SOUTH AFRICAN ASTRONOMICAL OBSERVATORY

P O BOX 9
OBSERVATORY
SOUTH AFRICA
7935

TEL: (021) 447-0025
FAX: (021) 447-3639
INT. CODE: +27 21

INTERNET:
http://www.saao.ac.za

What's Up – November 2020

What's Up – November
Sun and Moon
The last quarter falls on the 8th of November at 15h46 and the new moon occurs on the 15th of November at 07h07. The first quarter moon falls on the 22nd of November 06h45 and the full moon occurs on the 30th of November at 11h30.

The Moon will be at perigee (closest approach to the Earth) at a distance of 357 800 km on the 14th of November at 13h48. On the 27th of November at 13h48, the Moon will be at apogee (furthest from Earth) at a distance of 405 800 km.

Planetary and Other Events – Morning and Evening

Mercury, the smallest planet can be observed near the stars of the constellation, Libra, very low in the east. Mercury will be near the Moon on the 13th of November. Venus shines brightly as a Morning Star and is located near the stars of the constellation, Virgo at the beginning of the month and is located near the stars of the constellation Libra by the very end of the month. Venus is near the moon on the 12th of November. Mars, Jupiter and Saturn can be easily observed in the evening sky. Mars, the red planet, can be observed near the stars of the constellation, Pisces. Mars will be near the Moon on the 26th of November. The two big gas giant planets, Jupiter and Saturn, are located the near the stars of the constellation, Sagittarius. Jupiter will be near the dwarf planet Pluto on the 12th of November. Do miss out on the beautiful and spectacular configuration of the crescent moon, Saturn, Jupiter on the evening of the 19th of November. Uranus reached opposition on the 31st of October and is well positioned for observation and can be located near the stars of the constellation, Cetus. Uranus will be near the moon on the 27th of November. Neptune, the blue gas planet, can observed near the stars of the constellation, Aquarius. Neptune will be near the Moon on the 23rd of November.

Several meteor showers are visible in November: the Orionids, the Southern and Northern Taurids, the Leonids and the alpha Monocerotids. The Orionids, which peaked in October, are active until the 7th November. The Northern and Southern Taurids are active from the 1st October until the 25th November, with peak rates on the 12th (N) and 5th (S) November respectively. The Leonids are active from the 12th – 21st November, peaking on the 17th November. The alpha Monocerotids are active from the 15th – 25th November peaking on the 21st.

To observe the alpha Monocerotids, look east north-east near the constellation of Monoceros for the alpha Monocerotids radiant. The best time to view the alpha Monocerotids is from around 23:00 PM to dawn. They are very fast with some quite bright meteors. You should be able to see around 5-50 streaks an hour during the peak on the night of the 21st/22nd. To view the Taurids, look towards the constellation Taurus for the radiant. The best time to view the showers is from 21:30 PM to 03:30 AM on the nights of the 5th/6th (Southern) and 12th/13th (Northern) November. They are slow moving meteor showers and at their peaks, around 7 meteors per hour are predicted. To view the Leonids, look North-East towards the constellation Leo for the Leonids radiant (area on the sky from which the meteors seem to originate from). The best time to view the Leonids shower is from around 03:00 AM to 04:15 AM. Around 5-10 streaks per hour are expected at the peak of the shower on the night of the 17/18th November.

The Evening Sky Stars
The stars of the Scorpion can still be glimpsed at the beginning of the month, low in the west after sunset, but only the tail is left by the end of November. Low in the northwest, the bright stars Vega and Deneb are likewise still visible on the 1st, but gone by the 30th. November is a good month to look for the Great Square of Pegasus, visible moderately low in the northern evening sky all month. Below and to the right of the lower right hand corner of the square is a double row of stars representing Andromeda (chained to a rock to appease a sea monster), and a dim fuzzy glow visible only on dark nights away from city lights. This is the Andromeda Galaxy, 2.5 million light years away and the most distant object easily visible to the unaided eye. Like our own Milky Way Galaxy, it's a huge pinwheel of hundreds of thousands of millions of suns, more than a hundred thousand light years across. As galaxies go, it's one of our near neighbours, and the largest in our local cluster. (Our Milky Way galaxy is the second largest.)

The most distant galaxies we can see are more than 12 thousand million light years away.
The bright star Altair still shines brightly among the stars of the Eagle in the northwest, and the bright stars of the Crane and the Southern Fish are almost overhead in early evening. The foggy glow of the Large and Small Magellanic Clouds can easily be seen in the south (on dark nights away from city lights), with bright Achernar quite near the Small Cloud. Canopus (second brightest star in the sky) is rising in the southeast in early evening, while the Southern Cross and the Pointers are sinking lower in the southwest. The Milky Way is less well placed in November evenings than earlier in the year, low in the western and southern sky. Rising in the east on November evenings are the stars of summer, with the bright stars of Taurus the Bull, Orion the Hunter and his dogs glowing brightly in the east. The brightest star in our sky is Sirius, the 'eye' of the Large Dog, and it often twinkles spectacularly near the horizon, sometimes appearing to flash red and green and producing UFO reports from members of the public who don't watch the sky often.

The Morning Sky Stars
Regulus can be spotted at the end of Leo the Lion in the NE before dawn, while low in the north are the stars of the Twins, with brilliant Capella just above the horizon in the NNW. A bit higher in the north (above the twins) is Procyon, the brightest star in Orion's smaller hunting dog. Orion himself is to the west of Procyon (left if you are facing north), holding up his club and lion skin while the Bull charges him from the west. Since Orion, like the other constellations invented in the northern hemisphere, is upside down in our skies, the Large Dog naturally runs above his feet. The stars of the Large Dog include Sirius, which appears brighter to the eye than any other star in our sky. Only 4 stellar systems are closer to the Sun than Sirius (8.6 light years), and it is by far the brightest of the stars in our neighbourhood, giving off more than 20 times as much light as our own Sun. The overwhelming majority of the stars nearest to our Sun are so dim that a telescope is needed to see them despite their closeness. Most of the stars we see in the sky with the naked eye are the rare extremely bright stars that can be seen at great distances.

High in the south are the bright stars of the great ship Argo. Brightest of these is Canopus, second brightest star in Earth's sky and nearly overhead. Canopus is 15000 times as bright as our own sun, a rare supergiant which is the brightest star within 700 light years of us. If Canopus were at the same distance as Sirius it would be rival the first quarter moon in brightness, and the southern hemisphere sky would seldom be fully dark! If this supergiant star were in the sun's place at the centre of our solar system, its surface would lie three quarters of the way out to Mercury's orbit, and a planet with an earth like temperature would have to be three times as far out as Pluto.

Achernar and the Small Magellanic Cloud are sinking into the southwest in the sky before sunrise, while the Cross and the Pointers (the two brightest stars in Centaurus) are rising in the southeast. Just above the Southern Cross and the Housefly are the stars of the great ship Argo as it sails along the Milky Way, accompanied by the dim stars of the Flying Fish. The Milky Way stretches across the sky from the southeast to the northwest, passing almost overhead, but the northern portion is fairly dim and rather smooth looking, while the southern part is much brighter with obvious dark patches. When we look toward the Keel of Argo, we look directly along our own spiral arm in our galaxy, and the greater abundance of stars in that direction makes this a bright patch in the Milky Way. To the south and east of the Keel we look inward toward the richer star fields of the inner galaxy; to the north and west we look through the less impressive outer regions of the galaxy, where there are fewer stars.

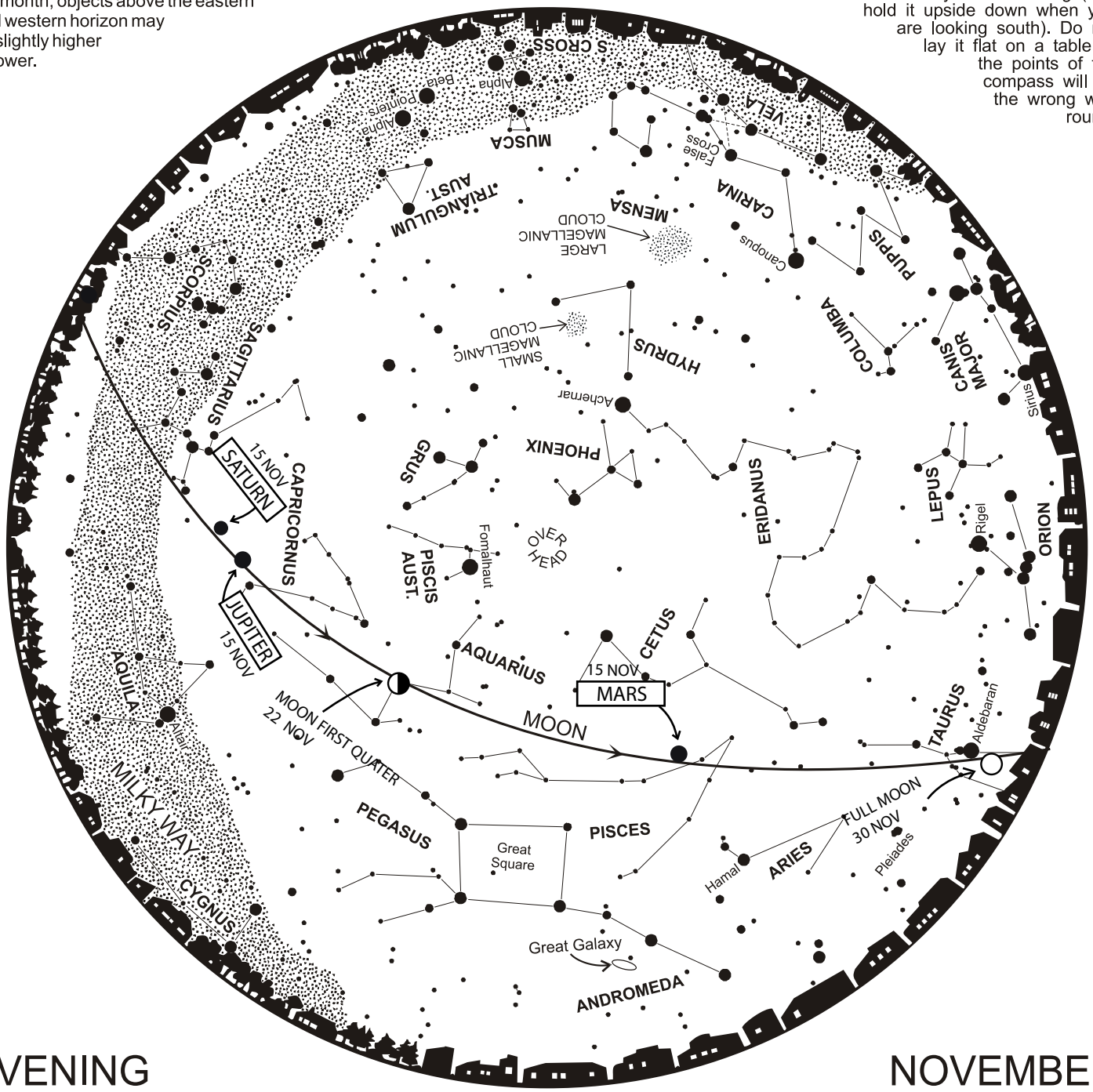
Sivuyile Manxoyi (Sivuyile @saao.ac.za)

01 November 2020

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

NOVEMBER 2020

As Scorpius (scorpion) makes its final appearance low in the west, look to the east to welcome back the constellation Orion as it reappears in our evening skies. In Greek mythology, the mighty hunter Orion bragged he could defeat all animals. Not impressed, Gaia (goddess of Earth) sent the wily Scorpius to battle him who, in the ensuing battle, eventually defeated Orion. Both constellations were honored with a place in the night skies, but on opposite sides of our celestial sphere – forever chasing each other across the night skies.

Towards the north, search for the Great Square of stars belonging to Pegasus (winged horse). One of our neighboring galaxies, Andromeda, lies just below the stars in the horse's back leg (requires dark conditions). November is also the ideal time to observe three naked-eye galaxies in one sitting, including the Small and Large Magellanic Clouds in the south.

The Moon will be in our evening skies until 5 November, returning on 16 November with Full Moon on 30 November. Venus dazzles as a bright morning object, and the reddish Mars appears for most of the evening. Jupiter and Saturn can be seen in the early evening, appearing attractively close to the crescent Moon on the 19 November.

25 Queen Victoria Street, Cape Town
Postal: PO Box 61, CAPE TOWN, 8000
Tel: 021 481 3900, Fax: 021 481 3900

www.iziko.org.za

iziko museums of South Africa