Canopus would appear far brighter than Sirius. Canopus is 15000 times as luminous as the sun, a rare yellow-white supergiant 313 light years away. If placed at the center of our solar system, its surface would be three quarters of the distance from the centre to the orbit of Mercury, Earth would be global toast, and so would we.

Rising in the southeast in April evenings are the stars of the Southern Cross and the Pointers (Alpha and Beta Centauri). The Alpha Centauri seen by the eye as a single bright star is easily separated by a small telescope into a brilliant pair of yellow stars, Alpha Centauri A and B. The brighter one is about half again as bright as our sun, the fainter about half as bright as the sun. Separated by about 23 times the distance from the Earth to the sun, they take 80 years to orbit each other. For many years it was believed that these were the two nearest stars to our own sun. But a third star also appears to be a member of the Alpha Centauri system, and is slightly closer to us (4.22 vs.

4.35 light years). This star, 'Proxima Centauri', was discovered in 1915 by Robert Innes of the Union Observatory in Johannesburg. It's about 1/7 of the mass and diameter of the sun, and so dim that even as seen from Alpha Centauri A and B, it would be only dimly visible to the naked eye. If Proxima is in orbit around stars A and B, it probably takes about 500 000 years to go around once.

Achernar (the Little Horn) shines in the southwest in early evening, with the Magellanic Clouds nearby. These dimly glowing patches (actually nearby galaxies) were seen by some African peoples as hunting grounds for the gods, and their visibility was used to predict the weather. To the extent this worked, it probably related to the amount of dust in the air.

The Morning Sky Stars

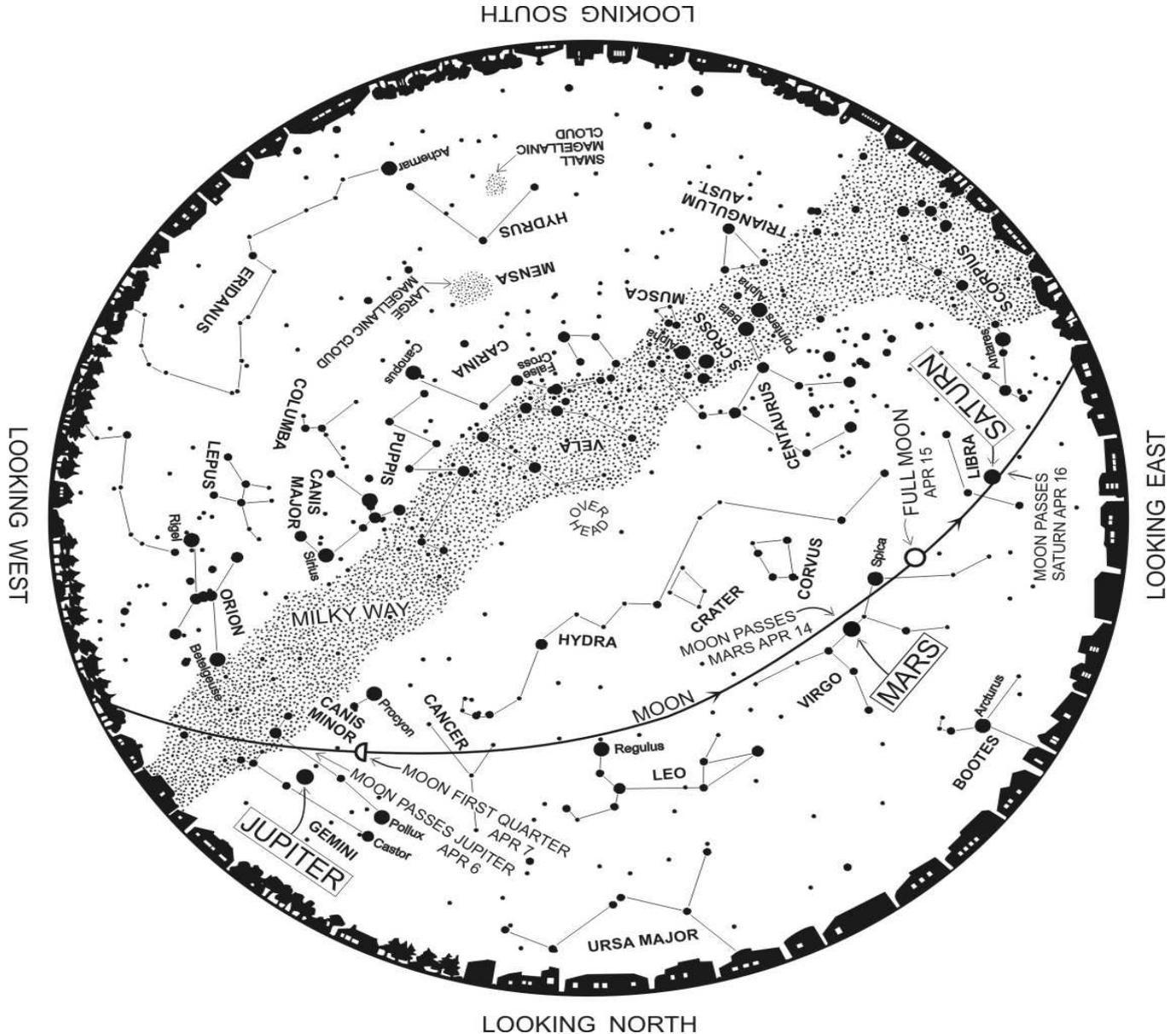
Achernar shines brightly in the SE before dawn, with the celestial river Eridanus flowing down to the SE horizon. The Crane, the Phoenix, the Toucan, the Bird of Paradise and the Peacock are all in neighbouring parts of the southern sky, while the Sea Serpent is also in the vicinity. The stars of the Pointers and the Cross are still visible low in the SW, with the stars of the Altar, the Level and the Wolf lying between the Pointers and the Scorpion.

Almost overhead in the predawn sky at the beginning of the month is the centre of our Milky Way galaxy, with the constellations of the Archer and the Scorpion. The dark patches in the Milky Way are dust clouds that block the light of the stars behind them. It's in the heart of dark clouds like these that new stars are constantly being born. The Khoikhoi and San said the Milky Way came into being when a strong-willed girl became angry and grabbed the roasting roots (of which her mum did not want to give her any) from the fire and threw the ashes and roots into the sky. The red and white roots now glow as red and white stars and the ashes are the Milky Way.

Nicola Loaring 30 March 2014

The map shows the night sky visible above Cape Town 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.



April 2014

Evening sky in APRIL 2014

Every evening Taurus (Bull) moves towards the western horizon, and by month end it has set. In close pursuit are Orion, the Hunter, and his two dogs, Canis Major (Big Dog) and Canis Minor (Little Dog). The three bright stars of Orion's Belt, now almost perpendicular to the horizon, make it easy to identify the constellation of the Hunter. Below his belt, his dagger contains the Great Orion Nebula, birthplace of new stars. On one shoulder we find the star Betelgeuse, a red supergiant, and

diagonally across on his ankle the blue supergiant, Rigel. The Southern Cross (Crux) and Pointers (Alpha and Beta Centauri) appear high in the south-eastern sky. Leo (Lion) above the northern horizon appears upside down, as do most constellation viewed from the Southern Hemisphere. A sickle of stars represents Leo's head and the bright star Regulus ("the little king" in Latin), its heart.

The Moon is in the early evening sky from 4 April until 18 April. It appears close to planet Jupiter in Gemini (Twins) on 6 April. On 14 April it is nearest to Earth and can be seen close to planet Mars in Virgo (Maiden). On 16 April it appears close to planet Saturn in Libra (Scales).

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