

The astronomical sky over Edinburgh this month

August witnesses a rare Blue Super Moon, the first of four consecutive supermoons, and the glorious Perseid meteor shower.

The Sun leaves Cancer (The Crab) on 10 August at 5:11 am and enters Leo (The Lion). Daylight shortens from 16:01 (16.023 hours) on 1 August to 13:53 (13.876 hours) on 31 August so we gain a whopping 2 hours and 9 minutes of night time, by month's end. Summer's perpetual twilight ends on 8 August and we will enjoy darker astronomical skies until next June!

The new Moon appears on 4 August at 12:13 pm in Cancer (The Crab) beginning a new synodic (Lunar) month. Lunar apogee (furthest from Earth) occurs on 9 August at 2:39 am and takes the Moon to 405,328 km away from Earth – around 20,928 km further than average – subtending an angle of 29.5 arc-minutes. The first quarter of the new cycle shows up on 12 August at 4:19 pm in Libra (The Scales). The full Sturgeon Moon makes an appearance on 19 August at 7:26 pm in Aquarius (The Water Bearer). Lunar perigee (closest to Earth) on 21 August at 6:10 am finds the Moon some 360,184 km away from Earth – around 24,216 km closer than average – subtending an angle of 33.2 arc-minutes. Finally, the Moon enters last quarter on 26 August at 10:26 am

in Taurus (The Bull).

A further word about the August full Moon: it is an astronomical Blue Moon. The summer (astronomical) season exists between the summer solstice, on 20 June, and autumnal equinox on 22 September. This period of 93.66 days contains 4 full Moons on 22 June, 21 July, 19 August and 18 September. In such circumstances, the 3rd full Moon of the 4 full Moons within the same season is known as a Blue Moon. Note that the lay definition of a Blue Moon – two full Moons within the same calendar month – does not apply here.

We are not finished, however, as the August full Blue Moon also qualifies as a supermoon, the first of 4 consecutive supermoons. A supermoon occurs when the Moon is full or new and close to perigee and is technically referred to as a perigee syzygy. When at apogee syzygy, it is called a micromoon.

<http://astropixels.com/ephemeris/moon/fullperigee2001.html> provided by

Fred Espernak is a good source. So, we can see that the August full moon can be described as the Sturgeon Blue Super Moon.

For the inferior planets: Mercury appears to wobble on the sky by changing direction twice but this is only an artifact of astronomical geometry. Since it reaches inferior conjunction (in front of the Sun when viewed from Earth), it is impossible to see but it emerges as a morning object after 28 August very low in the east. We fare slightly better with Venus as an evening object, setting 30 minutes or so after the Sun, all month. Steady at -3.8 magnitudes, it starts August at 1.64 AU and ends the month at 1.52 AU, some

18 million km closer. It will conjunct with Regulus in Leo (The Lion) before setting on 4 August and will be joined by the waxing crescent Moon the following night. All will be close to the western horizon, though.

For the superior planets: both Mars and Jupiter remain in Taurus (The Bull) and are improving morning planets, rising after 1 am or so. They form an interesting triangle with Aldebaran on 4 August when Mars will be 4.9 degrees north of Taurus' brightest star in the wee hours. In fact, Mars and Aldebaran (the Bull's eye) will be almost equal in brightness at 0.9 magnitude and both have a reddish hue so make sure you can tell them apart! Over the next 10 days, they will get closer in the sky. By 14 August, Jupiter (-2.0 mag) and Mars (0.84 mag) will be within 0.3 degrees of each other with Jupiter outshining Mars by some 14 times.

Saturn rises well after sunset and rises higher as the month progresses. On 21 August around 4 am, the waning gibbous Moon will occult (pass in front of) Saturn and it will be lost to view for the remainder of the night. Since the Moon will be 93 per cent illuminated, it will far outshine Saturn so this event will be difficult to see.

Uranus, also in Taurus (The Bull), comes closer to Earth by some 78 million km. It reaches western quadrature on 19 August when the angle between Sun, Earth and planet will be an exact right angle. It is an improving morning planet all month and lurks near the Pleiades (M45) open cluster of bright stars. When it rises on 25 August, it will be roughly half a degree below the waning gibbous Moon but the said Moon will be 52 per

cent illuminated. Neptune, always requiring optical assistance to see, will peak in altitude, due south, from mid-month.

The Perseid meteor shower is one of the brightest and best of the year which run from 17 July though 24 August. They peak around 9 – 13 August and the optimum night for observation in Edinburgh and Lothian will be 12/13 August. These meteors are radiant from Perseus (The Hero) near the principal star Mirfak (shown on our sky map). They should produce up to 100 meteors per hour and visibility is excellent since the Moon sets at 10:36 pm. The parent comet is 109P/Swift-Tuttle discovered in 1862. In Roman Catholic lore they are known as the 'Tears of Saint Lawrence' because mourners first saw the meteor shower when carrying the saint's body after being martyred by roasting over hot coals. 10 August is also the saint's feast day.

On 31 August the Aurigid meteor shower peaks with, perhaps, 10 shooting stars per hour. The waning crescent Moon sets early at 7:55 pm allowing excellent visibility. The parent comet is C/1911 N1 Kiess. Although Auriga (The Charioteer) is at low altitude, the bright star Capella may help with finding the radiant point.

Comet 13P/Olbers starts August at 287 million km from Earth at magnitude 8.0 making it a telescope or binocular object only. It will be in Ursa Major (The Great Bear), one of the easiest constellations to spot. On 11 August, it moves into Coma Berenices (Berenice's Hair) at 293 million km from Earth and dims to 8.3 magnitudes. Thereafter, it loses altitude for the rest of the month and ends up unobservable at 9.2 magnitudes

and 318 million km from Earth.

We are fortunate that the Blaze Star (T CrB) has not yet erupted as a recurrent nova during the summer months when visibility would have been poor. So we continue to monitor Corona Borealis (The Northern Crown) for this very rare event which is expected to occur sometime before year's end.

At the time of our sky map, some constellations visible are Draco (The Dragon) at zenith, Camelopardalis (The Giraffe) in the north, Cygnus (The Swan) in the east, Bootes (The Herdsman) in the west, and Ophiuchus (The Serpent Bearer) in the south. The ecliptic hosts Aquarius (The Water Bearer), Capricornus (The Sea Goat), Sagittarius (The Archer), Scorpius (The Scorpion), Libra (The Scales), Virgo (The Maiden), and Leo (The Lion).

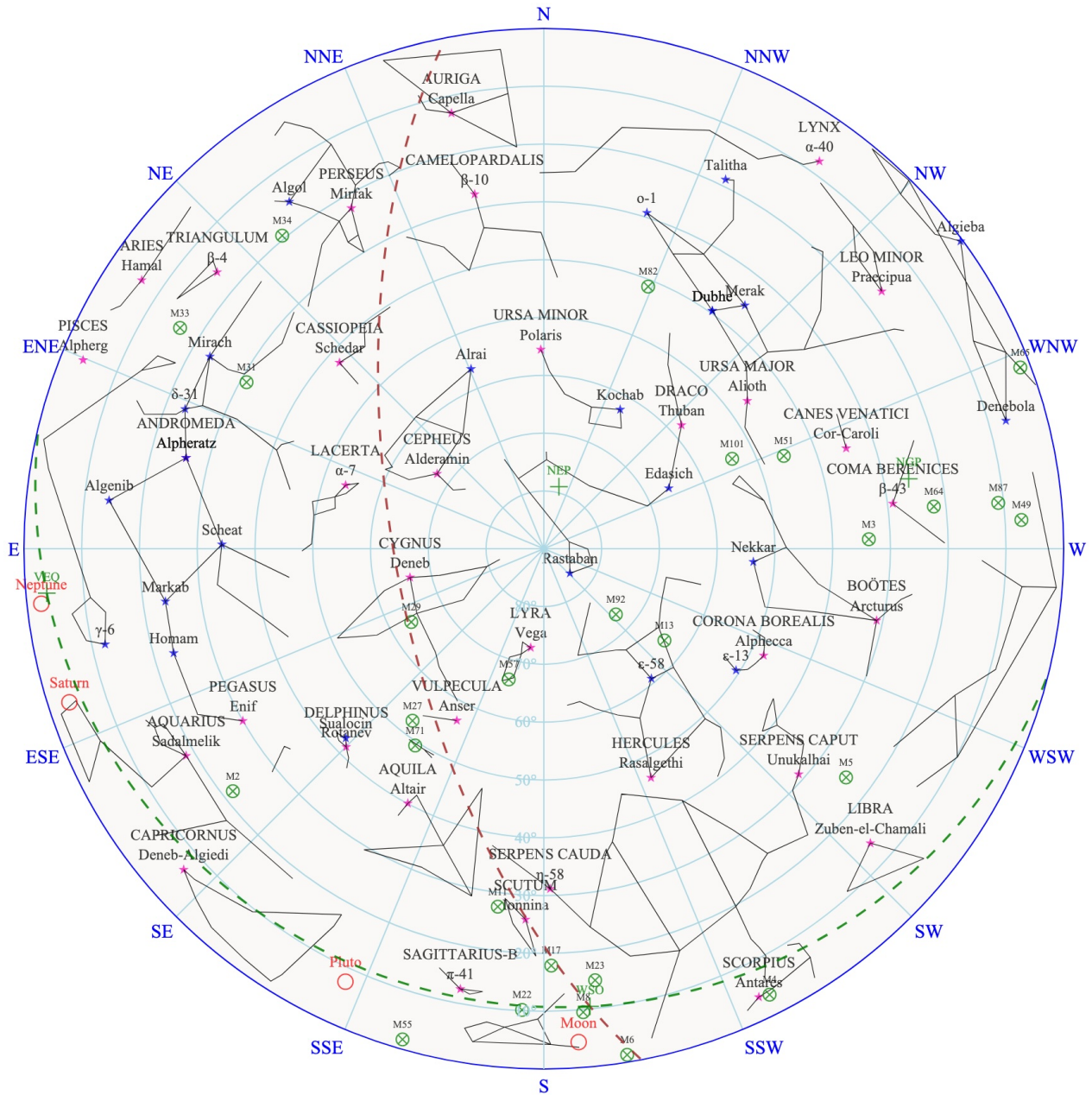
The 'Summer Triangle' – Vega in Lyra (The Lyre), Altair in Aquila (The Eagle) and Deneb in Cygnus (The Swan) – is prominent high in the south-east. Below the summer triangle is the small constellation of Delphinus (The Dolphin). The two brightest stars are Sualocin (alpha-Delphini) and Rotanev (beta-Delphini). Odd names, you might think, until you read them backwards and they spell out Nicolaus Venator. This is the Latin version of the Italian name Niccolo Cacciatore (Nicholas Hunter) who was the director of Palermo Observatory in 1814 when the stars were first included in their atlas of the heavens! Who says astronomers have no sense of humour?

Circumpolar constellations—always above the horizon—include

Cassiopeia (The Seated Queen),
 Cepheus (The King) and Ursa Major (The Great Bear).

Edinburgh and Lothian Ephemeris		
4 August 2:20 am	Mars 4.9°N of Aldebaran	Taurus
4 August 12:13 pm	New Moon, Meeus lunation 304	Cancer
4 August 9:30 pm	Venus 1.0°N of Regulus	Leo
5 August 5:26 am	Mercury reverses orbit at stationary retrograde point	Leo
5 August 9:30 pm	Venus 1.6°S of waxing crescent Moon	Leo
9 August 2:06 am	Moon crosses descending node	Virgo
9 August 2:39 am	Lunar apogee 405,328 km	Virgo
10 August 5:11 am	Sun leaves Cancer, enters Leo at 1.014 AU	Leo
12 August 11:00 pm	Perseid (007 PER) meteor shower peaks	Perseus
12 August 4:19 pm	Moon at first quarter	Libra
14 August 1:24 am	Mars 0.3°N of Jupiter	Taurus
15 August 9:53 pm	Earth closest to Mercury 91,002,087 km	Leo
16 August 10:00 pm	Mercury furthest south of ecliptic at 7°	Leo
19 August 2:58 am	Mercury at inferior conjunction	Leo
19 August 5:45 pm	Uranus at western quadrature	Taurus
19 August 7:26 pm	Full (Sturgeon) Blue Super Moon!	Aquarius
21 August 6:10 am	Lunar perigee 360,184 km	Aquarius
21 August 3:54 am	Waning gibbous Moon occults Saturn	Aquarius
22 August 11:26 am	Moon crosses ascending node	Pisces
25 August 10:48 pm	Uranus 0.6°S of waning gibbous Moon	Taurus
26 August 3:54 am	Moon 0.1°N of Pleiades (M45)	Taurus
26 August 10:26 am	Moon at last quarter	Taurus
27 August 4:30 am	Waning crescent Moon 4.9°N of Jupiter	Taurus
28 August 12:59 am	Waning crescent Moon 4.8°NE of Mars	Taurus
28 August 9:44 pm	Mercury reverses orbit at stationary direct point	Leo
30 August 5:47 am	Waning crescent Moon 1.7°S of Pollux	Gemini
31 August 11:00 pm	Aurigid (206 AUR) meteor shower peaks	Auriga

Edinburgh and Lothian
 (55.95°, -3.19°, 10.00m for 15 August 2024 10:00 pm)



The sky above Edinburgh and Lothian at 11 pm on 1 August, 10 pm on 15 August and 9 pm on 30 August. The green, dashed, line is the Ecliptic and the brown, dashed, line is the Milky Way. Asterisms below 10° may be truncated because of distortion. To use the map, face any direction and then rotate the map until that cardinal point is nearest to you. The zenith (point directly overhead) is at the center of the circle and the edge is the horizon.