

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.

Comet C/2020 F3 NEOWISE which has been an absolute delight to observe as the brightest unaided comet since Comet Hale –Bopp some 23 years ago remains a good binocular object during the first two weeks in August, but is fading as it recedes from the Sun on its 7000+ year orbit. Positioned in the NW aspect in late evening twilight, binoculars show a bright coma and diffuse curving dust tail, but catch it before it slips into the evening twilight (see notes).

Jupiter just past opposition shines brightly in the south east aspect located low in the constellation of Sagittarius. Also in the southern aspect located in Sagittarius to the east of Jupiter find a distinctive yellow star. This is the ringed planet Saturn, although rather low as seen from the UK, Saturn's ring system is now wide open, a classic view of this gem of the solar system. Small telescopes will show the rings and the brightest moon Titan. Larger telescopes show up to six or so fainter moons and any white oval features on the planets disk. Details of observing prospects for Jupiter and Saturn are given in LAS Newsletters No 248 and No 249 respectively.

By late evening from mid month onwards the Red Planet Mars can be seen positioned low in the east in the constellation of Pisces. Mars reaches favourable opposition in October and continues to brighten and its apparent diameter increases throughout the month – Telescopes show the planets red colour, subtle dark features and prominent white southern polar cap – Mars reaches its perihelion point (closest distance from the Sun) on August 3rd marking the Martian summer 'dust storm season' - Martian dust storms have been known to obscure the planets surface features for months – just how much obscuration will occur as we approach opposition and optimum observing conditions will become apparent over the next few months.

Planet Uranus is visible 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.

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 but the constellation known for the 'Teapot' asterism of stars 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 teapot 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 peak occurs August 12th between 14:00 hrs and 15:00 hrs UT in UK daylight. The peak favouring the far east observers, however UK observers can still catch the ramp up in activity evening of August 11th and post peak activity August 12th and August 13th Conditions this year are quite favourable before moonrise of the waxing gibbous Moon around 23:38 BST on August 11th. If you have clear conditions in

the late evening of the 11th, 12th, 13th 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 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.

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.

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 to find 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 2020

Mercury, is at superior conjunction on 17th August and returns poorly placed to evening twilight by month end.

Venus reaches greatest elongation on 13th August, shining brightly -4.3m, dichotomy is around this date .

Mars is located low in late evening skies during August and brightens to -1.7m and apparent diameter 18.4”

Jupiter located in the constellation of Sagittarius low in the south, notable shadow transit of Callisto August 11th shadow ingress 19:43 BST, shadow egress 23:55 BST [Moderate telescope >150mm aperture required]

Saturn now visible early evening low in the south in Sagittarius - a good time to see this ringed `gem`.

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 19th Moonless, best time for deep sky observing and meteor watching (see notes)

First Quarter Aug 25th Best days to see shadow details in lunar craters (early evening)

Full Moon Aug 3rd Best days to see bright ray craters like Copernicus / Tycho.

Last Quarter Aug 11th Moon visible in daytime skies. Do not look directly at the Sun.

Meteor showers Perseid July 23rd to Aug 20th, pre peak Aug 11th (late evening) before moon rise.
Visually 30 to 50 per hour at peak – Fast meteors with bright persistent trails.

The highlights of the month.

Comet C/2020 F3 NEOWISE binocular object late evening in early August (see notes)

Perseid Meteor Shower, moonless evenings

Saturn very low in south in Scorpius , rings open at 22° DE [tilt] showing Saturn’s North Pole.

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

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 your on holiday in a dark site and trace out the star fields and dark rifts through Cygnus, Aquila, Scutum and down into Sagittarius.

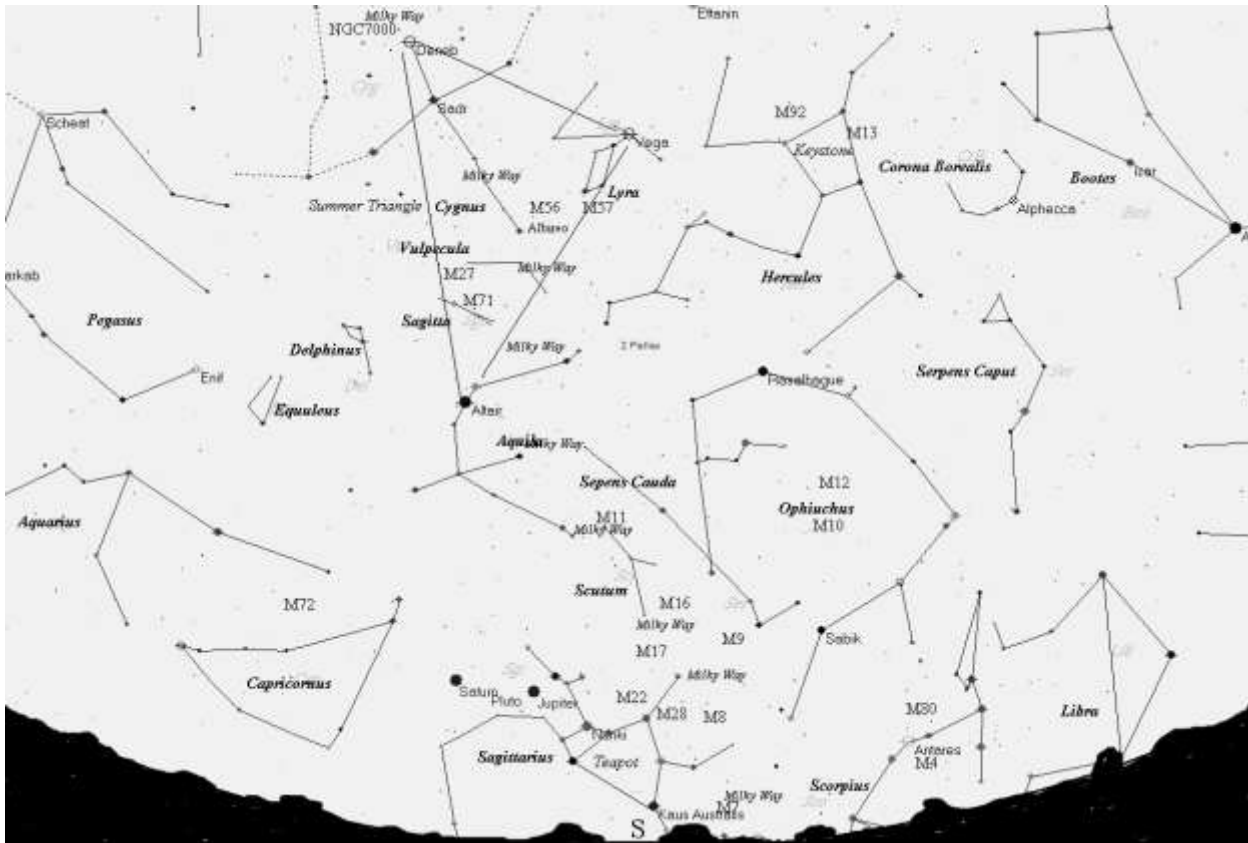
DSLR astrophotography - Sky photography on moonless evening – 28mm /50mm lens – manual focus to infinity. Set ISO / ASA 1600, exposure 30s, remote cable release , tripod mounted – Have a go at capturing some of the star fields through Cygnus around Deneb (NGC 7000 N.American Nebula) / Scutum - you may 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, 4 % waxing crescent moon is visible **after sunset** on August 20th to moonset at 20:59 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

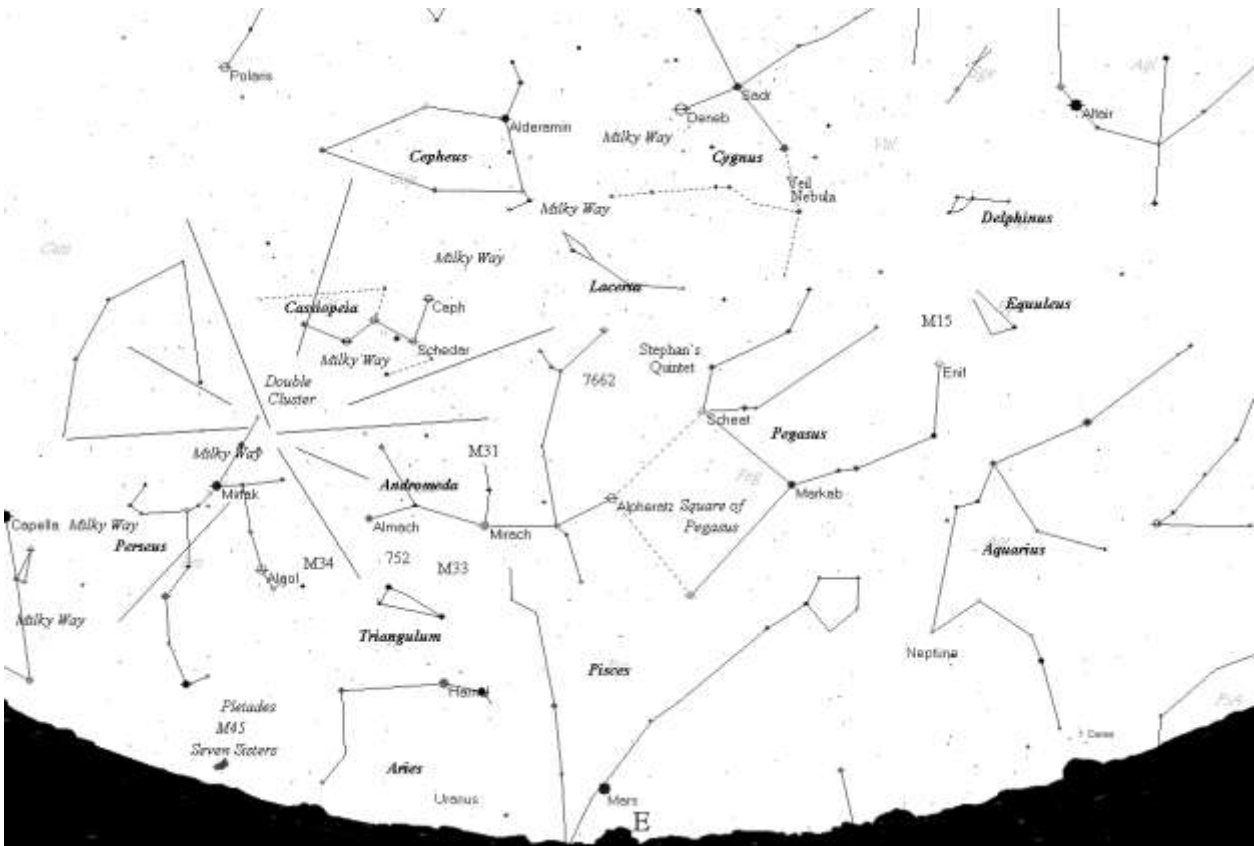


In the south the ringed planet Saturn and Jupiter are both currently located east of Sagittarius and the Teapot asterism.

From the UK we only see the head; the rest of the constellation is visible from more southerly locations. Catch a glimpse in July / 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

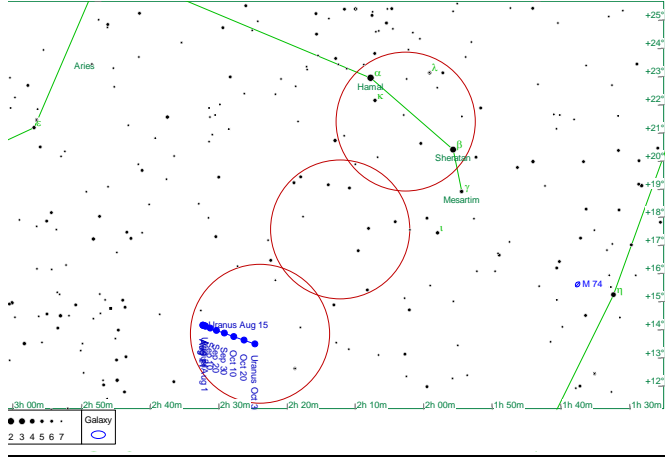
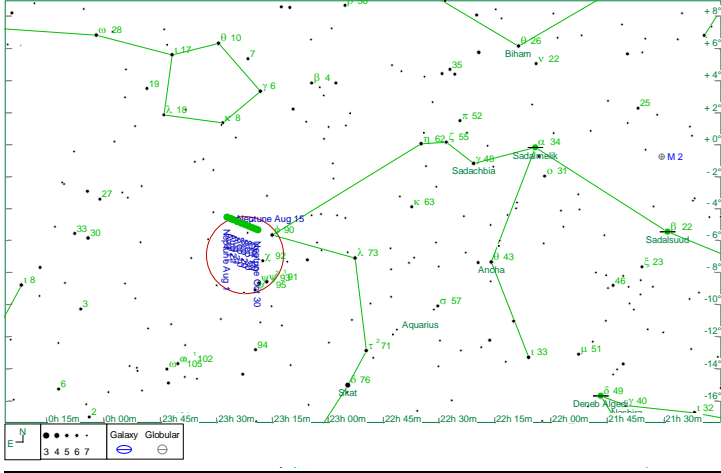


Around August 11th, 12th and 13th keep a watch for Perseid meteors, look away from the Radiant (Perseus) to catch a glimpse of the meteors – late evening / early morning , peaking August 11th/12th . Typically 30 meteors per hour, but you may go for a while between seeing a meteor. With waxing gibbous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

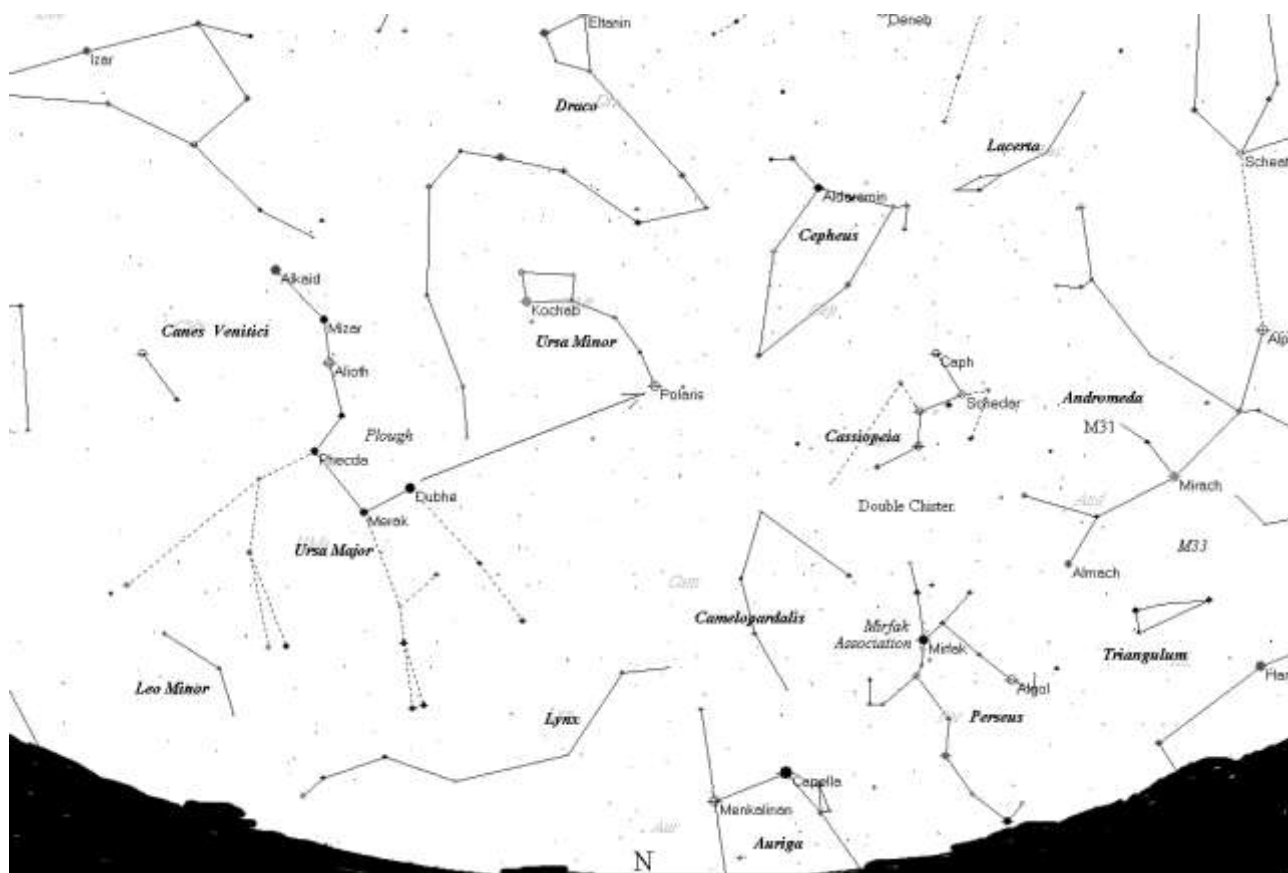
In August, the summer constellations of Lyra and Cygnus are high overhead by late evening, the Milky Way may be visible on moonless evenings from a dark site. Stretching from low in the south east to low in the north west, this misty band is best seen with binoculars, follow the star fields from Altair, along the galactic plane , down through Scutum and into Sagittarius is stunning in a dark sky.

Mars rises by 11pm , mid month , unmistakable red in colour and shining brightly at -2m magnitude

Neptune is located in Aquarius , 7.8m and Uranus 5.6m magnitude is placed low in Aries both are also visible low in late evening but better placed during autumn nights . (LAS Newsletters No 253 and No 254)



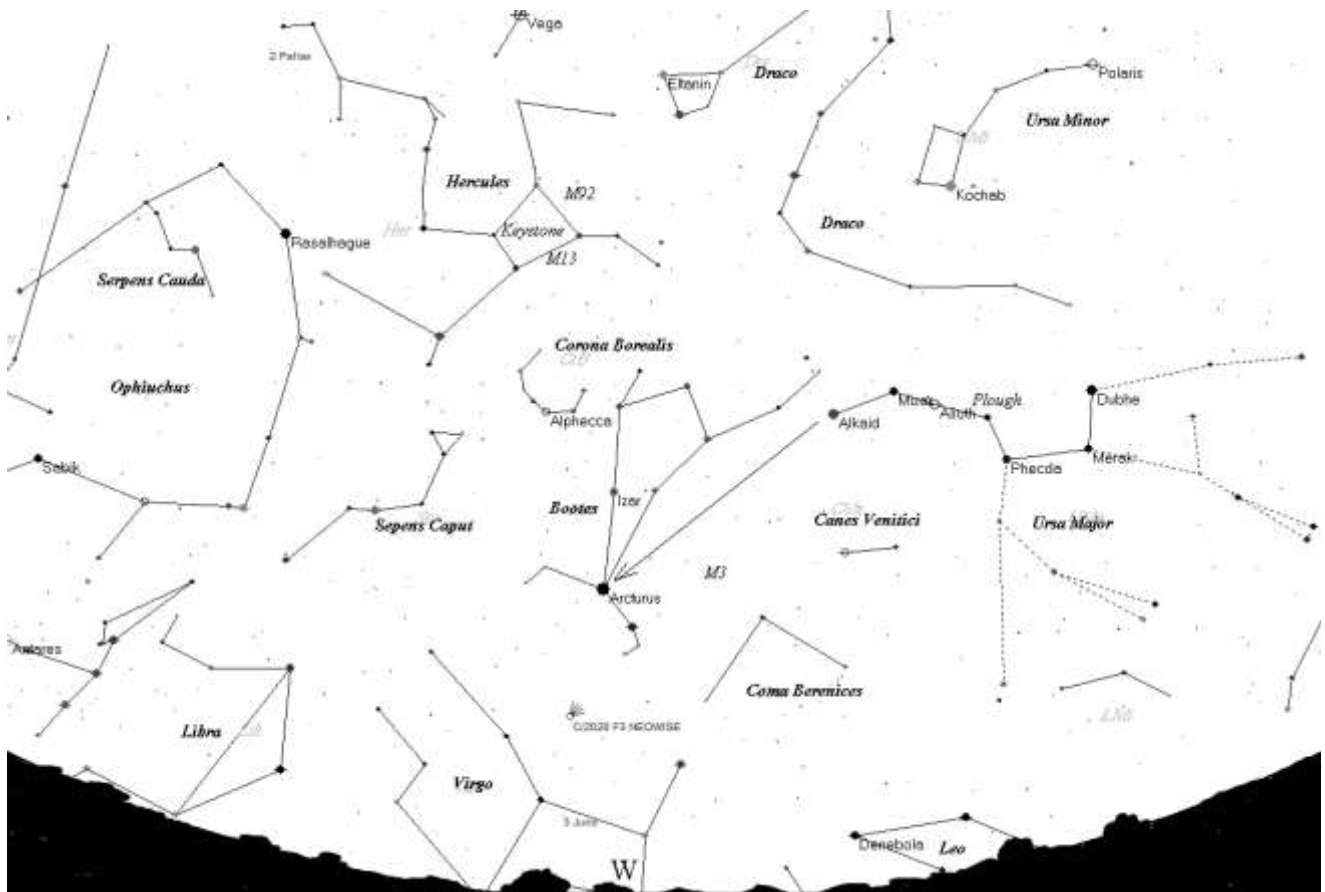
Sky looking north at 11pm BST late August



Perseus rising late evening – radiant of the Perseids meteor shower (see notes) typically 30 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.

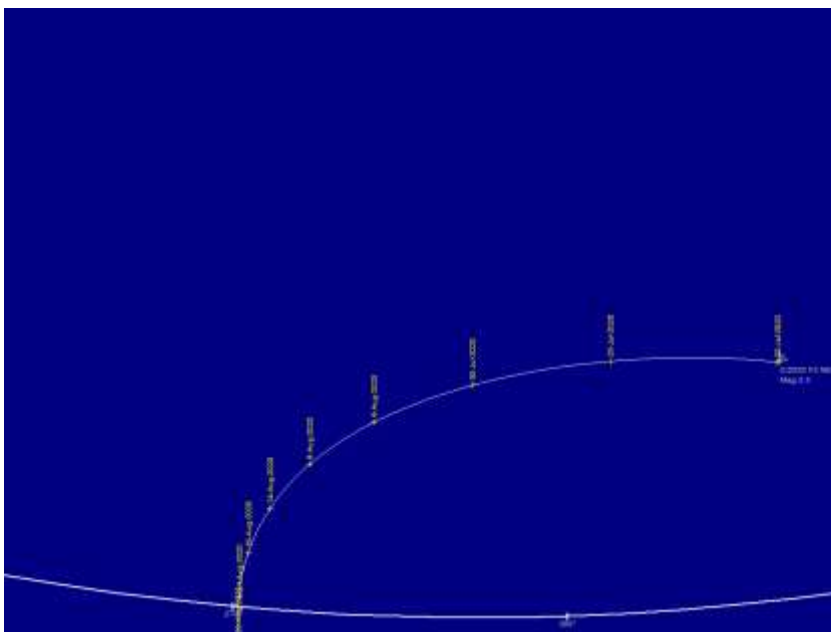
Sky looking west at 11pm BST late August



The orange star Arcturus is found by following the curve of stars in the handle of the Plough down. The constellation of Boötes, 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 Boötes 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.

Comet C/2020 F3 NEOWISE heads into western twilight

– binocular object best seen early August LAS Newsletter No 246C



Plot of comet position (Altitude and compass bearing (Azimuth))

Ephemeris of comet C/2020 F3 NEOWISE				
Date	Time	Altitude	Azimuth	Mag
01 Aug 2020	23:00:00	+20° 02' 00"	286° 53' 23"	4.6
02 Aug 2020	23:00:00	+19° 14' 34"	284° 56' 19"	4.8
03 Aug 2020	23:00:00	+18° 24' 39"	283° 09' 54"	5.0
04 Aug 2020	23:00:00	+17° 32' 56"	281° 33' 32"	5.2
05 Aug 2020	23:00:00	+16° 39' 58"	280° 06' 37"	5.4
06 Aug 2020	23:00:00	+15° 46' 13"	278° 48' 27"	5.6
07 Aug 2020	23:00:00	+14° 52' 02"	277° 38' 24"	5.8
08 Aug 2020	23:00:00	+13° 57' 44"	276° 35' 49"	5.9
09 Aug 2020	23:00:00	+13° 03' 32"	275° 40' 05"	6.1
10 Aug 2020	23:00:00	+12° 09' 37"	274° 50' 37"	6.3
11 Aug 2020	23:00:00	+11° 16' 07"	274° 06' 55"	6.5
12 Aug 2020	23:00:00	+10° 23' 08"	273° 28' 27"	6.6