

The January night sky now sees some familiar winter constellations rising by early evening, the winter night sky contains many fine objects to view with both binocular and small telescopes. Venus shines brightly in evening twilight in conjunction with planet Neptune on Jan 27<sup>th</sup>. Planet Uranus in the constellation of Aries is the other binocular /telescopic planet visible in the early evening skies.

There is a Penumbral Lunar Eclipse; the whole of eclipse is visible from UK Jan 10<sup>th</sup> (5:07 pm to 9:12 pm) however the Moon passing through Earth's outer (penumbra) shadow just dims the Moon to a pale yellow colour. Watch the Moon Illusion at moon rise is 3:50 pm and then watch the moon fade in brightness during the penumbral eclipse, Full Moon appearance is restored by 9:12 pm.

The constellations of Cygnus and Lyra can be seen slipping into the west early evening; these are noted for the bright stars of Deneb and Vega which appear low in the north by late evening, both stars are circumpolar, i.e. are above the horizon from UK latitude.

The Milky Way stretches from the constellation of Auriga, marked by the bright star Capella in the east up into Perseus and through the 'W' shaped constellation of Cassiopeia high overhead and down along the cross shaped constellation of Cygnus low in the west. This faint band of stars best seen on dark moonless evenings

Auriga has the bright star Capella, which is circumpolar from UK latitudes and so is always visible. The constellation of Auriga contains some nice star fields and star clusters visible in binoculars.

In the south west the constellation of Pegasus, noted for its 'Square' shape and the adjacent constellation of Andromeda noted for The Andromeda Galaxy (M31), visible to the unaided eye as a faint fuzzy patch on moonless evening can now be seen mid evening. The Square of Pegasus is a useful sign post constellation and also is a good test for sky conditions, (how many faint stars you see within the square indicates just how good your seeing conditions are). Follow the two end stars (Scheat and Markab) down to find the star

In the north Ursa Major, The Plough or The Great Bear is seen low with its handle or tail parallel to the horizon mid evening. Use the right hand pair of stars Dubhe and Merak (The pointers) to find the faint pole star Polaris and hence the position of North.

Look to the east early evening to see the seven sisters' (Pleiades, M45) star cluster and constellation Taurus. The Hyades star cluster makes the characteristic 'V' shaped asterism in the constellation of Taurus and is noted for the bright, red foreground star Aldebaren in Arabic Al Dabaran is 'The follower' of the Pleiades across the skies', in old English known as *Oculus Tauri*, 'the eye of the bull'. Also in Taurus is the famous 'Crab Nebula' M1, the first object catalogued by French astronomer Charles Messier, it is a remnant from a supernova explosion witnessed by Chinese observers in AD1054. Telescopically it looks like a grey oval shaped nebula, but larger instruments show some detail ie extensions that give it its name, looking like the claw of a crab. At the centre of the Crab Nebula is a rapidly rotating pulsar star, the remains of the supernova, surrounded by the expanding shell of gas that is the Crab Nebula.

By mid evening the familiar winter constellations of Orion (The Hunter) is rising with bright red star Betelgeuse (top left), white star Rigel (bottom right) and the three stars of Orion's belt Mintaka, Alnilam and Alnitak. Below Orion's belt can be seen the misty patch that is M42 / M43, visible to the unaided eye, it is one of the gem's of the winter skies when seen with a telescope. This nebula some 30 light years across is illuminated by a group of four hot young stars that is known as the 'Trapezium' asterism, visible under moderate magnification.

The Quadrantids meteor shower reaches maxima January 4<sup>th</sup>, favourable chance in seeing these blue/ yellow meteors on evenings over the period January 1<sup>st</sup> to January 6<sup>th</sup>.

Comet 2017 T2 PanSTARRS is a telescopic / binocular object moving night to night through the constellation of Perseus (see notes) and is located near to the Double Cluster (NGC 884 / 869) in late January, magnitude 9.5m.

## Planets in January 2020

Mercury is at superior conjunction Jan 10<sup>th</sup>, returning to evening twilight late Jan.

Venus located in the evening twilight is prominent by late Jan, brilliant -4.0m, phase reducing 0.843 to 0.754.

Earth reaches perihelion, its closest point in its orbit to the Sun on January 5<sup>th</sup> distance 147,091,144 km.

Mars is visible low in pre dawn skies slipping past the red star Antares in the constellation of Scorpius

Jupiter slips into morning twilight by late Jan. (poorly placed)

Saturn is in conjunction on Jan 13<sup>th</sup> and is not visible in January.

Uranus is visible early evening in the constellation of Aries (Binocular / Telescope required).

Neptune is located in Aquarius low in evening twilight, conjunction with Venus just 0.08° apart on 27<sup>th</sup> Jan

## Moons phases in January 2020

New Moon Jan 24<sup>th</sup> Moonless, best time for deep sky observing.

First Quarter Jan 3<sup>rd</sup> Best days to see shadow details in lunar craters (early evening)

Full Moon Jan 10<sup>th</sup> Best days to see bright ray craters like Copernicus / Tycho.

Last Quarter Jan 17<sup>th</sup> Moon visible in daytime skies. Do not look directly at the Sun.

## Meteor shower s

Quadrantids range Jan 1<sup>st</sup> to Jan 6<sup>th</sup>, Max Jan 4<sup>th</sup> ZHR 80 / hour – Favourable

## The highlights of the month.

Milky Way is visible high overhead on moonless evenings in darker skies.

M31 the Andromeda Galaxy is visible on moonless evenings, best seen in binoculars.

Double cluster, on the Perseus /Cassiopeia border, nice pair of star clusters.

Pleiades (Seven Sister's) star cluster (M45) rising in the east best seen with binoculars.

Orion Nebula (M42) is a beautiful sight seen telescopically.

Beehive cluster (M44) visible to the unaided eye but best seen with binoculars.

Crescent Moon visibility, Jan 25<sup>th</sup> 0.7% thin crescent **Moon sets 17:07 GMT half a hour of sunset.**

**(Caution, always wait until the sun has completely set below the horizon before looking for crescent Moon)**

Jan 26<sup>th</sup> a more favourable 3.2% crescent Moon with Earthshine visible after sunset m moon set 18:16 GMT

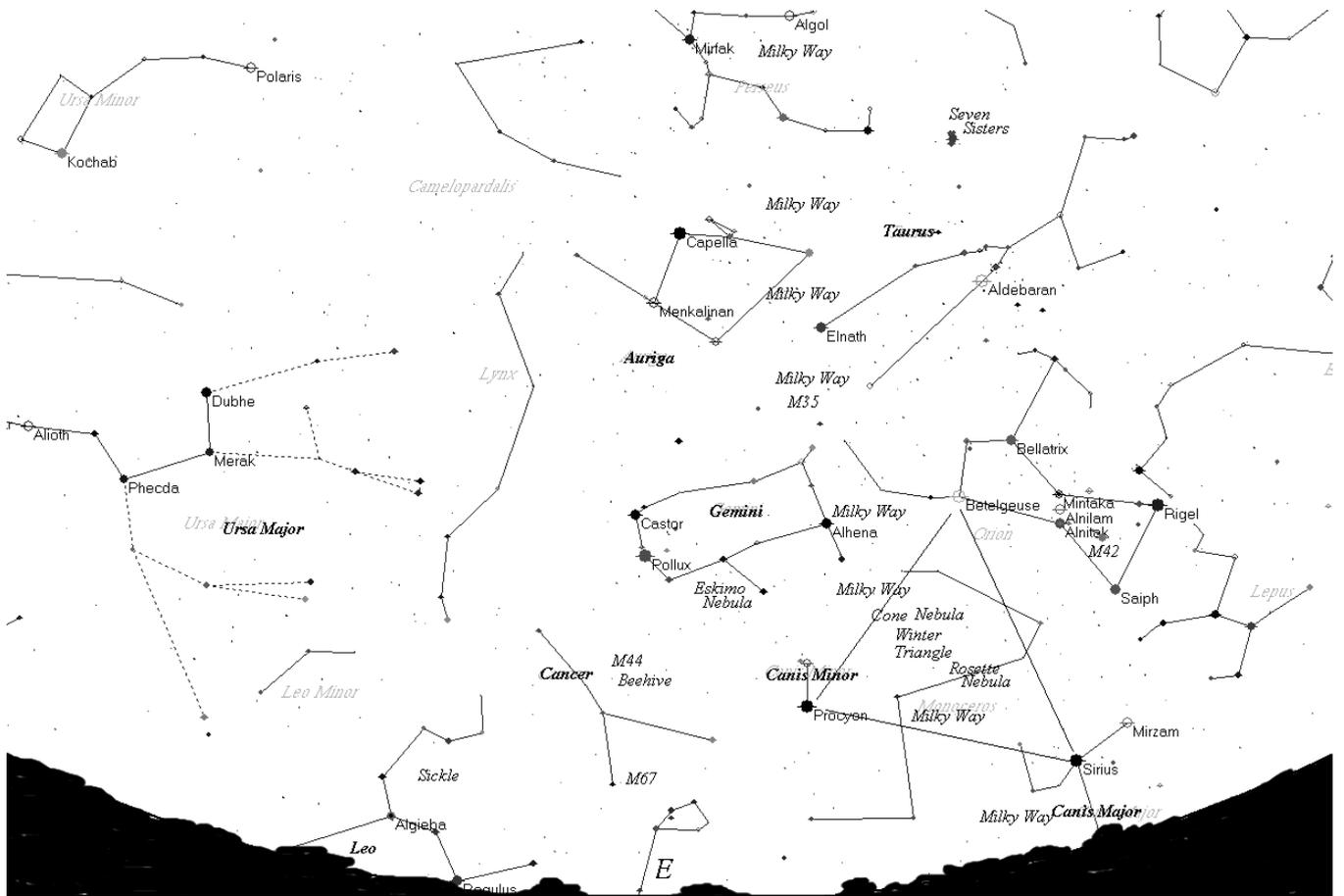
Comet 2017 T2 Panstarrs positioned in Perseus close to the Double Cluster (Telescopic / Binocular)

Penumbral Lunar Eclipse Jan 10<sup>th</sup> (17:07 to 21:12) – Moon appears pale in colour mid eclipse.

More detailed sky notes and LAS Newsletters, Finder charts are available to LAS members via the Members` page and details of planned Public open observing evening(s) please refer to LAS Website [www.lutonastrolink.org.uk](http://www.lutonastrolink.org.uk)

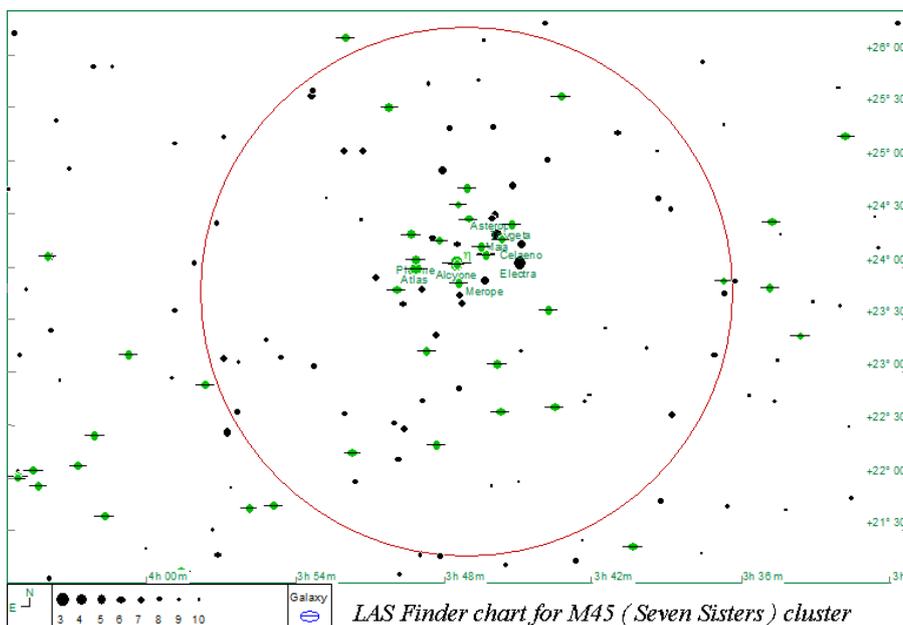


Sky looking east at 7pm late January 2019

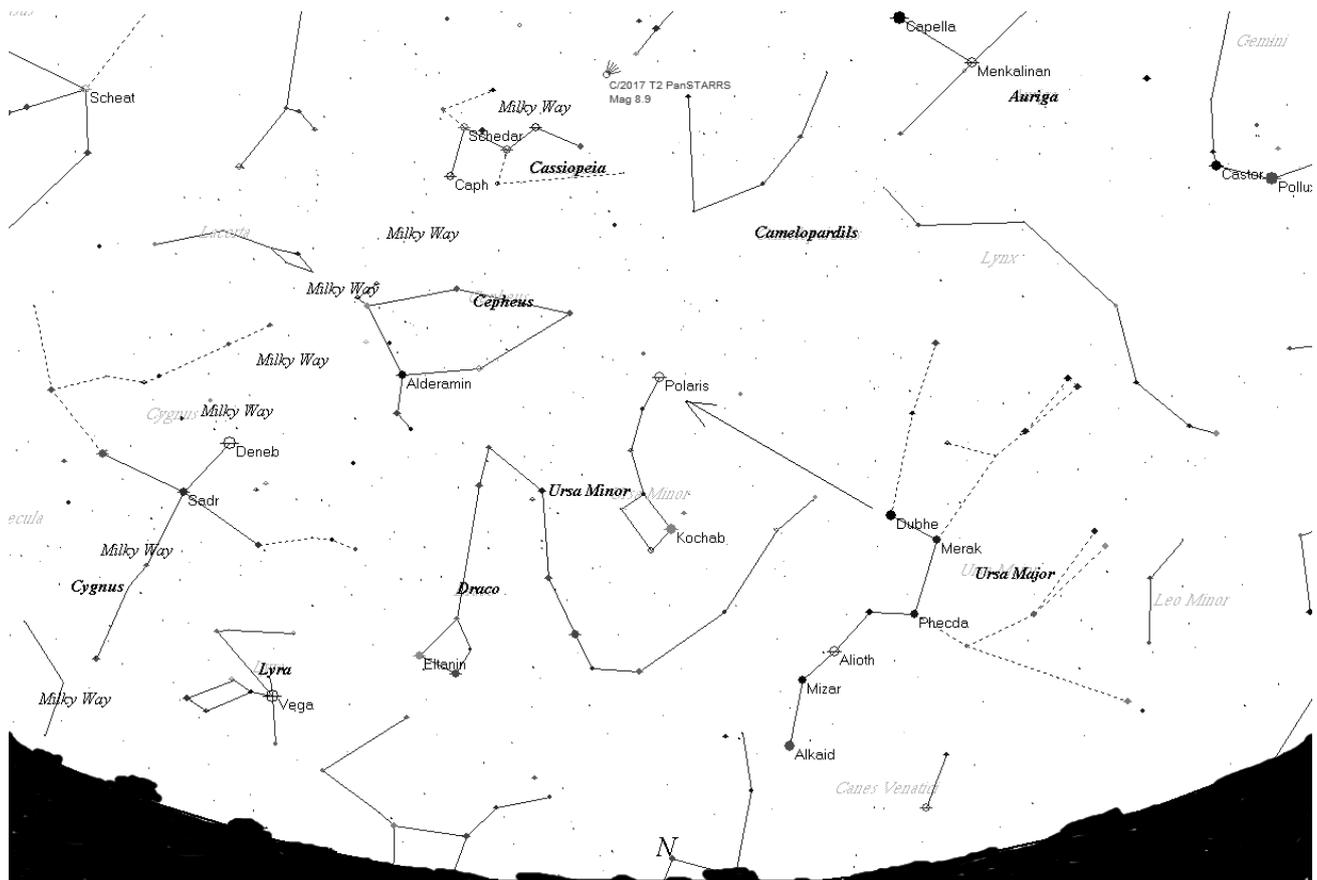


The constellations of Taurus, Auriga, Gemini and Orion can be seen rising early evening in January. The three stars Sirius, Procyon and Betelgeuse form the Winter Triangle asterism.

The Seven Sister's cluster (M45, Pleiades) is an easily identified star cluster. Some people with keen eyesight may see up to 13 stars (how many stars can you see with unaided eye?), but a telescope will show over 400 faint stars in the cluster. Circle represents the approximate field of View (FOV) of a 10x 50 binocular / Finderscope.



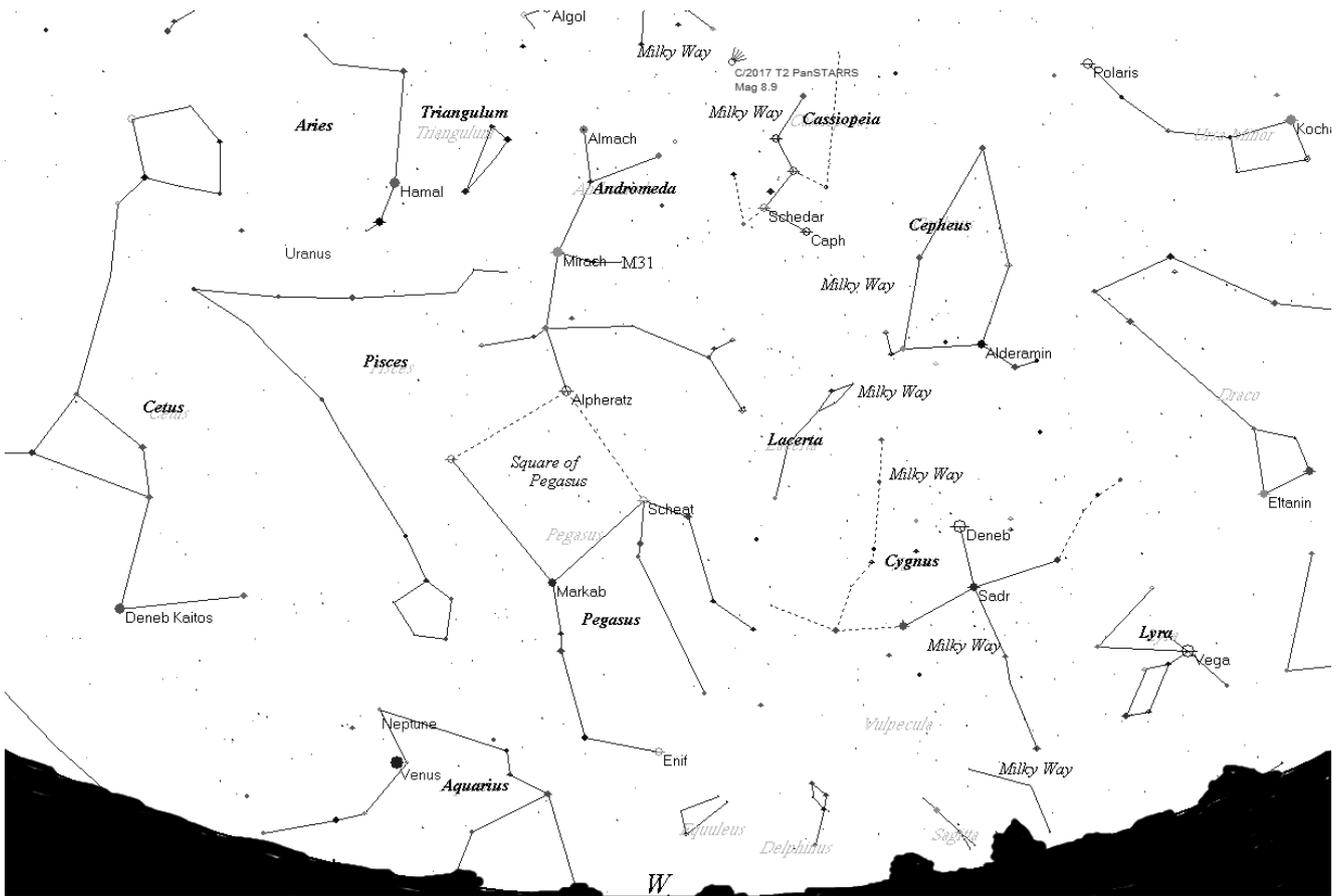
# Sky looking north at 7pm Late January 2020



The Plough stands on its handle follow the pointer's Dubhe and Merak to find the polestar Polaris

The 'W' shaped constellation of Cassiopeia looks more like a 'M' and is on the opposite side of the polestar to the Plough.

Sky looking west at 7 pm late January 2020



Looking west early evening Venus can be seen shining brightly from mid month onwards

Binocular / Telescopic comet 2017 T2 PanSTARRS moves night to night against the background stars of Perseus and is positioned close to the `Double Cluster` in late January . Use Cassiopeia to locate the Double Cluster

