

The April night sky now shows the spring constellations but with daylight saving time (BST) and the Sun moving north of the celestial equator, twilight skies mean later observing hours as we head into the summer months. The spring night sky contains many fine objects to view with both binocular and small telescopes and this month has a few notable events of special interest. The bright planet Venus returns to western twilight by late April and will remain in our evening skies throughout 2021. Venus has a conjunction with Mercury, the pair being separated by 1.3°, however in bright twilight it is a difficult observation **after sunset** on April 25<sup>th</sup>. Mercury heads north of Venus and by April 30<sup>th</sup> Mercury lies to the south of the seven sisters (M45), Pleiades cluster.

Full Moon on April 27<sup>th</sup> is a perigee 'Super moon' rising at 21:01 BST. The apparent diameter of the Moon is marginally increased at perigee at 33' 56". To see the Moon illusion, position yourself to look at moon rising with some foreground objects e.g. trees, a distant building etc and let your brain do the rest.

Galaxy hunting season is now 'open' the constellations of Leo and Virgo contain a number of Galaxies. The brighter member galaxies of the Virgo Super cluster are visible as small, faint misty patches in moderate sized telescopes on moonless clear evenings from a dark observing site. Use the star Vindemiatrix as a starting point, to view the chain of brighter galaxies including M87 which are visible as tiny 'smudges'.

Our own Milky Way galaxy stretches from the constellation of Auriga, marked by the bright star Capella overhead through the constellations of Perseus and Cassiopeia and down into the north west. This faint band of stars is best seen on clear dark moonless evenings from darker locations outside the town.

The familiar asterism of the plough in the constellation of Ursa Major, The Great Bear is seen high in the north east with its handle or tail pointing towards the horizon mid evening. Use the right hand pair of stars Dubhe and Merak (Use the pointers) to find the faint pole star Polaris and the position of North.

The spring constellation of Leo rises early evening, the brightest star Regulus and the 'reversed question mark' shaped star asterism of 'The Sickle' makes this an easily recognisable constellation. Leo stretches eastward and is marked at the tail end by the star Denebola. Leo contains some moderately bright galaxy pairs visible in moderate sized telescopes on moonless evenings. M65/M66 and NGC 3628 form the famous galaxy triplet, all three galaxies being visible in the same telescopic field of view.

The galaxy rich constellations of Virgo and Coma Berenices can now be seen rising by mid evening and well placed due south by late evening. Some of the brighter galaxies may be seen as faint misty patches telescopically. Markarian's chain of galaxies stretching from the bright star Vindemiatrix towards the star Denebola in Leo contains the brighter galaxies M59, M60, M86 and M87 (See notes).

Low in the north east Lyra/ Hercules is the radiant for the April Lyrids meteor shower from mid April (maxima April 22<sup>nd</sup>), best seen in the early hours but with a rather low zenith hourly rate (ZHR) of just 15 meteors per hour, however moonlight interferes. Lyra heralds the approach of summer skies.

The orange star Arcturus in the constellation of Bootes [The Herdsman] is the brightest star (north of the celestial equator). Bootes shaped rather like a 'Kite' is easily recognisable in the spring night sky rising in the east by late evening. Also in the north east aspect is the constellation of Hercules of which the four stars forming the 'Keystone' asterism are easily spotted. About 1/3 down the right hand side of the 'keystone' M13 a beautiful globular cluster can be seen telescopically – the cluster of stars may contain up to 750,000 stars in total. Above the keystone M92 is another globular cluster, almost rivalling M13 telescopically.

Asteroid No 9 Metis reaches opposition on April 4th at magnitude 9.6m is a faint object in Virgo – a star like point moving night to night against the background stars using larger binoculars. Asteroid No 4 Vesta at magnitude is a brighter 6.4m object in Leo visible in binoculars (see notes) LAS Newsletters No 289 and No 281A respectively.

Nova Cassiopeiae 2021 (discovered on March 18<sup>th</sup>) at 7.9m may fade by early April - see notes (LAS Newsletter No 286)

## Planets in April 2021

Mercury is at Superior Conjunction on April 19th, emerging into our evening twilight skies late April.

Venus shines brilliantly at -3.9m, emerging low in our evening twilight skies by late April. A conjunction with Mercury occurs on April 25<sup>th</sup> as Mercury slips northward past Venus over the next few days.

Mars moves eastward through Taurus into Gemini by late April, apparent diameter is only 5 arc sec.

Jupiter is low in dawn skies moving from Capricornus into Aquarius by late Apr, shining brightly at -2.1m.

Saturn is also low in dawn twilight in Capricornus, +0.7m, Tilt remains at 17° showing the rings nicely in 2021.

Uranus is low in twilight evening in early Apr but is lost into daytime skies, conjunction is on April 30<sup>th</sup>.

Neptune – emerges into dawn skies but best seen in autumn.

Meteor showers – April Lyrids range Apr 14<sup>th</sup> / 30<sup>th</sup> maxima Apr 22<sup>nd</sup> ZHR 15/ hour – Moon interferes

Eta Aquarids range Apr 19<sup>th</sup> / May 28<sup>th</sup>, maxima May 6<sup>th</sup> / 7<sup>th</sup> ZHR 40/hour - Low in UK skies.

## Moons phases in April

New Moon	April 12 <sup>th</sup>	Moonless, best time for deep sky observing and comet observing.
First Quarter	April 20 <sup>th</sup>	Best days to see shadow details in lunar craters (early evening)
Full Moon	April 27 <sup>th</sup>	Best days to see bright ray craters like Copernicus / Tycho. (Perigee Moon)
Last Quarter	April 4 <sup>th</sup>	Moon visible in daytime skies. <b>Do not look directly at the Sun.</b>

## The highlights of the month

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

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

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

Telescopic triplet of galaxies M65/M66/NGC3628 in the constellation of Leo.

Virgo cluster of Galaxies, brighter members of the cluster can be seen with small telescopes or binoculars.

Moon illusion at moon rise April 27<sup>th</sup> (Perigee - Super moon)

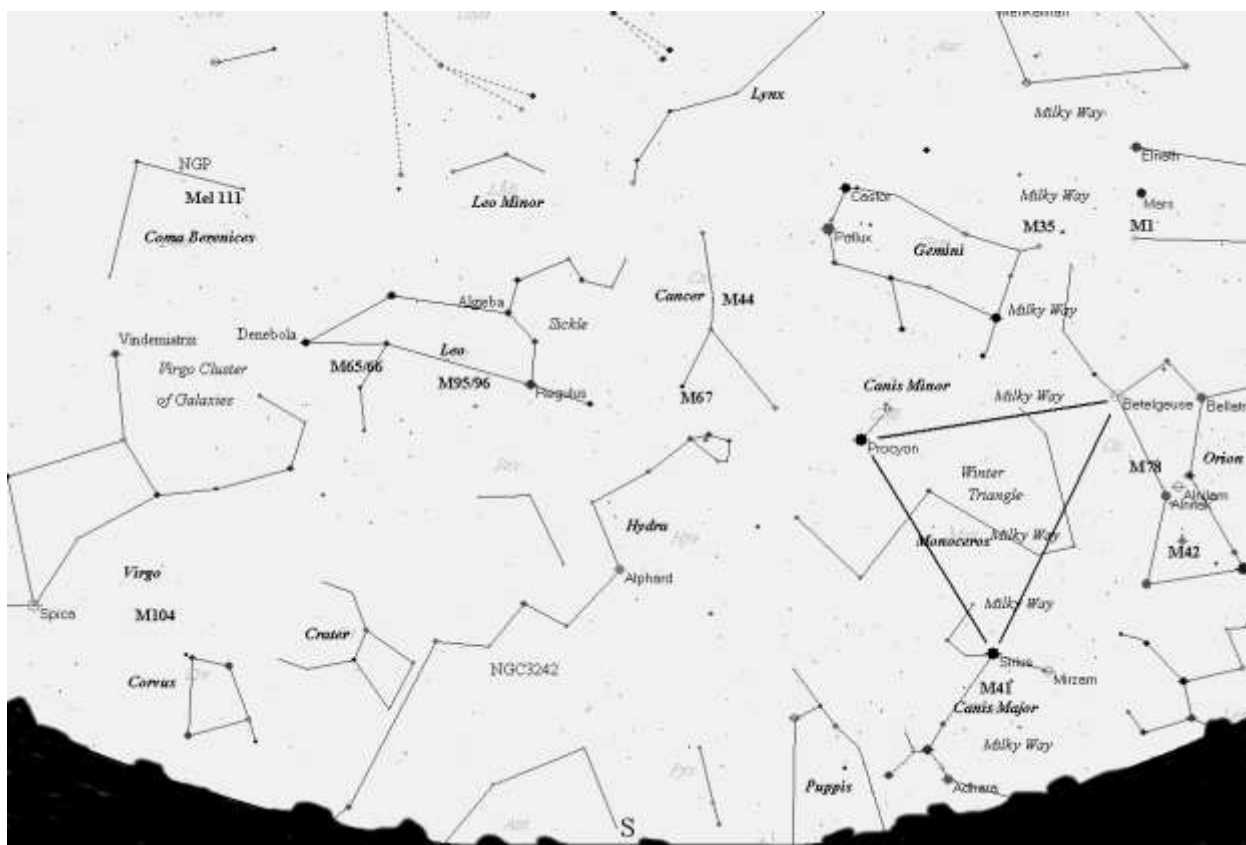
Asteroid 4 Vesta visible in Leo (Binoculars required)

## Crescent moon visibility

13<sup>th</sup> April a 2.6% waxing crescent Moon is visible low in the west **after sunset**, Earthshine faintly illuminates (April 14<sup>th</sup> / 15<sup>th</sup>)

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](http://www.lutonastrolink.org.uk)

Sky looking south at 9pm British Summer Time (BST) mid month

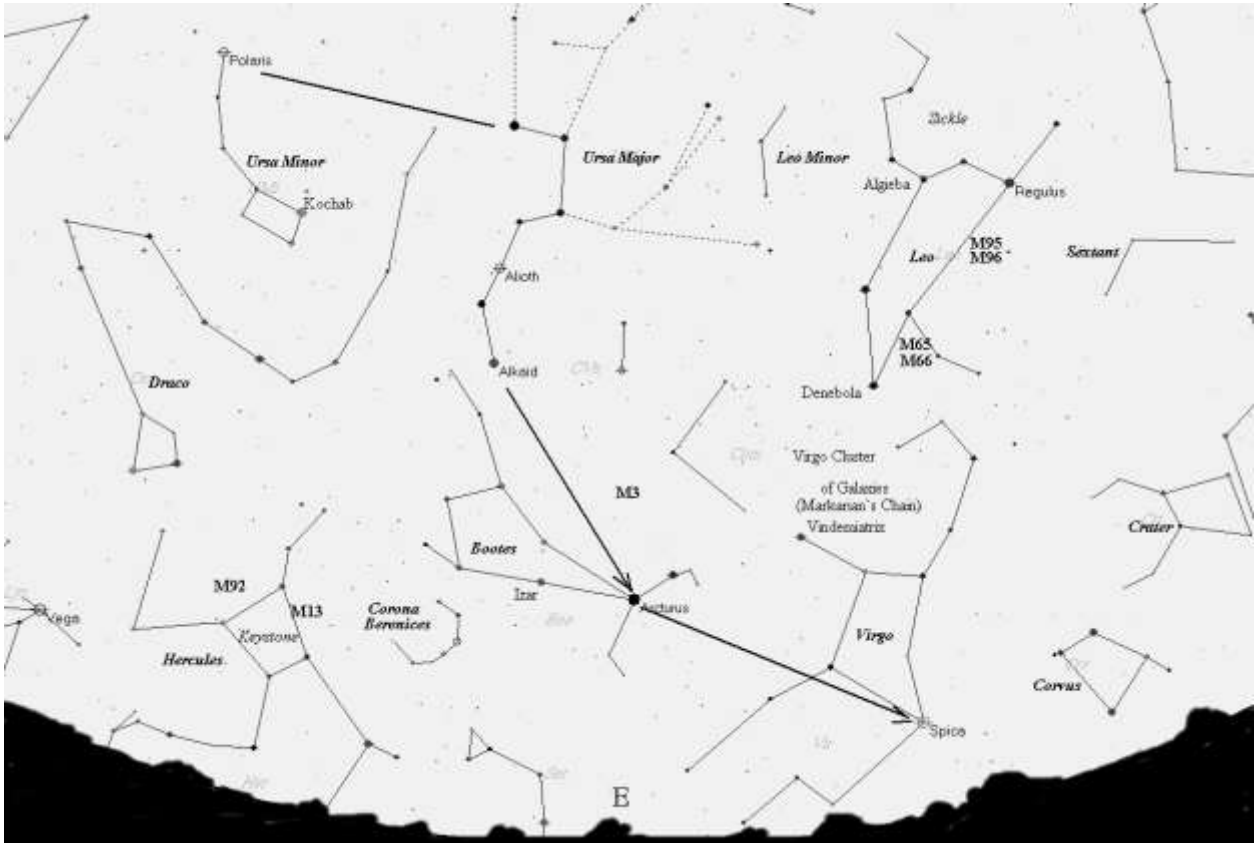


Gemini is placed high in the south west with Castor leading Pollux across the sky. To the south the constellation of Leo noted by the bright star Regulus and the `Sickle` asterism of stars and outstretched body resembles a crouching lion , with the star Denebola at the tail end. Between Pollux and Regulus, binoculars show the nice `Beehive` star cluster in the constellation of Cancer.

Telescopes show galaxies such as the three edge on spiral M65, M66 and NGC 3628 the famous Leo Triplet.

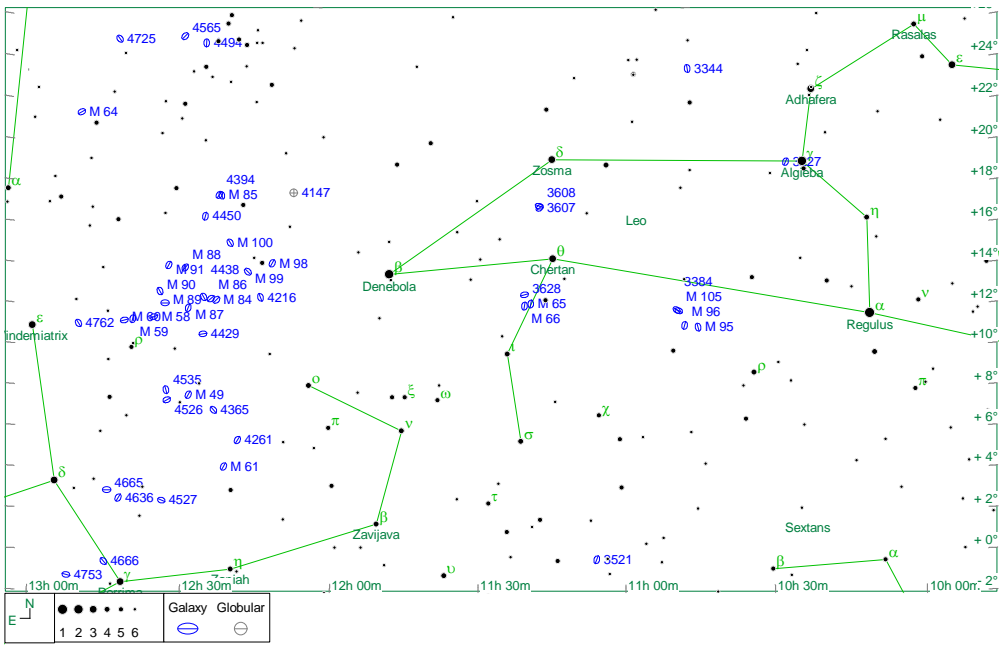
The Virgo cluster has many faint galaxies , the brightest member galaxies can be seen as faint `smudges` using binoculars from a dark observing site on clear moonless evenings.

Sky looking east at 9pm BST mid month

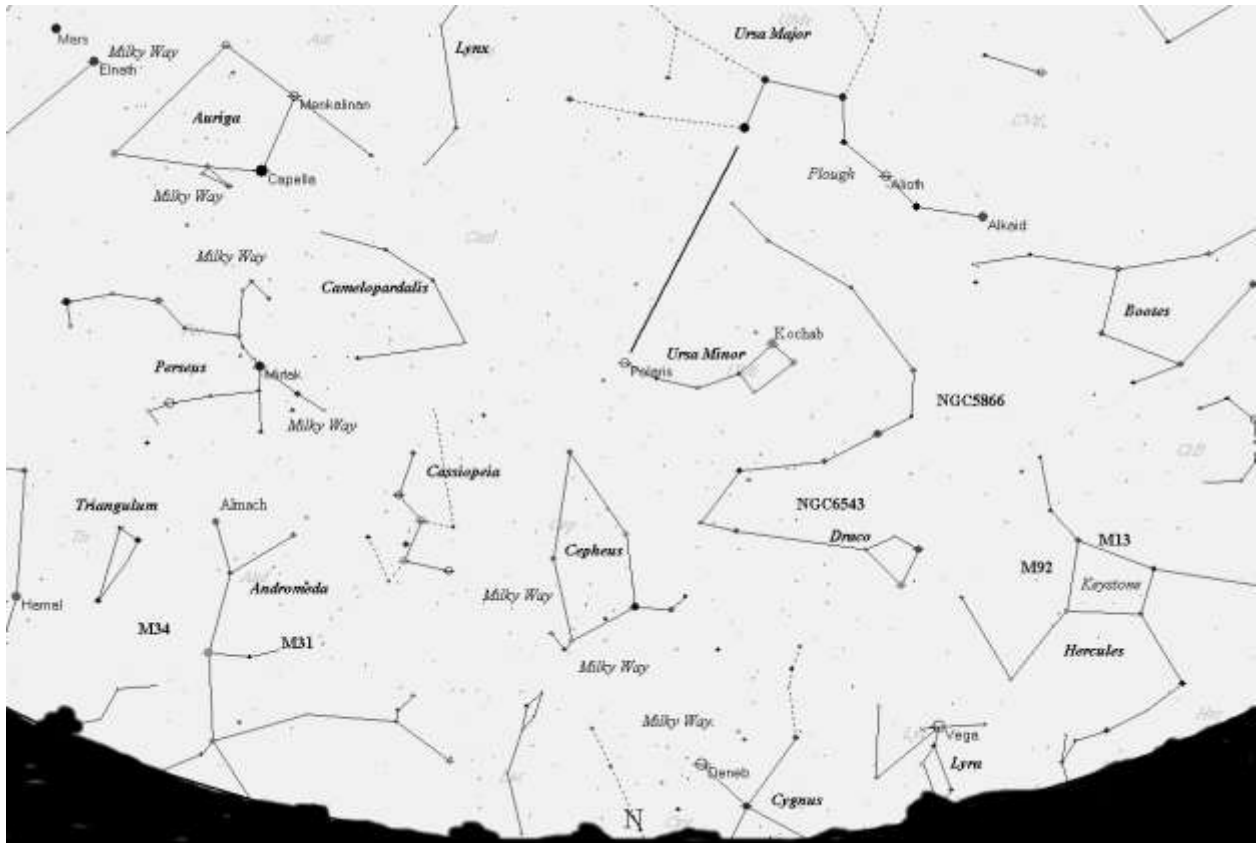


The spring constellations now appear in the eastern sky by mid evening. The orange star Arcturus is found by following the curve of stars in the handle of the Plough down. The constellation of Bootes, resembles a `kite` or `Club` in shape. The star Izar is a beautiful orange/ blue double star visible 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.

The bright white star Spica in the constellation of Virgo is easily found. Virgo has the super cluster of Galaxies, some of the brighter member galaxies can be seen as misty patches or ovals using modest telescopes. Finder charts see notes; more detailed finder charts are available on the LAS Member's page (also see highlights notes of the month)



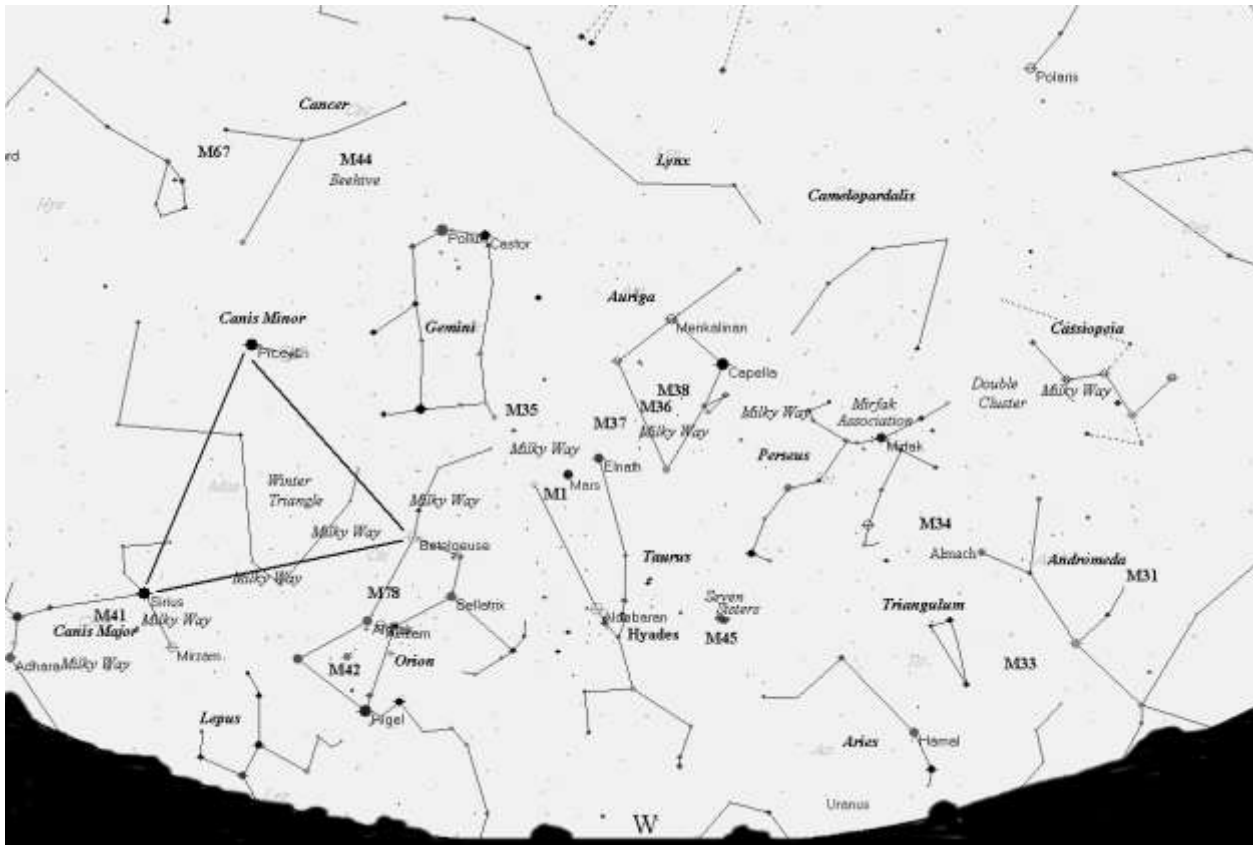
Sky looking north at 9pm BST mid month



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

The `W` shaped constellation of Cassiopeia is found on the opposite side of the polestar to the Plough. Low in the northeast the bright star Vega in the constellation of Lyra skirts the horizon, rising by late Evening. Lyra is associated with the radiant of the April Lyrids meteor shower. Rates of these meteors, derived from Comet C/1861 Thatcher are rather low, range April 14<sup>th</sup> to 30<sup>th</sup>. moonlight interferes.

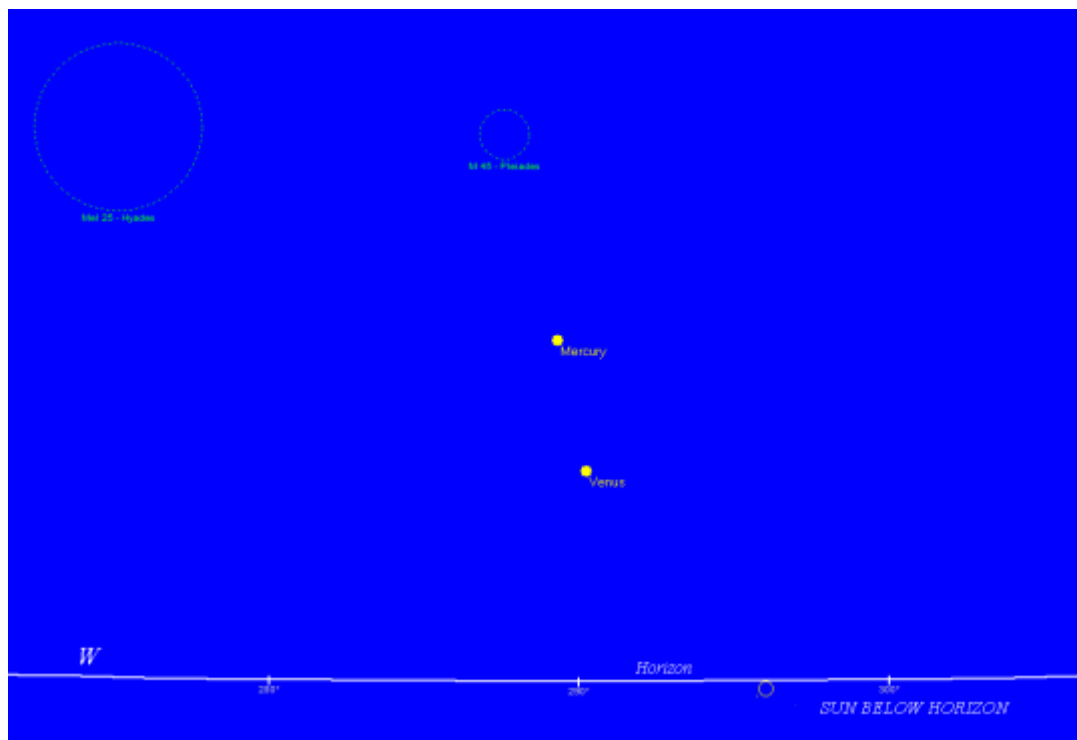
Sky looking west at 9pm BST mid month



In the west the familiar winter constellations head into evening twilight. The Pleiades [*Seven Sisters*] star cluster (M45) is an easy spot together with the 'V' shaped star cluster of the Hyades.

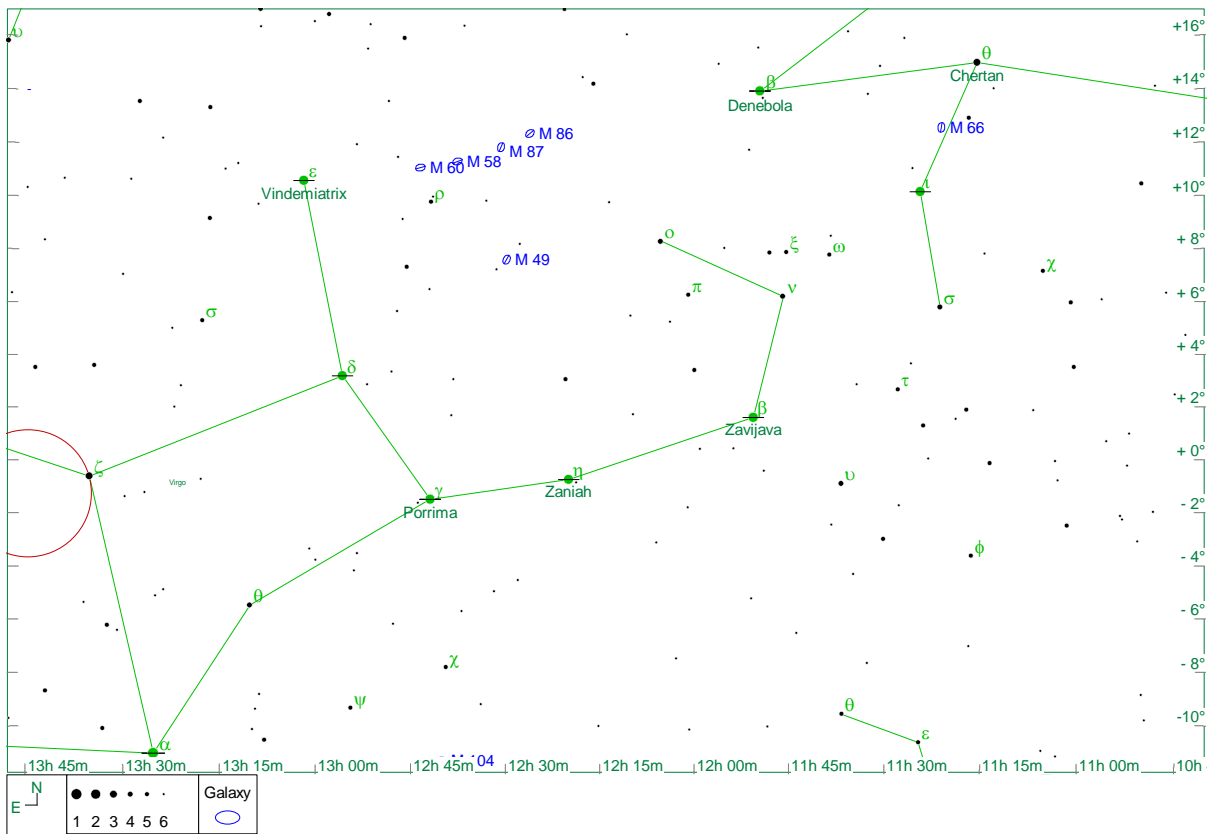
By month end (April 30<sup>th</sup>) Venus and Mercury are visible very low in evening twilight (**after sunset**), Mercury moves north of Venus and towards the *Seven Sisters* star cluster. Venus sets at 21:14 BST on April 30<sup>th</sup>.

**CAUTION** Always ensure that the Sun is completely below the horizon before looking for Venus / Mercury

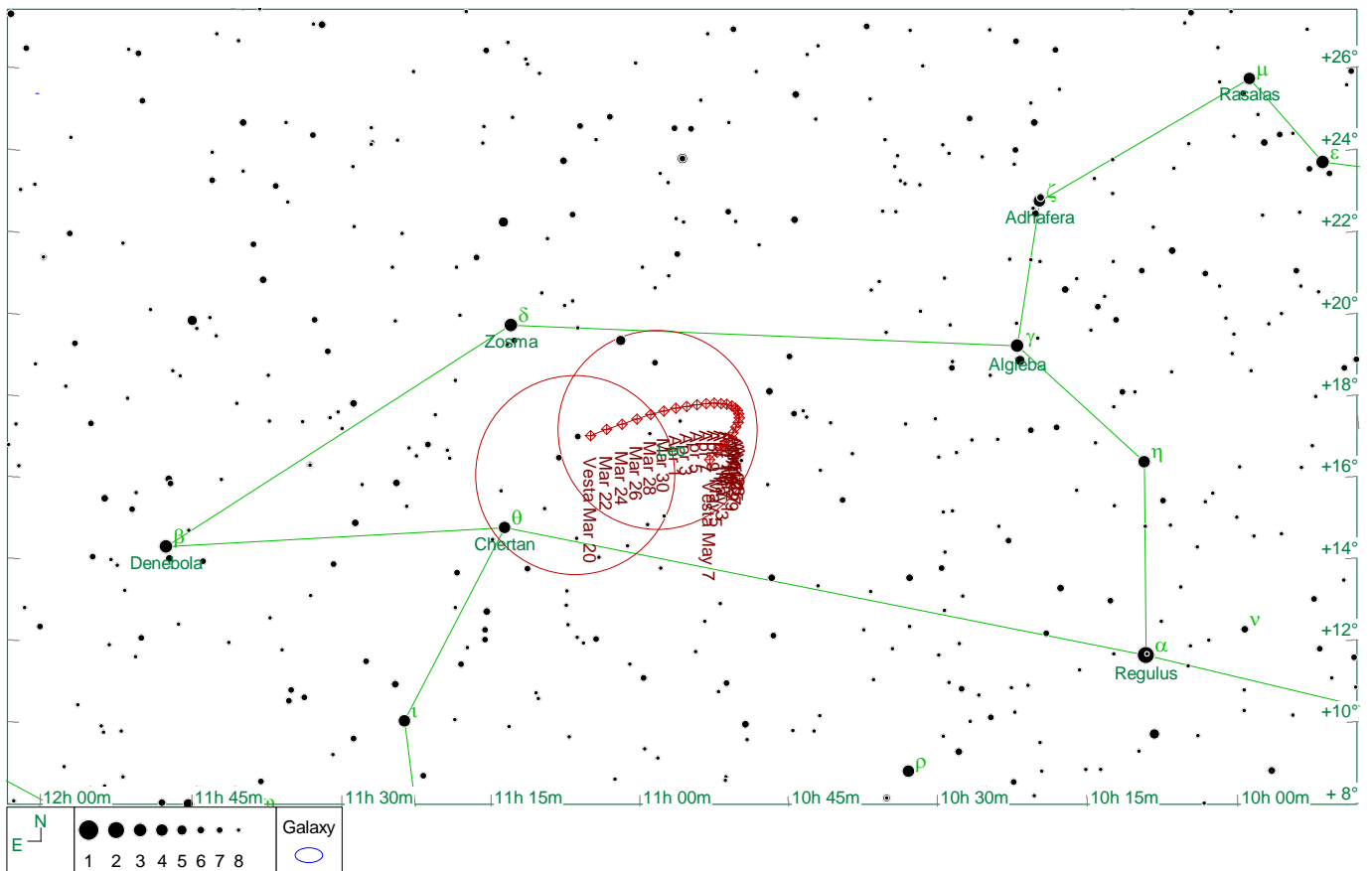


## Highlights of the month

Virgo cluster of Galaxies. located in `the bowl` of Virgo between bright stars Vindemiatrix in Virgo and Denebola in Leo , the brightest member galaxies shown are bright enough to see as faint misty patches with a small telescope or binoculars . Virgo is a `Y` shaped constellation with the bright white star Spica at the base.



LAS map showing the brighter galaxy members of the Virgo Cluster located along Markarian's Chain



LAS Map showing the position of Asteroid 4 Vesta in Leo, 6.4m (Binoculars required) Red circles (10 x50) FOV  
LAS Newsletter No 281A refers.