

As we head into August the evening twilight noticeably fades an hour earlier throughout the month.

Look to the NW from 90 to 120 minutes after sunset or similarly to the NE hours before sunrise i.e. when the Sun just below the horizon during the summer months when extremely high clouds at 80 km altitude known as Noctilucent Cloud (NLC) may be seen. NLC's show a bluish colour and also show filamentary structure. Late August marks the end of the season for seeing NLC's. Recent reports suggest that NLC displays have been seen to mid-latitudes, so keep an eye on the late evening skies this month.

The late evening sky sees the ringed planet rising low in the south east in the constellation of Capricornus now visible as a yellowish star reaches opposition on August 14th Using Binoculars the planet appears `elongated`, small telescopes show the famous ring system and Saturn brightest moon Titan. Larger telescopes show some additional detail in the rings (Cassini division) and some subtle features on the disk. Around the time of opposition the rings may appear brighter due to the Seelinger effect, favourable alignment of the dust within the ring system as seen from Earth. The tilt of the rings is now reduced to 13° throughout the rest of 2022, still showing the classic view. If you have not yet seen this `gem` of the solar system, the autumn months offer good telescopic views in the early evening – observing evenings to be advised via the LAS website www.lutonastrolink.co.uk

Jupiter is very notable as it approaches opposition in late September and shines brightly (-2.9m) in the south east aspect located low in the constellation of Aquarius, rising about an hour after Saturn. Small telescopes show the famous equatorial belts and the four Galilean moons, Io, Europa, Ganymede and Callisto. Larger telescopes also show shadow transits of these moons cast onto Jupiter's cloud tops and more subtle details within the belts.

Planet Neptune is also located in the constellation of Aquarius, close to the star Phi Aquarii – Binoculars and small telescopes can be used, the planet appearing as a bluish coloured star (7.8m) – see finder chart. Larger telescope show a tiny disk in contrast to the pin sharp background stars.

From late month planet Uranus is visible in late evening skies with binoculars as a characteristic greenish colour 5.7m magnitude star like point located in the constellation of Aries 2½ field of view below the star Hamal (see notes). Telescopes show a `tiny` disc appearing obviously `different` to the pin sharp star points of the field stars. Uranus is borderline naked eye visible from dark observing sites in moonless conditions.

In the late evening skies, Mars can also be seen rising – notable as a red star shining at 0m it continues to brighten and grow in apparent size as it approaches opposition in late 2022. Mars moves from Aries into Taurus during August, Mars and the red star Aldebaren make a quite a sight in our autumn skies.

The August night sky shows the summer constellations prominently in the south east from early evening.

Our own Milky Way galaxy stretches from the constellation of Auriga [The Charioteer] marked by the bright star Capella low in the north up through the constellations of Perseus and Cassiopeia rising low in the north east Overhead the Milky Way can be seen on moonless nights as a faint band of light in the constellation of Cygnus {The Swan or Northern Cross} and down towards the southern aspect, through the constellation of Auriga and the star rich fields in the constellation of Scutum [The Shield] and into the southern horizon and the constellation of Sagittarius [The Archer]. If you are lucky enough to have access to a dark sky site, remember to pack your binoculars and enjoy looking these rich star fields on clear moonless evenings and be amazed.

Sagittarius is best seen in early August low in the south in early evening. The constellation is known for the `Teapot` asterism of stars but has both rich star fields and some fine star clusters located above the spout of the Teapot asterism; however you do need a good southern horizon and finder chart to spot some of these. Pluto is located just above `the handle of the teaspoon asterism although at 14th magnitude its stretching the limits of even larger instruments visible only as a star like point.

Up until to August 23th observers may also catch the Perseid meteor shower, one of the most prolific meteor showers in the calendar. This year the predicted peak occurs August 13th maxima around 02h BST hrs. Conditions this year are however are unfavourable with the moon interfering after moonrise (21:39 BST)

If you have clear conditions in the late evening on moonless evenings early August and a dark site, sit back on a sun lounger and keep a look out for these bright meteors with persistent trails. Meteors originate from the dust debris trail of comets and these sand grain size meteoroids burn up in Earth's upper atmosphere causing the streak of light we see as a meteor. In the case of the Perseid shower, these are seen to peak around August 12th/13th each year as Earth passes through the meteoroid stream from Comet Swift Tuttle (1862 III). Each time the comet orbits the Sun, another stream is laid down, resulting in a complex set of streams, rather like the strands of a rope – Meteor activity can therefore vary from year to year. Due to perspective the meteors appear to radiate from a single point in the sky, the Radiant, in the case of the Perseids this is in the constellation Perseus hence the name – Perseid.

The constellation of Auriga, noted by the bright star Capella is located low in the northern aspect late evening, Capella is circumpolar from UK latitude, circumpolar constellations such as Ursa Major, Cassiopeia are always visible ie do not set. Hercules is noted for the Globular cluster M13 containing some 750,000 stars, a nice view in a small telescope and also its rival globular cluster M92 which is equally impressive with higher magnification.

The bright star Vega in the constellation of Lyra [The Lyre] is seen high above the north east horizon and Altair in the constellation of Aquila low in the south east. Vega, Altair and Deneb, in the constellation of Cygnus form the `Summer Triangle` asterism, a useful sign post for the summer skies.

Look low in the south early evening as twilight fades to catch a glimpse the distinctive `T` shaped asterism of stars of the `head` of Scorpius. Look below the `T` head of Scorpius to see the `blood red` coloured star Antares. Antares name means `The rival of Mars`, a red super giant star, with a mass of some 20 solar masses. It has a diameter that, on the scale of our solar system, would be greater than the orbit of Mars.

High in the south the bright orange star Arcturus in the constellation of Bootes [The Herdsman] is the brightest star in the northern hemisphere of the sky.



The stars of the Summer Triangle asterism, the position of the Milky Way star fields and dark rifts through the constellations of Cygnus, Sagitta and Aquila.

Planets in August 2022

Mercury is at greatest elongation on August 27th, poorly placed in the evening twilight

Venus appears low in dawn twilight shining brightly low in the east, rising about an hour after the Sun.

Mars is now nicely placed in the late evening low in the constellation of Taurus

Jupiter, located in the constellation of Aquarius rising by late evening low in the SE. Notable shadow transit events Moderate telescope >150mm aperture required to spot the shadows cast onto the cloud tops of Jupiter by the Galilean moons appearing as tiny dark circular disks moving across the planet over a couple of hours .

Saturn now visible late evening low in the south in Capricornus mid evening - a good time to see this ringed `gem`, opposition occurring on August 14th.

Uranus rises by late evening located in the constellation of Aries – best views in autumn skies.

Neptune now rises mid evening in the constellation of Aquarius – best views in autumn skies.

Moons phases in August

New Moon Aug 27th Moonless, best time for deep sky observing and meteor watching (see notes)

First Quarter Aug 5th Best days to see shadow details in lunar craters (early evening)

Full Moon Aug 12th Best days to see bright ray craters like Copernicus / Tycho.

Last Quarter Aug 19th Moon visible in daytime skies. Do not look directly at the Sun.

Meteor shower s Perseid July 23rd to Aug 20th, unfavourable peak Aug 13th- moonlight interferes. Visually up to 50 per hour at peak – Fast meteors with bright persistent trails.

Southern Delta Aquarids – July 12th – Aug 23rd , max July 31st – V favourable , low rates ZHR 20/hr

The highlights of the month.

Saturn very low in south in Capricornus, rings open at 13° DE [tilt] showing Saturn's North Pole.

Jupiter low in evening twilight, four Galilean Moons and cloud belts visible in modest telescopes.

Mars low in late evening, in Taurus, apparent size increased to 10 arc sec, mag -0.1m by month end.

Noctilucent cloud – watch the NW skies from 90 minutes to 120 minutes after sunset (Early August)

Milky Way star fields, visible from dark sites on moonless evenings Remember the binoculars if you're on holiday in a dark site and trace out the star fields and dark rifts through Cygnus, Aquila, Scutum and down into Sagittarius.

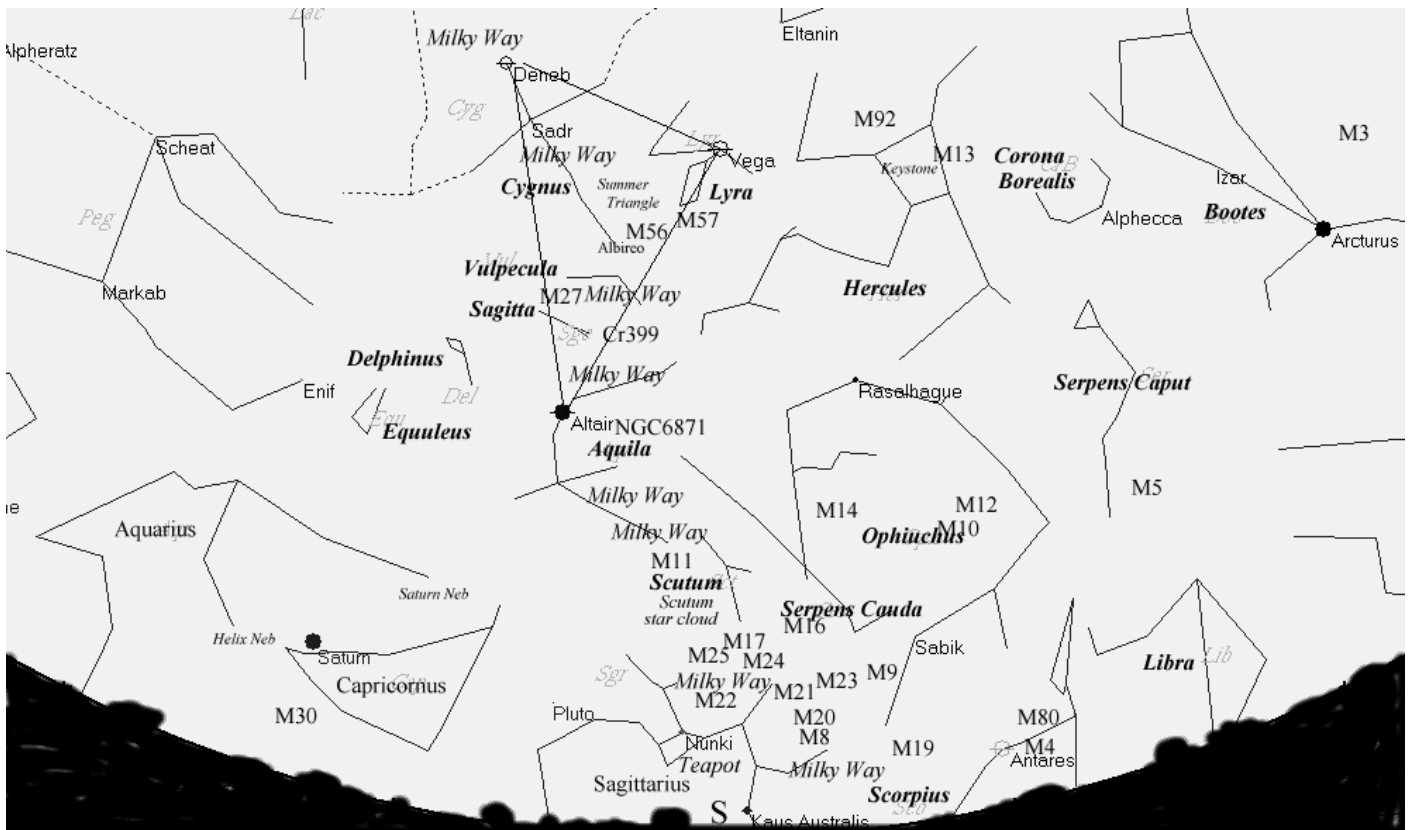
DSLR astrophotography - Sky photography on moonless evening – 28mm /50mm lens – manual focus to infinity. Set ISO / ASA 1600, exposure 30s, remote cable release , tripod mounted – Have a go at capturing some of the star fields through Cygnus around Deneb (NGC 7000 N.American Nebula) / Scutum - you may also capture a Perseid meteor too on a moonless evening.

More detailed sky notes and LAS Newsletters, Finder charts are available to LAS members via the Members` page on the LAS Website www.lutonastrolink.org.uk

Waxing crescent Moon visibility . Caution. Do **NOT look at the Sun directly with or without optical aid.**

A thin 2.1 % waxing crescent moon is visible **after sunset** on August 28th to moonset at 20:47 BST. Note the dimly lit part visible by Earthshine is readily seen with binoculars or small telescope. **Only look for the crescent Moon after the sun has completely set.**

Sky looking south at 10pm British Summer Time (BST), late August

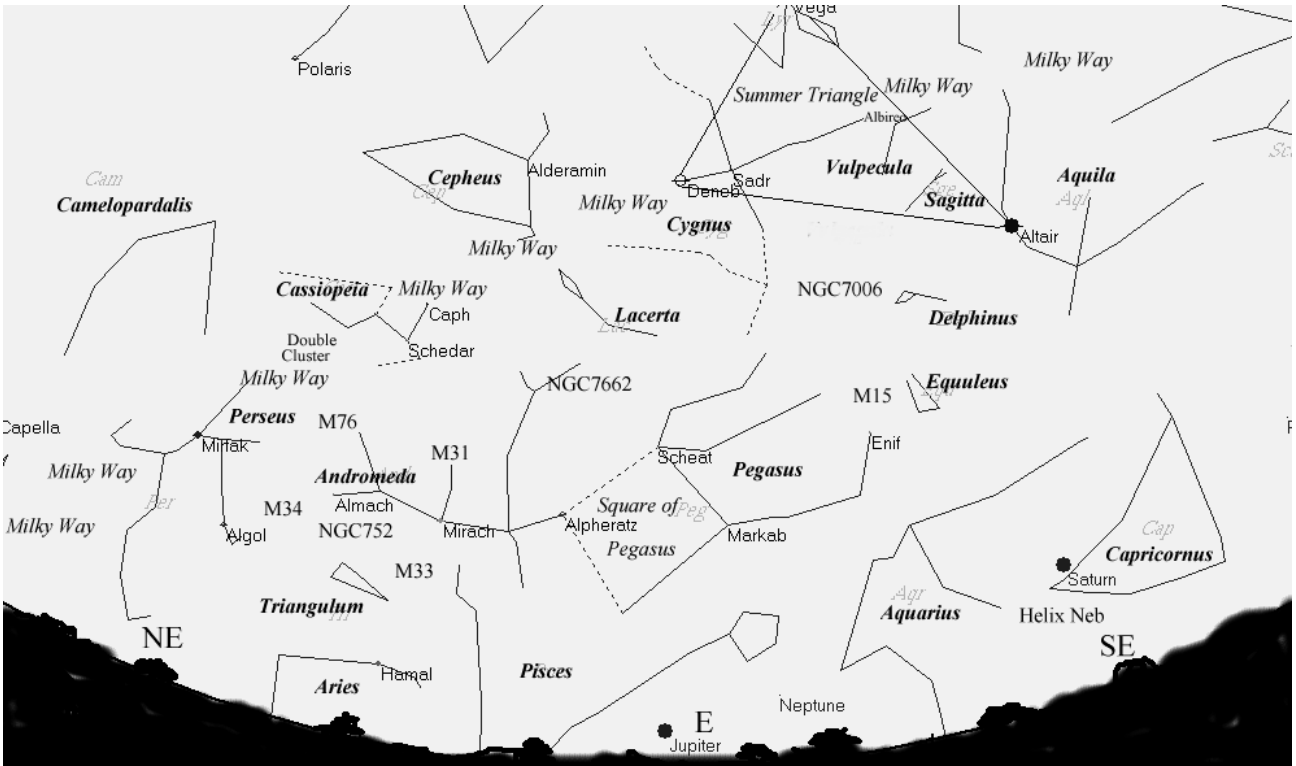


In the south east the ringed planet Saturn in the constellation of Capricornus

From the UK we only see the head; the rest of the constellation is visible from more southerly locations. Catch a glimpse in August of the bright red star Antares on the stem of the `T` asterism low in the south west.

In the south the constellation of Sagittarius (noted by the famous Teapot asterism) is visible early evening. This area of sky is rich in star fields of the Milky Way and has many fine clusters but is only observable in our evening skies during the summer months. Looking at Virgo we look outside our own Milky Way galaxy towards the external galaxies of the Virgo Cluster, look to Sagittarius to into the spiral arm of our own galaxy, the centre of our own galaxy is however too far south to see from the UK.

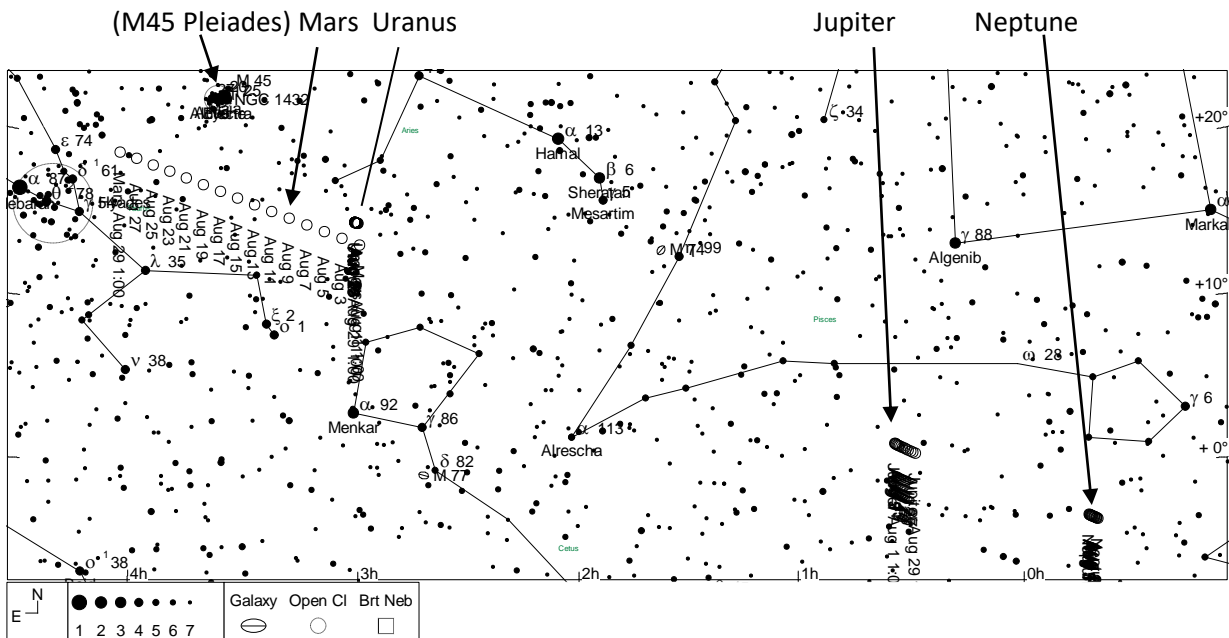
Sky looking east at 11pm BST late August



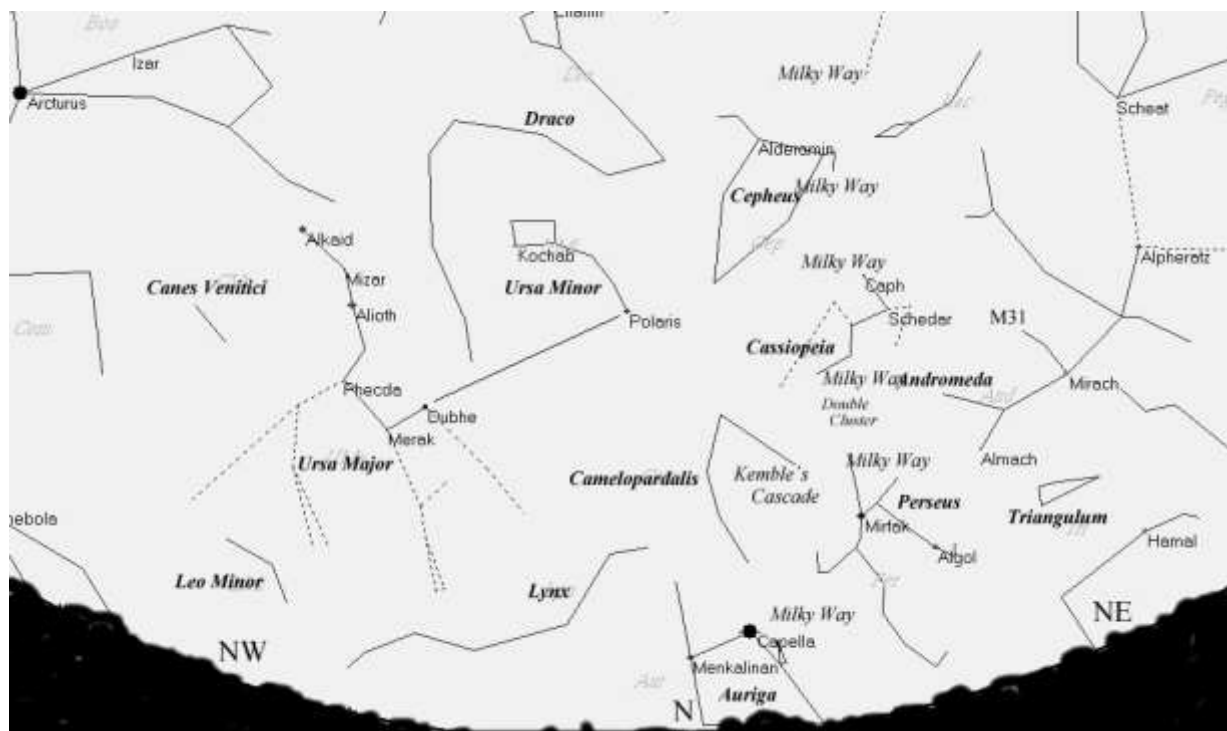
Jupiter and Saturn are joined by Mars late evening by late August

Around August 11th, 12th and 13th keep a watch for Perseid meteors, look away from the Radiant (Perseus) to catch a glimpse of the meteors – late evening / early morning , peaking between 02:00BST August 13th . Typically 30 to 50 meteors per hour, but you may go for a while between seeing a meteor. With waxing gibbous moon conditions this years maxima is quite unfavourable for meteor watching – best seen in moonless conditions (before moonrise)

In August, the summer constellations of Lyra and Cygnus are high overhead by late evening, the Milky Way may be visible on moonless evenings from a dark site. Stretching from low in the south east to low in the north west, this misty band is best seen with binoculars, follow the star fields from Altair, along the galactic plane , down through Scutum and into Sagittarius is stunning in a dark sky. Neptune is located in Aquarius , 7.8m and Uranus 6m magnitude is placed low in Aries both are also visible in binoculars low in late evening but better placed during autumn nights. Jupiter is brightest, Mars is notably red in colour

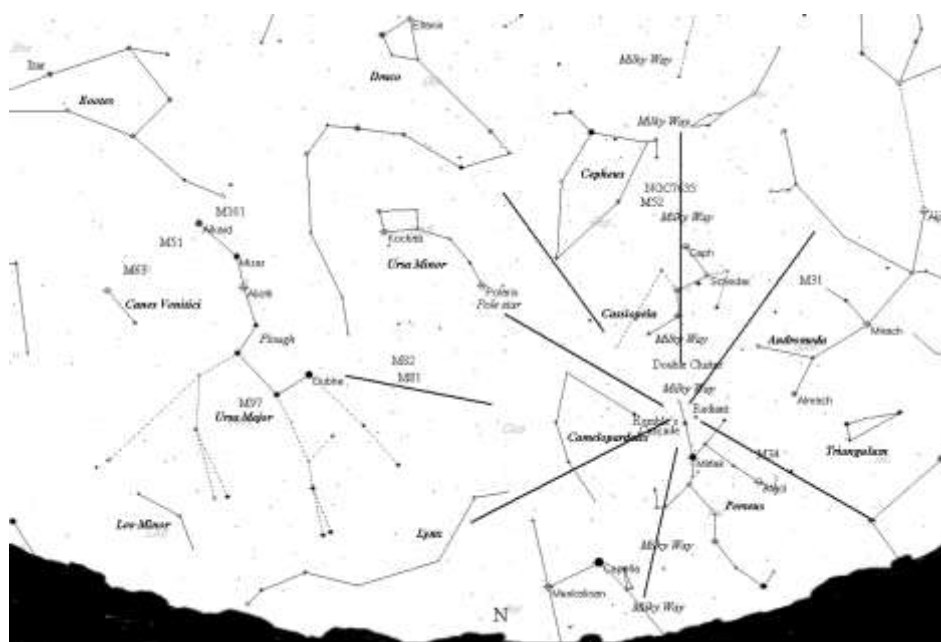


Sky looking north at 11pm BST late August



Perseus rising late evening – radiant of the Perseids meteor showers (see notes) typically 30 to 50 meteors / hour.

The Plough stands with its handle pointing upward follow the pointer’s Dubhe and Merak to find the polestar Polaris. The ‘W’ shaped constellation of Cassiopeia is near to its lowest point in the north late evening. The Milky Way follows the galactic plane and stretches from east through the constellations of Cygnus, Cassiopeia, Perseus and down into the northern horizon. The bright star Capella is positioned almost due north and is circumpolar i.e. does not set from our latitude.



Perseid Meteor Shower

Unfavourable conditions for UK

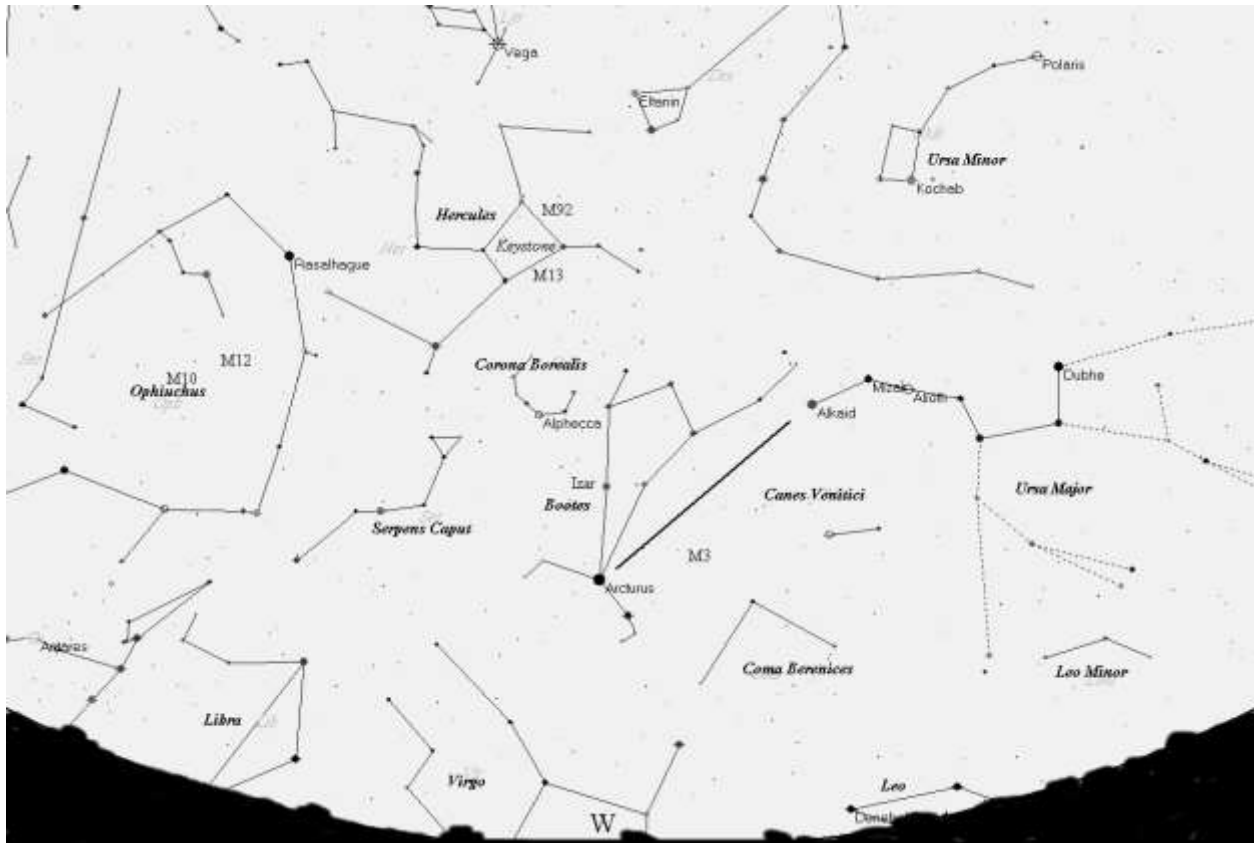
Maxima – early morning

Moon rise 21:31 BST

Look overhead, away from the Moon and the NE radiant to spot these bright meteors with persistent trails.

Allow at least 15 minutes to become fully dark adapted – Avoid white light (Including phones / torches)

Sky looking west late evening in late August



The orange star Arcturus is found by following the curve of stars in the handle of the Plough down. The constellation of Bootes, resembles a `kite` or `Club` in shape. The star Izar is a beautiful orange/ blue double star visible in small telescopes. To the east of Bootes find the `horseshoe` shaped constellation of Corona Borealis (Northern Crown) and the `Keystone` Asterism in the constellation of Hercules. Hercules also has M13 the famous Globular Cluster, visible to the unaided eye as a misty patch; telescopes show the true wonder of this cluster with over 750,000 stars. Likewise another nice globular is M92 in Hercules.