The Astronomical Sky above Edinburgh and Lothian May 2024

We gain the ‘Summer Triangle’, but lose the ‘Winter Triangle’, as the predominantly twilit sky reduces observability to the brighter objects in the heavens. Keen observers should continue to be vigilant for a nova (new star) in Corona Borealis (The Northern Crown).

The Sun starts the month in Aries and enters Taurus on 13 May at 5:58 pm. Daylight lengthens from 15:25 (15.413 hours) on 1 May to 17:11 (17.175 hours) on 31 May so we lose 1 hour and 46 minutes of night time by the end of the month. If we define astronomical night as the time between astronomical dusk and astronomical dawn the following day then we lose the astronomical night completely after 4 May until August as the Sun never drops below the twilight boundary at −18.0° altitude! Our astronomical night, in the late spring and summer months, is really perpetual twilight. Consequently, only the brightest objects can be observed during this time.

The Moon experiences a double ‘last quarter’ in May. The first occurs on 1 May at 12:27 pm in Capricorn. Lunar perigee (closest to Earth) on 5 May at 10:58 pm finds the Moon some

363,146 km away from Earth – around 21,254 km closer than average – subtending an angle of 32.9 arc-minutes. The new Moon appears on 8 May at 4:22 am in Aries beginning a new synodic (Lunar) month. The first quarter of the new cycle shows up on 15 May at 12:48 pm in Leo. Lunar apogee (furthest from Earth) occurs on 17 May at 7:56 pm and takes the Moon to 404,676 km away from Earth – around 20,276 km further than average – subtending an angle of 29.5 arc-minutes. in Scorpio. The full Flower Moon makes an appearance on 23 May at 2:53 pm. Finally, the Moon enters the second last quarter on 30 May at 6:13 pm in Aquarius.

The Moon can also be used to identify stars and nebulae as it swoops through the heavens and there are several such conjunctions this month. Pollux, one of the pair in Gemini (The Twins) will be 1.6°N of the waxing crescent Moon on 12 May. This is also a good time to see earthshine nights where the Moon is bathed in light reflected off the Earth. It is also known as the Da Vinci glow. The following day, the Moon conjuncts with the Beehive Cluster (M44), also known as Praesepe, in Cancer (The Crab). On 15 May, Regulus in Leo (The Lion) will be 2.5°S of the first quarter Moon. In the pre-dawn of 24 May, the waning gibbous Moon occults Antares in Scorpius (The Scorpion).

If we thought last month was difficult viewing for the planets, May is not much easier given the twilit skies mentioned above. Mercury and Venus rise and set with the Sun so remain unobservable. With binoculars, we may fare better—but marginally—with Mars which begins to emerge from the Sun's glare. On 1 May at 5:15 am it will be at altitude 2.5° in the east at 1.12 mag. If you are out of luck with Mars at that time, try the International Space Station (ISS) at an altitude 33° and azimuth 146.5° (roughly SE). By 31 May at 4:15 am Mars will be at altitude 8.5° in the east and ever so slightly brighter at 1.06 mag.

The earthshine morning Moon sweeps by ISS, Saturn, Mars and

even Mercury around 5 am on consecutive days 3, 4 (Star Wars Day), 5 and 6 May.

Both Jupiter and Uranus reach solar conjunction—behind the Sun when viewed from Earth— so are lost to us. They both also reach their maximum distance from Earth for the whole year with Jupiter at just under 902 million km away and Uranus at just over 3,082 million km distant. Like Mars, Saturn may be viewable in the early morning sky at altitude 6.3° on 1 May at 5:15 am rising to altitude 13.5° on 31 May at 4:15 am. On that last day of the month, it can be found in second conjunction with the Moon, at last quarter, in Aquarius (The Water Bearer). Neptune at 7.8 magnitude is lost in the perpetual twilight of May.

As a bit of fun, though, there are two transits during May but they cannot be seen from Edinburgh and Lothian. In fact, they cannot be seen from anywhere on planet Earth at all. On 17 May at 2:09 pm (Earth time), a transit of Mars will be viewable from Saturn and on 25 May at 11:31 pm (also terrestrial time) Jovian gas dwellers (if there are any) will see a Venusian transit.

There are 2 meteor showers in the May sky for Edinburgh and Lothian. The strong Eta Aquarids, radiant from Aquarius (The Water Bearer), began last month and are active until 28 May. They peak on 5–6 May with up to 50 meteors per hour. They are viewable on 6 May at 3 am for about 90 minutes before being lost in the Sun's morning twilight. The waning crescent Moon, with only 3% illumination, helps. These are one of only 2 meteor showers seeded by the world's most famous comet: 1P/Halley. Halley passed aphelion last December and is slowly making it's way back into the solar system and will reach the next perihelion in your present interlocutor's 100th year!

The weak Eta Lyrids, radiant from Lyra (The Lyre), are active between 3–14 May and peak on 10 May with up to 5 meteors per hour. This shower is associated with comet C/1983 H1 IRAS-

Araki- Alcock. They are hard to see but the waxing crescent Moon only has 8% illumination so offers some hope. They will be radiant from an area between Vega and Deneb: two of the bright stars in the Summer Triangle.

Be careful not to confuse meteor tracks with satellite trails. As of last month, Starlink has 5800 operational satellites in orbit and these can be seen quite frequently. A useful tool is findstarlink.com. For overpasses of the International Space Station, check out NASA's spotthestation.nasa.gov

Comet 12P/Pons-Brooks (the Devil's Comet) is now lost to us but another comet is rushing towards perihelion and will brighten considerably over the coming months: C/2023 A3 Tsuchinshan- ATLAS is currently below 11th magnitude but may well reach 2 mag in October. This is as bright as the star Polaris so one to watch, for sure.

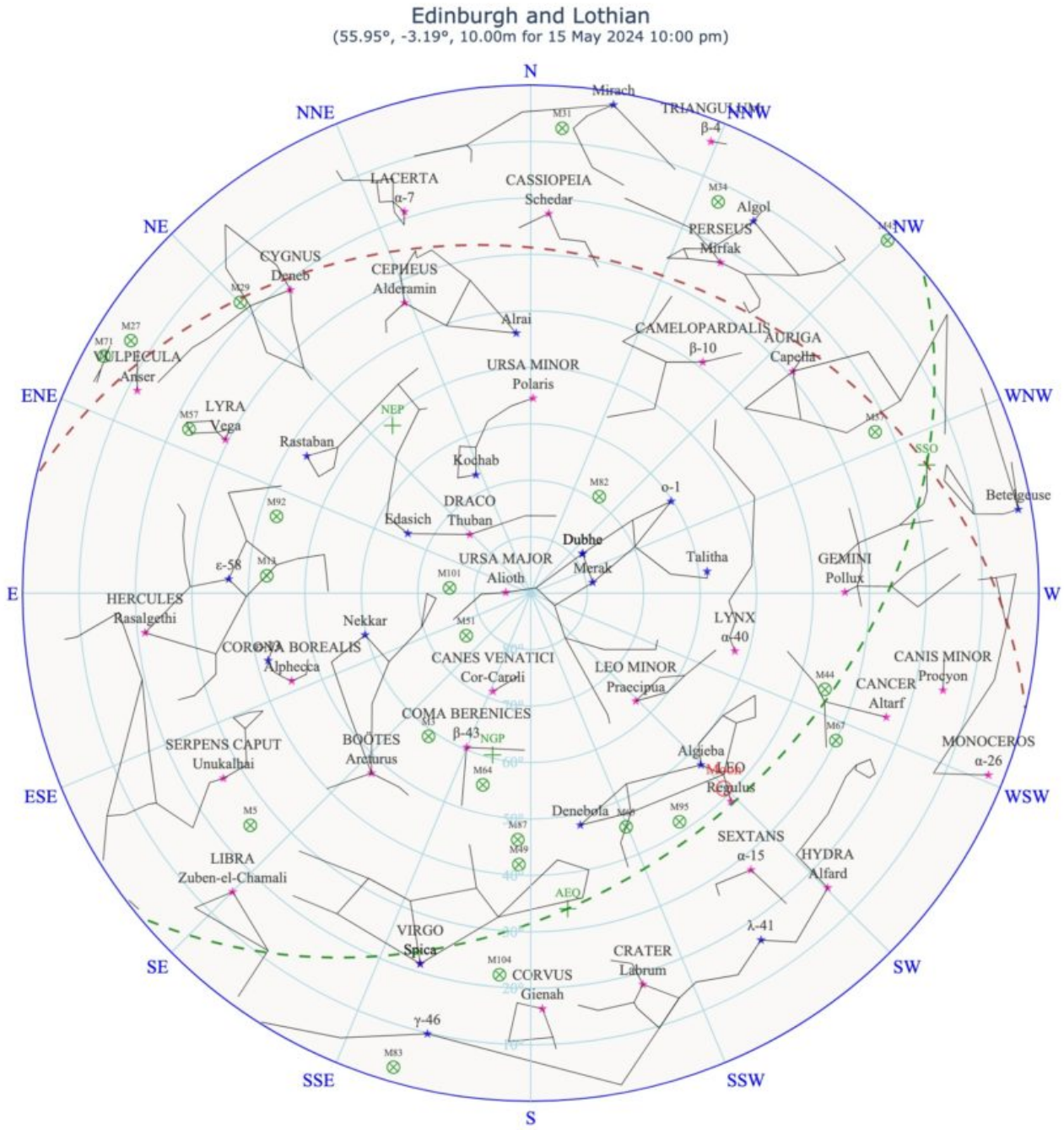
T Coronae Borealis (T CrB)—also known as the Blaze Star—is one of only 5 recurrent nova in the Milky Way. A binary system, the white dwarf component—at 1.37 Solar masses—is rapidly approaching the Chandrasekhar limit where instability begins. The companion red giant is close, 0.54 AU, and is shedding mass to an accretion disk around the white dwarf. As this falls in, it heats up and eventually initiates a nova (exploding star). This happens on an 80-year cycle and, typically, the star dims a year or so before the nova and this dimming started in March 2023. Consequently, we are now poised to witness a runaway nuclear reaction in the sky from the safe distance of 2.365×10^16 km, 2,500 light years. We can expect this 'new star' to appear near CrB ε-13 literally at any time. The constellation Corona Borealis (The Northern Crown) is not the easiest to spot but it's neighbour, at the time of our skymap, is Bo ötes (The Herdsman) which contains the bright star Arcturus and should be readily seen in the east. Alphecca (sometimes called Gemma or α CrB) is the brightest star in the crown, at 2.2 mag, and should guide you to this, once in a lifetime, transient event.

At the time of our sky map, some constellations visible are Ursa Major (The Greater Dog) at zenith, Hercules (Hercules) in the east, Lynx (The Lynx) in the west, Cepheus (The Seated King) in the north and the sky's largest constellation Hydra (The Female Water Snake) in the south. The ecliptic hosts Libra (The Scales), Virgo (The Maiden), Leo (The Lion), Cancer (The Crab) and Gemini (The Twins). We lose much of both the 'Winter Triangle' (Sirius, Betelgeuse, Procyon) and the 'Winter Hexagon' (Rigel, Aldebaran, Capella, Pollux, Procyon and Sirius) in May. We do, however, begin to glimpse another pseudo-constellation called the 'Summer Triangle': Vega in Lyra (The Lyre), Altair in Aquila (The Eagle) and Deneb in Cygnus (The Swan). At the time of our skymap, Altair has not yet risen but by midnight the triad will be seen in the east. These stars will remain with us during the coming months providing bright beacons in the twilit summer skies. Another prominent pseudo-constellation is the 'Diamond of Virgo': Arcturus in Boo ŧes, Cor Caroli in Canes Venatici (The Hunting Dogs), Denebola in Leo and Spica in Virgo. At center of the diamond is Coma Berenices (Berenice's Hair) which hosts the north galactic pole.

Circumpolar constellations—always above the horizon—include Cassiopeia (The Seated Queen),Draco (The Dragon), Ursa Minor (The Little Bear) and Perseus (The Hero).

Draco (The Dragon), *Ursa Minor* (The Little Bear) and *Perseus* (The Hero).

Edinburgh and Lothian Ephemeris		
1 May 12:27 pm	Moon at last quarter	Capricorn
2 May 5:58 pm	Dwarf planet Pluto at stationary retrograde point	Capricorn
5 May 10:53 pm	Moon crosses ascending node	Pisces
5 May 10:58 pm	Lunar perigee 363,146 km (0.945)	Pisces
6 May 3:00 am	Eta Aquarids rise and peak over next 90 minutes	Aquarius
8 May 4:22 am	New Moon, Meeus lunation 301	Aries
8 May 11:55 am	Mars perihelion 206,670,120 km (1.382 AU)	Pisces
9 May 10:31 pm	Mercury at greatest elongation 26.4°W	Pisces
10 May 12:00 am	Eta Lyrids rise and peak over next 90 minutes	Lyra
12 May 11:17 pm	Pollux 1.6°N of waxing crescent Moon	Gemini
13 May 10:11 am	Uranus at conjunction with the Sun	Aries
13 May 2:52 pm	Earth Uranus furthest apart for the year at 3,082,079,063 km	Aries
13 May 5:58 pm	Sun leaves Aries, enters Taurus at 1.011 AU	Taurus
13 May 11:47 pm	Beehive Cluster (M44, Praesepe) 2.9°SW from waxing crescent Moon	Cancer
15 May 1:04 am	Mercury at dichotomy	Pisces
15 May 12:48 pm	Moon at first quarter	Leo
15 May 11:00 pm	Regulus 2.5°S of first quarter Moon	Leo
17 May 8:10 am	Asteroid 2 Pallas at opposition	Hercules
17 May 7:56 pm	Lunar apogee 404,676 km (1.053)	Leo
18 May 7:45 pm	Jupiter at conjunction with the Sun	Taurus
19 May 5:35 pm	Moon crosses descending node	Virgo
21 May 2:42 am	Earth Jupiter furthest apart for the year at 901,756,308 km	Taurus
23 May 2:53 pm	Full (Flower) Moon	Scorpio
24 May 2:15 am	Waning gibbous Moon occults Antares	Scorpio
30 May 6:13 pm	Moon at last quarter	Aquarius
31 May 3:15 am	Saturn 4°E of last quarter Moon	Aquarius



The sky above Edinburgh and Lothian at 11 pm on 1 May, 10 pm on 15 May and 9 pm on 30 May. 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.