Dundee Astronomical Society

Sky Notes for March 2019

Sky Map for 15th March 22:00

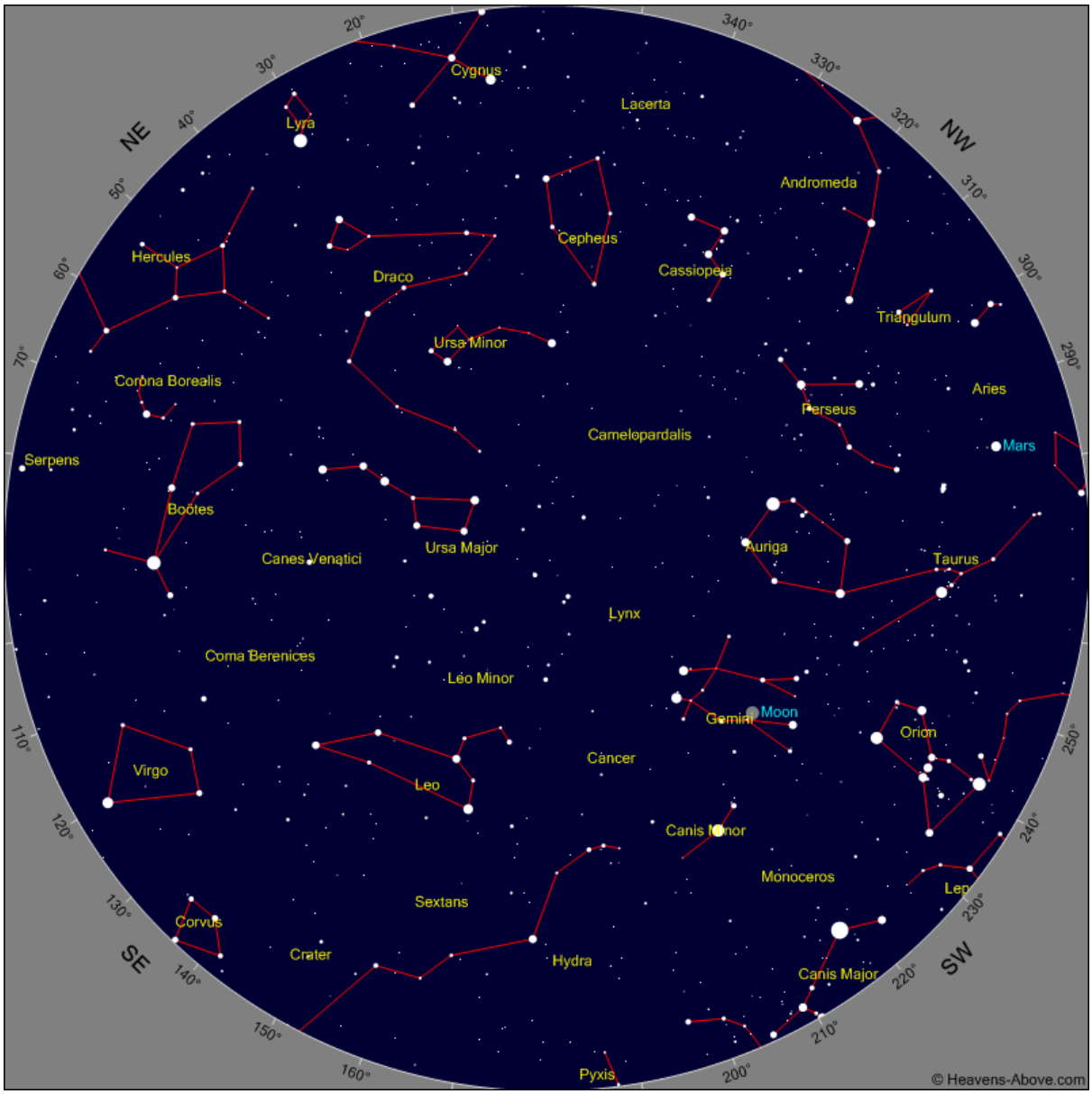
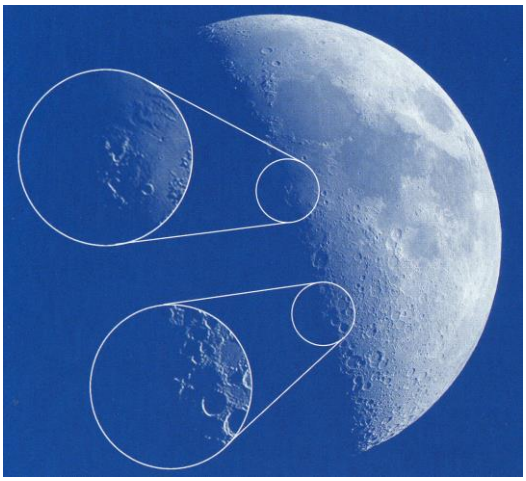


Illustration Courtesy of www.heavensabove.com

Well here we are moving forward with slightly longer days and shorter nights. A little reminder to move clocks forward 1 hour on Sunday 31st when we will be back to using British summer time.

Let's look quickly at the Moon again this month as there are two clair obscure effects that will be visible, the Lunar X and V will both be at their best on the 13th around 16:45 UT.



This month is a good opportunity to have a general look around our night sky. First look for the constellation Leo, just below the star Denebola where there are several deep sky objects e.g. M66 M65, M96 and M105. After you have looked at these go east of Denebola and not quite as far as Virgo where you will enter the realm of Galaxies, a very busy area of our night sky, but well worth the effort – so have ago.

NASA's Mars rover Opportunity has been officially declared dead after15 years roaming Mars. A sad day for all those who worked with her. Opportunity's lifespan was predicted as 90 days!

As one fan put it - "Dear Opportunity, 01000111 01101111 01100100 01110011 01110000 01100101 01100101 01100100 00100000 01001111 01110000 01110000 01111001, from A Martian Fan."

Translated into English it reads, "Godspeed Oppy."

The Planets

Mercury Barely an evening planet at the start of the month, setting around 19:30 UT, but gone by the end of the month.

Venus A very bright morning object still and quite close to Saturn.

Mars Still seen in our evening skies, passing slightly to the south of the Pleiades at the end of the month. Best viewed on the 1st.

Jupiter This month still mainly a morning planet, although rising about 04:15 UT. Best viewed on the 31st.

Saturn A morning planet, that has a close encounter with a 40% waning moon on the 29th.

Uranus Still visible in the evening sky through a medium to large scope but lost from view at the end of the month.

Neptune Alas not visible this month at all.

The Moon

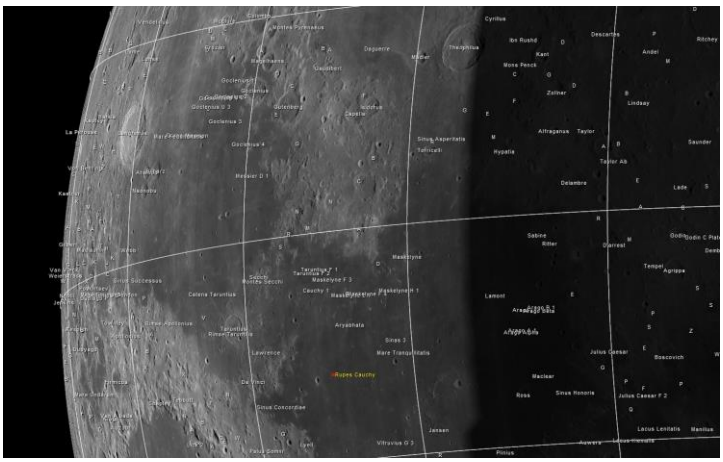
New Moon	6th March
First Quarter	14th March
Full Moon	21st March (Guess what – another Supermoon)
Third Quarter	28th March

Ken's March Moon Notes

The notes and charts I gave in February are quite close to the Moon phases in March on the 11th, 12th, 13th and 14th so have a look on these dates and you will see very much the same features. The terminator on these days is just a bit earlier than it was in February and if you add a few hours to the times given for February each of the dates will show almost identical features.

At this time of year, the Moon at first quarter is as high as it gets and on March 11th and 12th will be around 35 degrees elevation at 1800 UT and on the 14th will reach 55 degrees at 1900 UT. The air is liable to be much more stable than at other times of the year when these phases present themselves and this makes it an idea time for both visual observation and photography.

On the 11th March the terminator cuts through Theophilus. Have a good look at this magnificent crater as it moves from shadow into light. It is 100 km in diameter and 3.2 km deep with a large triple peaked central mountain 2 km in height. With the terminator so close to the central mountain you should get a fine three-dimensional view of it and it is worth applying high magnification if you are using a telescope with a long focal length. The floor of Theophilus is relatively smooth because of impact melt which occurred when it was formed. Ejecta and impact melt can also be seen round the outside of the crater as well as wall terracing on the inner slopes. Theophilus is the youngest of the triplet, the other two being Cyrillus and Catharina and this is easy to see when the three can be compared. Its age is not well defined but is believed to have been formed between 3.2 and 1.1 billion years ago (Eratosthenian era).



2019 March 11 at 1800 UT

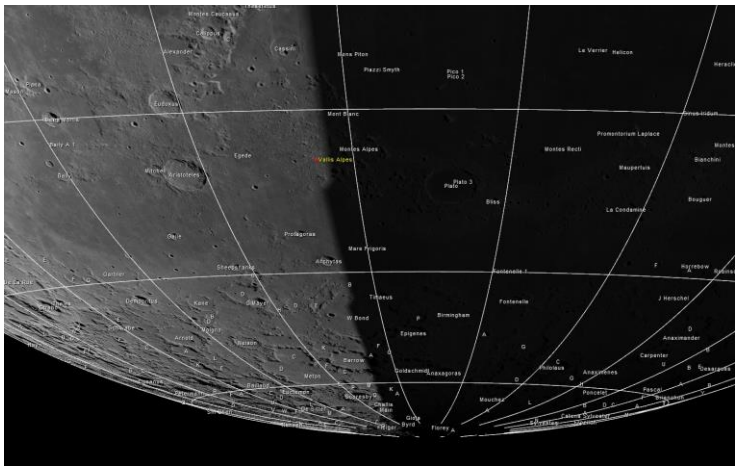
Lunar rilles are always interesting features to look for. They can be formed by flowing lava over previously laid down solid lava fields or they may be formed by stress tension pulling the lunar landscape apart and allowing ground between two tension cracks to slump downwards. A fine example of the latter is Rima Cauchy within the Mare Tranquillitatis. It is a graben fault which runs for 210 km. There are actually two parallel rilles here known as Rupes Cauchy and Rima Cauchy and should be seen using a small to moderate sized telescope. It would seem that this area of Mare Tranquillitatus was under considerable stress as the Moon, and lava flows, cooled. The rilles run slightly diagonally from south-east to north-west which is not the best direction to produce maximum contrast, but they are large enough to be quite easily seen.

A bit to the north and just on the eastern edge of Mare Serenitatis the 95km diameter crater Posidonius has just emerged from shadow. The crater is basalt filled and has no distinct central peak. There appears to be a concentric rim of another submerged crater within Posidonius with Posidonius A being the small but sharp crater near the centre of the main crater.

Let's jump to the 13th March when the terminator has just cleared Vallis Alpes. Like the Cauchy Rilles, The Alpine Valley runs more in an east-west direction than north-south, so the shadow effect of its walls does not give a real feeling as to its depth although the valley itself is as much as 10km wide. The rille running down the flat floor of the valley is a difficult object to see and will probably be hidden by shadow at this time but, if conditions are stable, try a high-power eyepiece and have a go.

Move southwards and, on the way past the emerging Montes Apenninus have a look in the Hadley area to see if the Hadley Rille is out of shadow. I suspect at the time given it will have emerged from the terminator, but the high mountains will probably be casting a shadow over the rille.

Onwards south and you will see the dog-leg of Rima Hyginus and just a bit further south the 26km wide crater Triesnecker. With this crater so close to the terminator it will be an ideal time to look for the extensive system of rilles nearby. These generally run north to south and should be quite easy to spot. These rilles are the result of tectonic forces inflicted by the cooling lava and are, in effect, cracks in the Moon's surface.



Ken Kennedy
Dundee Astronomical Society

Monthly Challenge

An easy challenge this month. Let's look close to Ursa Major to M81 and M82.

M81 also known as Bodes Galaxy and at a magnitude of +6.9 will be easily seen in a medium scope. M82 also known as the Cigar Galaxy lies in the same region of sky as M81 and at a magnitude of +8.4 again easily seen in a medium telescope. Interestingly, in January 2014 a Supernova occurred in M82 and was seen by several members of the Society on a Planetarium evening.

Both these Galaxies can often be viewed together in the eyepiece of your telescope and in images taken.

Jim's Focus of the Month

As mentioned above, look to the area around Leo and Virgo. Such a lot going on here as there is plenty to look at – not just for one night but over many.

Also don't forget our nearest neighbour The Moon. Using Ken's notes above you will a whale of a time.

Did You Know?

6th March 1986, USSR's Vega 1 probe flies by Comet Halley returning the first close-up pictures of a comet.

8th March 1987, Japanese spacecraft Suisei flies past Comet Halley.

6th March 1926, Robert Goddard, an American Physicist, launches the first liquid fuelled rocket.

29th March 1974, Mariner 10 makes its flyby of Mercury, returning the first pictures of the planet.

Jim Barber

Director of Observations

Dundee Astronomical Society