

Dundee Astronomical Society

Sky Notes for April 2019

Sky Map for 15th April 22:00

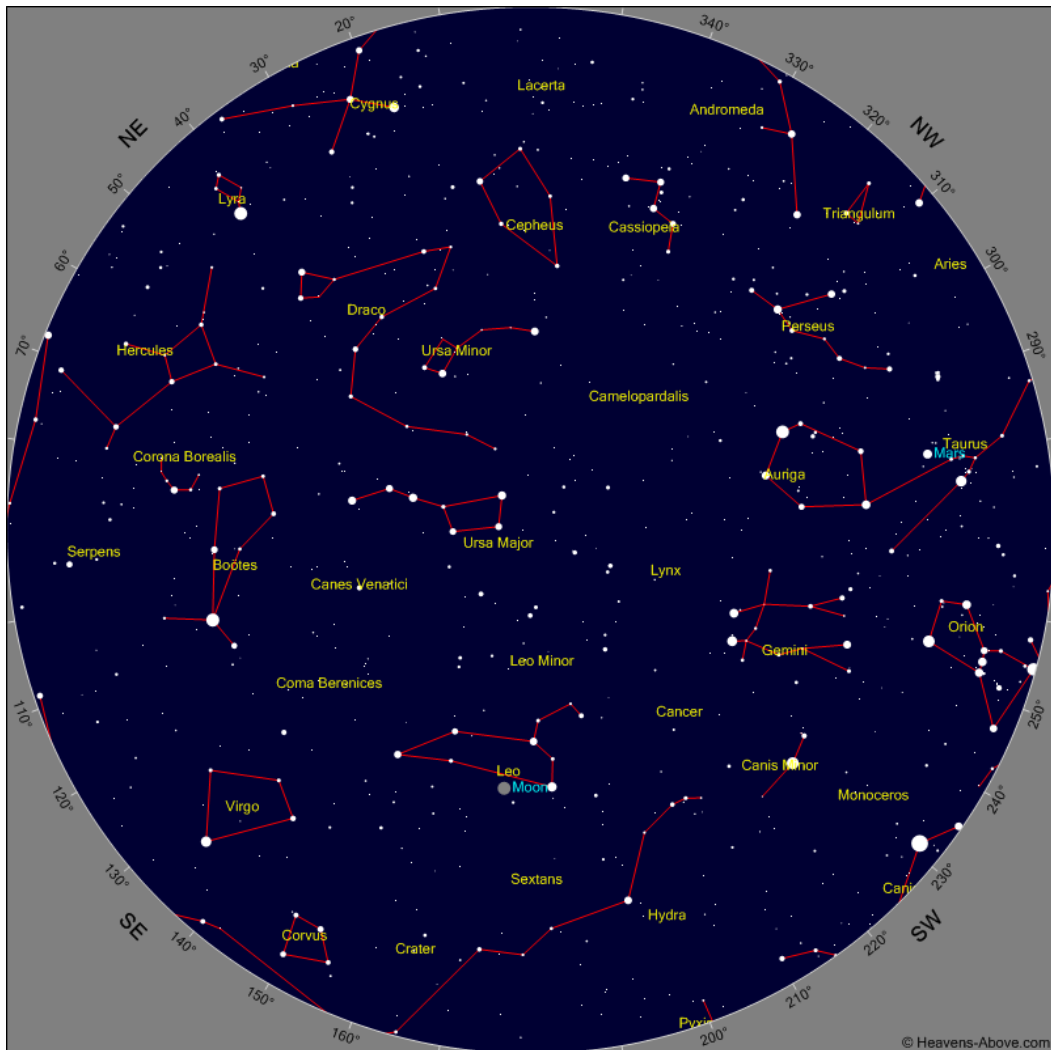


Illustration Courtesy of www.heavensabove.com

Here we are approaching spring, with not a lot of observing here in Fife. Good visibility during the day with very high winds at night, or good during the day with poor visibility at night. However, it is worth noting that the nights are slowly becoming shorter with, obviously, the days and daylight becoming longer, making it more difficult to spend quality time at the eyepiece. Whilst on longer days etc, don't forget to put your clocks forward early hours of Sunday the 31st of March when we will enter BST.

During the spring and summer months, it is probably better to concentrate on our nearer neighbours, the Moon for instance, and if an early bird why not look out for Saturn, Jupiter and Mars.

As agreed at the AGM, this will be the last Sky Notes until September, however as always, I will still be looking out for upcoming events such as NLC (Noctilucent Clouds) starting at the end May running through to Mid-August. I will email you, our members, to remind you of this plus anything else of interest.

The Planets

Mercury	Not visible in the evening Sky.
Venus	Bright morning object.
Mars	Close to the Hyades and Pleiades. Losing visibility at the end of the month.
Jupiter	Rising around 0200 UT but still low in our sky during the day. Close to a gibbous Moon on the 23 rd .
Saturn	Visible in the morning, following Jupiter in the sky with the Moon close by.
Uranus	Not visible in the evening sky.
Neptune	Not visible in our evening sky.

The Moon

New Moon	5 th April
First Quarter	12 th April
Full Moon	19 th April
Third Quarter	26 th April

Ken's April Moon Notes

As the elevation of the young Moon improves towards the summer months, I have chosen a few interesting objects which may be seen on the 7th and 8th of April. If weather conditions are not favourable in April, keep these in mind as they will be visible at similar phases from May until August. The Moon will be 2.5 days old on the 7th at around 1930 UT and 3.5 days on the 8th at about the same time. The young Moon will never be all that high in the sky at any time of year but the next few months will favour this phase. On the 7th at 1930 UT the Moon will be 23 degrees high and on the 8th, 32 degrees. This is relatively low but will be a bit higher during later months in the summer and should allow reasonable observation if air conditions are fairly stable.

The images I have provided are both on the 8th April at 1930 UT so the terminator will be in a more easterly direction on the 7th and, in fact, will bisect Mare Crisium on that date. 2019 April 07, 1930 UT

Even a small telescope will clearly show the prominent craters Langrenus and, more southerly, Petavius along the terminator of this slim crescent. It will be seen that, as I have said, the terminator will bisect Mare Crisium on the 7th. All lunar maria have wrinkle ridges, now referred to as dorsa and this is the ideal phase to see the rather low dorsa, Harker and Tetyaev, to the eastern side of Mare Crisium. Dorsa are the result of cooling lava and lunar shrinkage and have been likened to the wrinkled appearance of cooling custard! You may also note that Mare Crisium is relatively close to the lunar limb. This is because the libration of the Moon is -6 degrees in longitude which means that Mare Crisium is effectively tipped away from us.

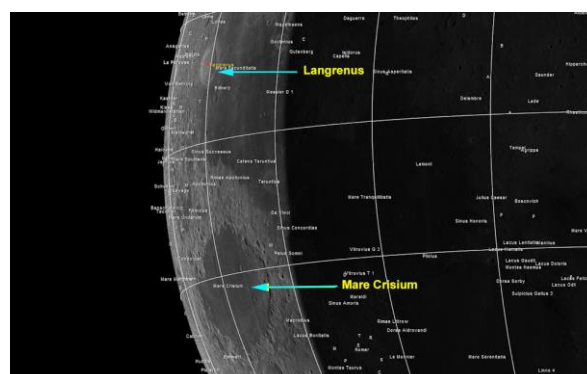
To the south of Mare Crisium the first most obvious crater near to the terminator is Langrenus. This crater is 132 km in diameter and shows wide irregular terracing and distinct and fairly compact central rebound peaks of about 1 km in height. It is said that there is a deep canyon which cuts across these peaks, but I can't recall noting this. If you see it, please let me know.

Further south still you will come across another prominent crater, Petavius. This is a large walled plain of around 170 km in diameter. Like Langrenus, the walls of Petavius are generously terraced but the mountains at its centre are many and complex. One of the most striking features of Petavius is the deep rille which runs from the central peak complex to the inner ramparts. This rille is a graben fault caused by stress during a period of local expansion. It is the most prominent feature of this crater but look carefully at the crater's floor as there are other rilles to be found, although less prominent.

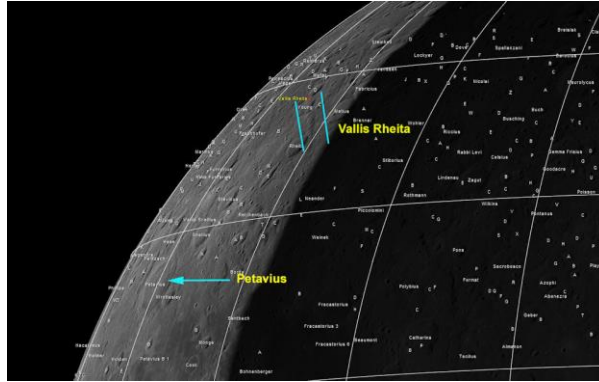
2019 April 08, 1930 UT

Revealed by the terminator today is the Vallis Rheita. This broad and somewhat irregular valley can be found to the south of Petavius. The valley is a scar from a secondary impact which occurred at the time of the formation of Mare Nectaris. It is 185 km long and 25 km wide and certainly rivals Vallis Alpes as a fine lunar valley. The valley is named after the 68 km wide crater Rheita at its northern end. It is likely that the valley is actually a crater chain formed by great chunks of material ejected from the formation of Mare Nectaris. Look closely and see if you can spot the cross-ridges along the valley which would suggest such a formation mechanism. This is an area I have looked at and photographed many times and as you become accustomed to the rather chaotic region you may well find other scars in the region which tell the story of the Mare Nectaris formation. They are less obvious than Vallis Rheita but when you see them note their length and direction.

So, I think you should have enough to keep you observing the Moon until the end of summer. The first quarter Moon will be a bit lower in the summer months but, if you get a chance, have a look at the areas which I mentioned for February and March and remember that you can look at the Moon while the sky is not completely dark. If the sky is brighter than you would like but the Moon is beckoning, try an orange or red filter as this will increase contrast.



Mare Crisium and Langrenus, 2019 April 08, 1930 UT.

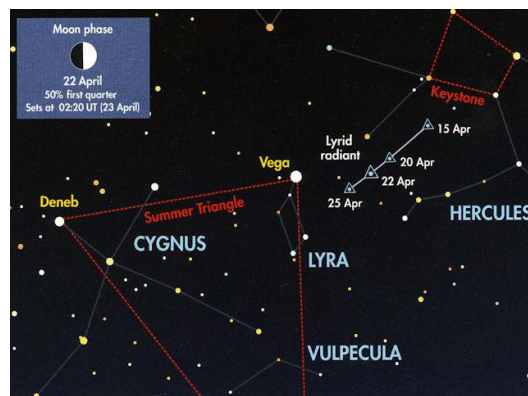


Patavius and Vallis Rheita, 2019 April 08, 1930 UT.

Ken Kennedy Dundee Astronomical Society

Meteor Showers

Lyrids Meteor Shower. The Lyrids is an average shower, usually producing about 20 meteors per hour at its peak (ZHR). It is produced by dust particles left behind by comet C/1861 G1 Thatcher. The shower runs annually from April 16-25. It peaks this year on the night of the 22nd and morning of the 23rd. These meteors can sometimes produce bright dust trails that last for several seconds. The first quarter moon will set shortly after midnight, leaving dark skies for the what could be a good show. Best viewing will be from a dark location after midnight. Meteors will radiate from the constellation Lyra but can appear anywhere in the sky.



Monthly Challenge

As the nights grow shorter it becomes more difficult to pick out a specific challenge, so for next few months how about you choosing your own personal challenges and letting us know what you picked, why you picked that particular challenge and the outcomes. Now there's a challenge on its own as there is so much choose from.

Hopefully below are some suggestions:

Our closest neighbour the Moon, Ken Kennedy during the past year has given us suggestions of interesting areas. Have a go.

Although we are losing Altair in the summer triangle, Vega and Deneb will still be visible. The constellation Cygnus (the Swan) gives us the opportunity to view Albireo a lovely double star at the head of the swan. Moving to Vega, look for Epsilon Lyra a double-double star. For this one you will need a large (6 inches or above) telescope to get anywhere near to resolving this one but rewarding when you do. M57 the Ring Nebula also lies in Lyra, close to Vega and well worth the look at on a clear night.

Provided you use the correct protection on your scope, binoculars or eyes why not observe our nearest star the Sun. But always remember you have only one pair of Mk1 eyeballs and you don't want to lose them by looking at the sun without protection.

M81 and M82 between Ursa Major and Minor, both can be seen in your scope eyepiece.

These are some of my objectives for the coming months ahead.

Jim's Focus of the Month

Let's look at Mars and Jupiter.

Mars First. Below is a graphic (Courtesy of S@N mag) showing the planet's track during April. The Planet is nicely positioned between the Pleiades and the Hyades. Well worth the lookout for.



If you are not averse to getting up early of a morning, it is well worth checking out the following Jupiter.

4th April 01:45, Shadow of Io on the planet followed by the transit itself 0305 UT

23rd April shadow of Ganymede at 02:10 UT.

30th April second Ganymede shadow at 03:30 UT.

Did You Know?

- | | |
|-----------------------------|--|
| 6 th April 1965 | Intelsat (Early Bird), first geostationary commercial communications satellite launched. |
| 4 th April 1983 | First flight of space shuttle Challenger. |
| 19 th April 1971 | Salyut 1, first space station launched by USSR. |
| 24 th April 1990 | Space shuttle Discovery launched, deploying the Hubble Space Telescope. |

Jim Barber

Director of Observations

Dundee Astronomical Society