



Binocular Observing (April 2019)

- By Andrew Lohfink

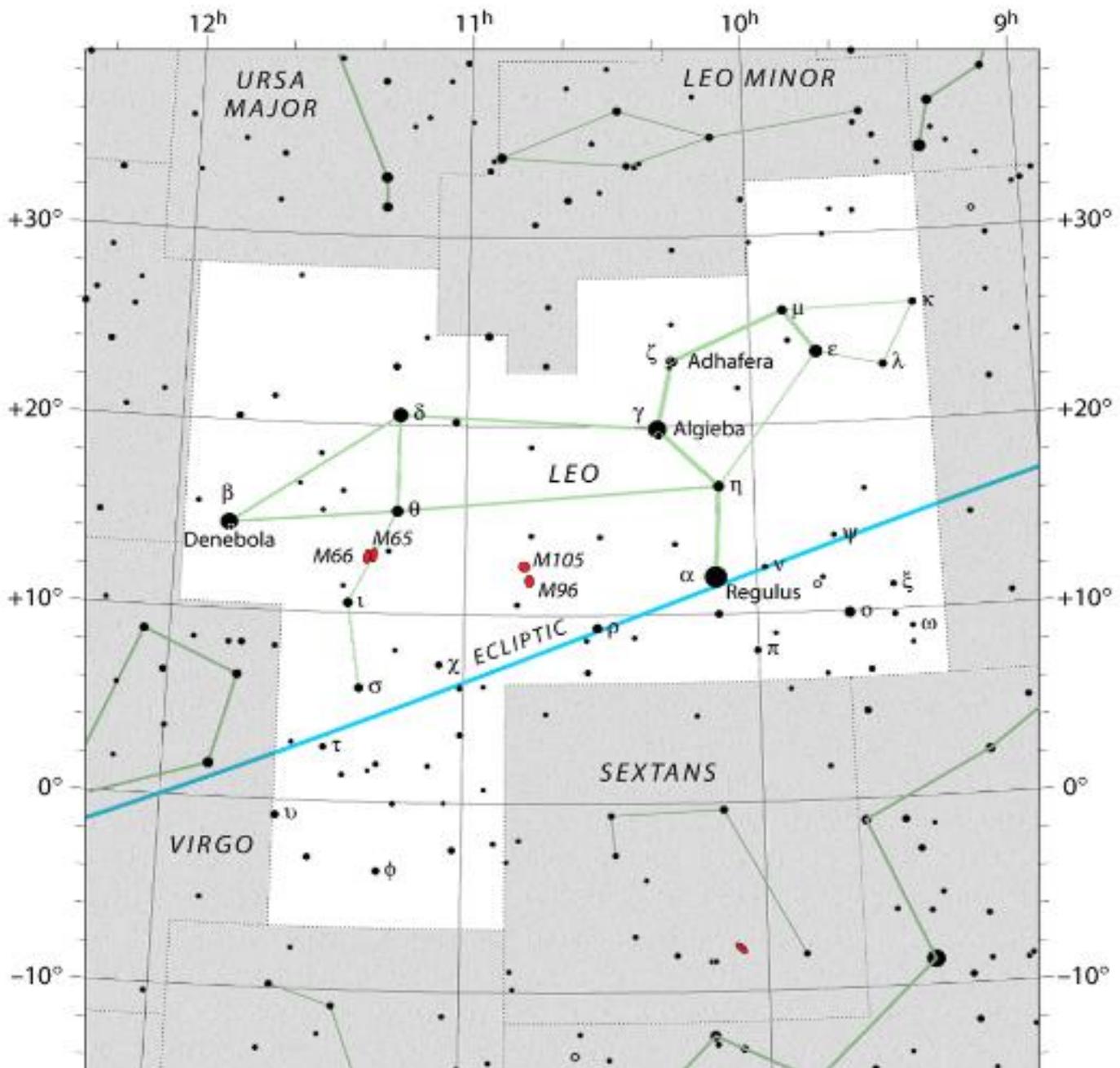
Galaxy Observing

- April brings galaxies into view for large binoculars in Leo. When viewing galaxies in binoculars a dark sky is the most important aid to having a successful night! Avoid observing when the moon is around and try to get to a dark site – the difference will be amazing.
- In binoculars you are looking for milky slices of light which can have differing shapes and shades depending on the galaxy orientation and brightness – for instance you may be able to distinguish a brighter core or there may be a light line or disc.

Observing Double Stars with Binoculars

- There are many double stars visible in binoculars.
- The higher the magnification of your binoculars the greater the resolving power.
- As a general rule of thumb divide 300 by the magnification of your binoculars to get the approximate distance you can separate in arc seconds.
- A x10 binocular will be able to resolve approximately 30 arc seconds and a x20 approximately 15 arc seconds.
- Mounting your binoculars at any magnification will greatly increase the ability to split stars.
- It also helps to have young eyes!!

Leo



Leo Triplet Galaxies – M65 M66 NGC3628

- These are 3 galaxies which can be seen in the same 2.5 degree field of view in 25 x 100mm binoculars. 10X50 binoculars may reveal flecks of light but differences in size and shape are more obvious in larger binoculars.

M65, M66 & NGC 3628



- They can be found halfway on a line drawn from Theta Leonis and Iota Leonis.
- M65 is an intermediate spiral galaxy approximately 35 million light years distant with an apparent magnitude of 10.25.
- M66 is an intermediate spiral galaxy approximately 36 million light years distant with an apparent magnitude of 8.9.
- NGC3628 is an unbarred spiral galaxy 35 million light years distant. It lies just north of M65 and M66.

Another Leo Galaxy triplet

- These three galaxies can be found half way along a line from Theta Leonis to Rho Leonis.
- M95 – Is a barred spiral galaxy approximately 38 million light years distant.
- M96 – Is an intermediate spiral galaxy and is approximately 31 million light years distant. It is the brightest galaxy in this group with an apparent magnitude of 10.1.
- M105 – Is an elliptical galaxy approximately 32 million light years away and has a supermassive black hole at its centre. M105 has 2 companion galaxies which can be very difficult but if seeing conditions permit you can get 5 galaxies in one 2.5 degree field of view.

M95, M96 & M105

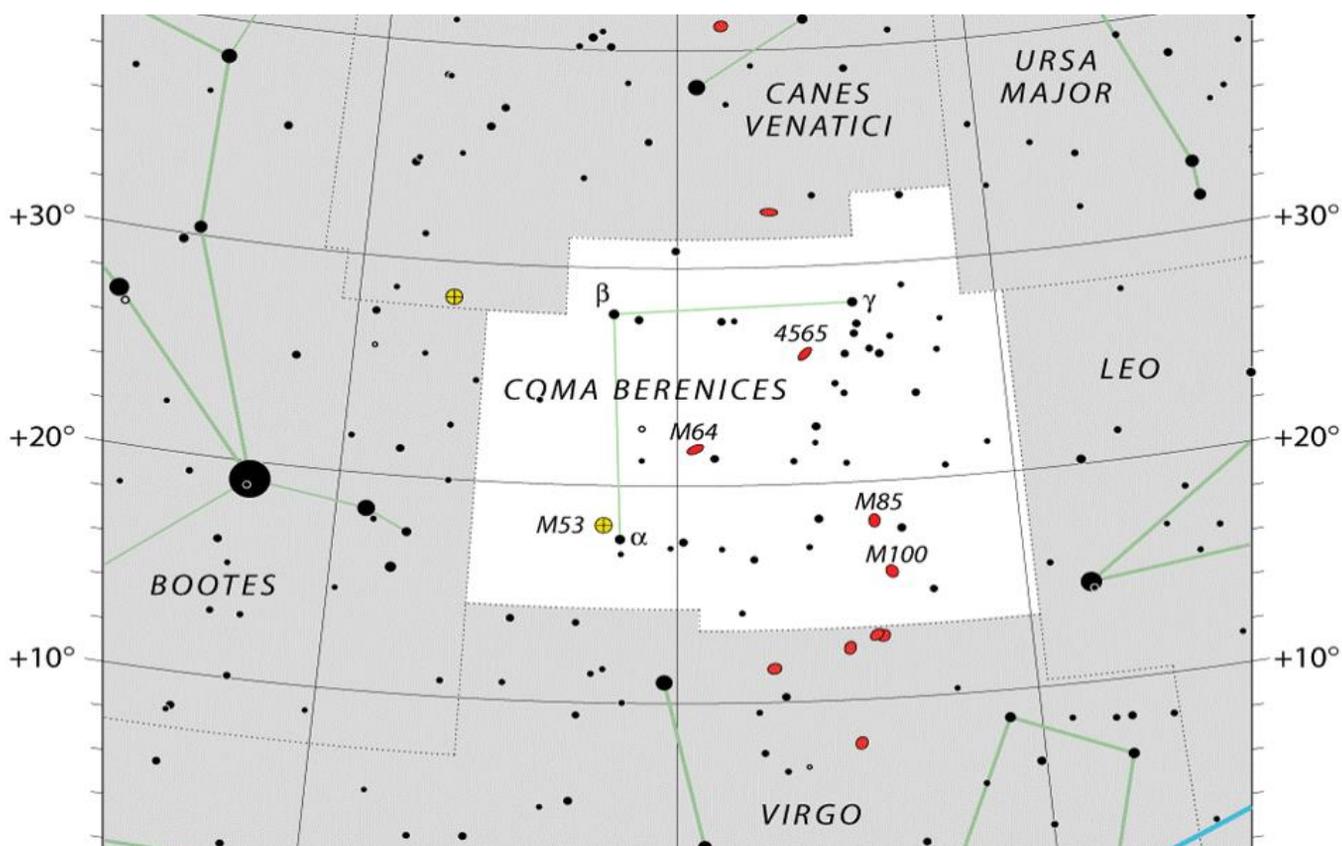


M95, M96 & M105

- These galaxies are at a higher magnification than x25 to give some feel as to the different shades and shapes – you should be able to see more subtle differences in large binoculars.



Coma Berenices

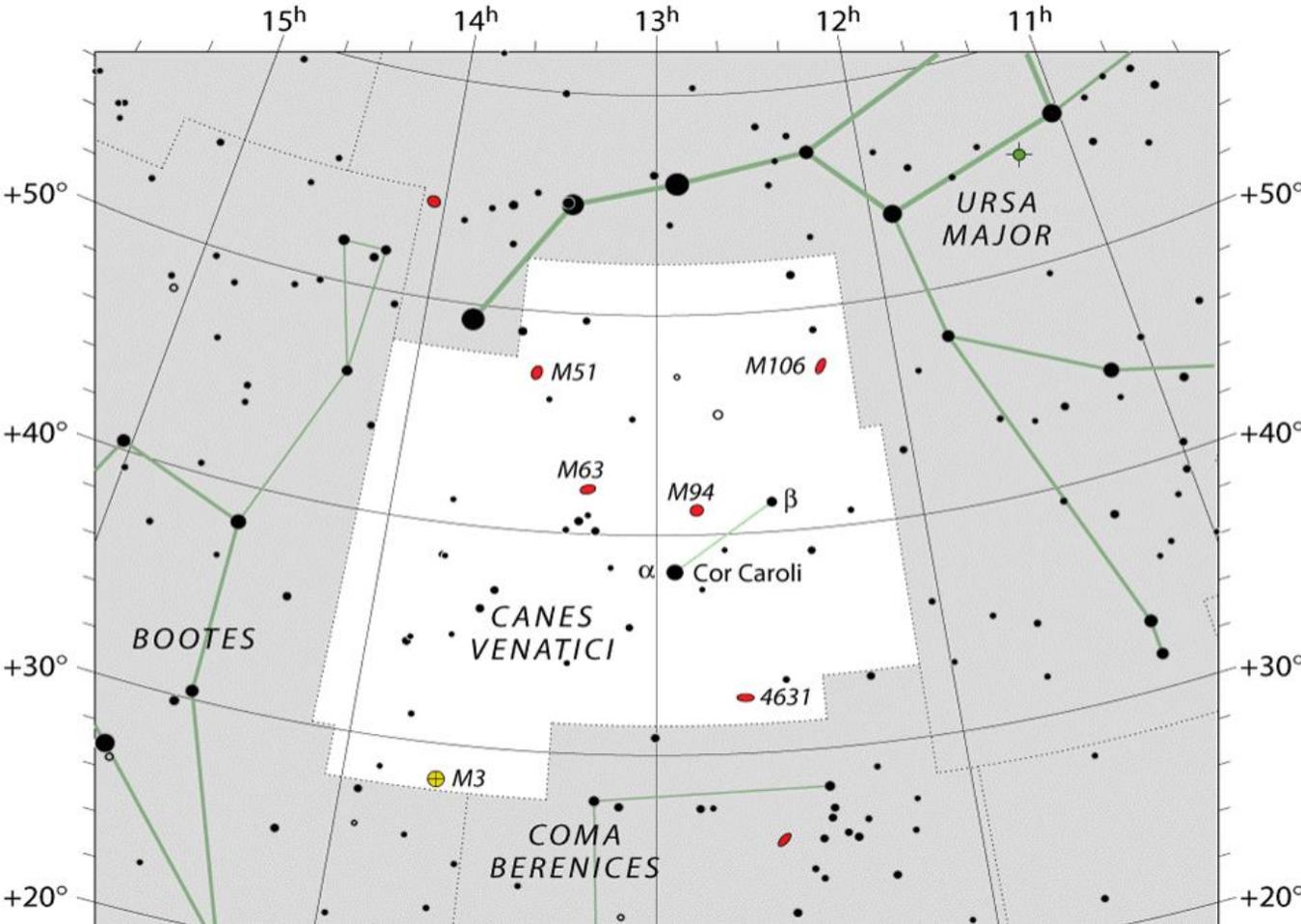


Melotte 111 open cluster – Coma cluster

- A large open cluster around Gamma Comae which covers more than 5 degrees and is a fine sight in 40 or 50mm binoculars and can also be a naked eye object.



Canes Venatici



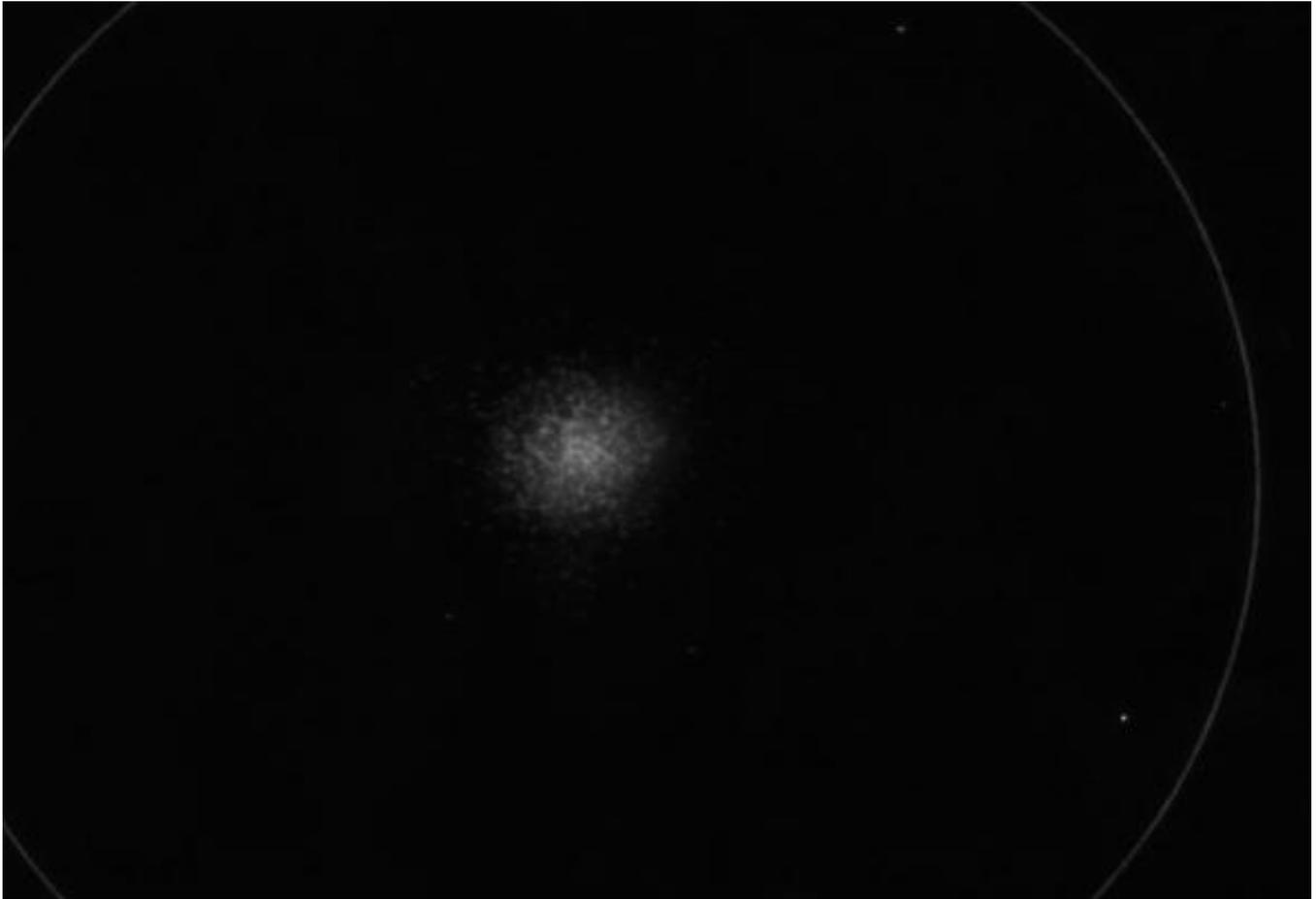
Cor Caroli

- This is the brightest star in Canes Venatici and is a binary star with a separation of 19.6 arc seconds. It is called Charles' Heart star and was named by Sir Charles Scarborough, mathematician to Charles II in honour of King Charles I. It can be split in larger binoculars

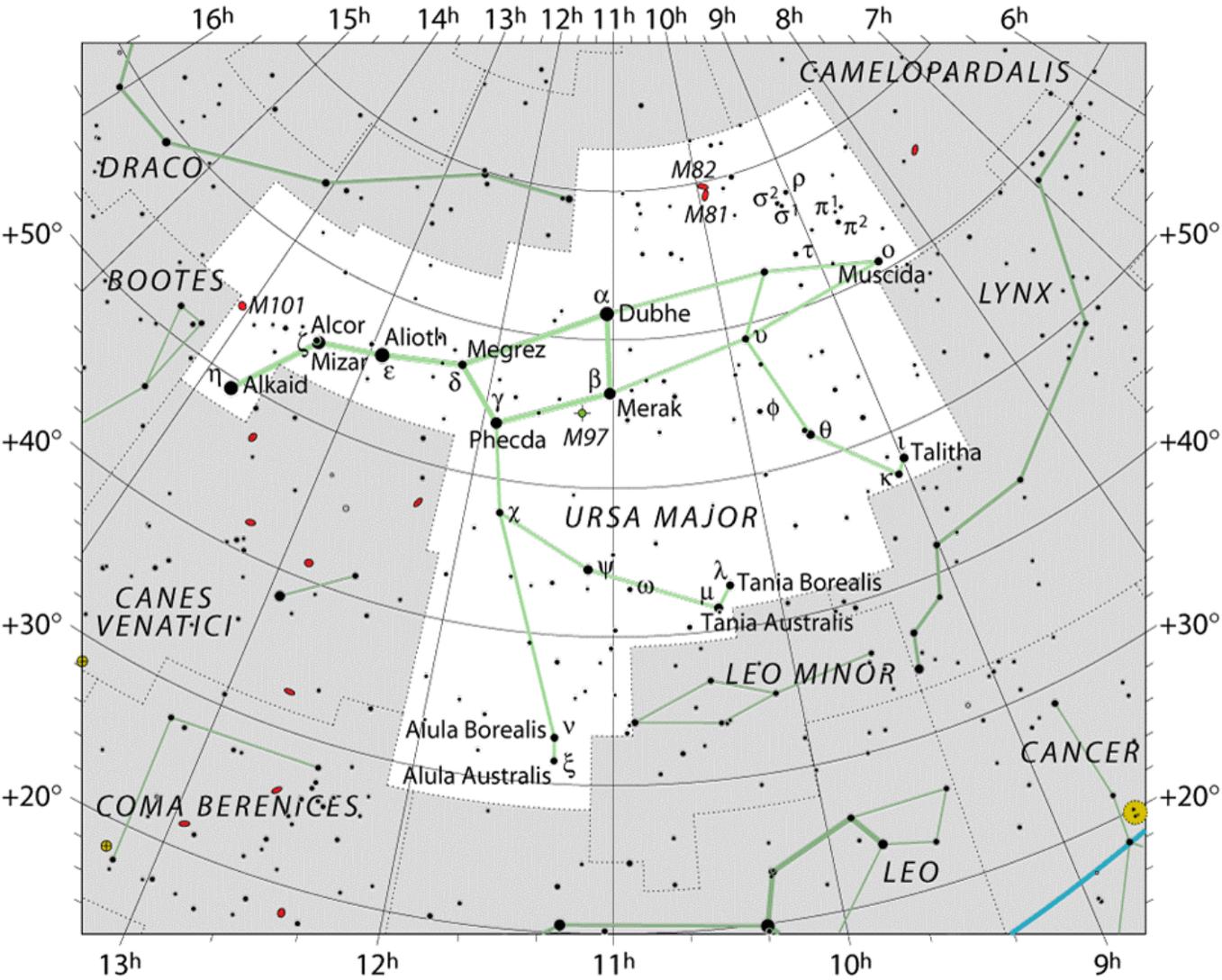


M3- A Globular Cluster

- Extend a line through the alpha and beta stars in the direction of Arcturus to find M3, one of the brightest globular clusters approximately 34,000 light years away. The glow visible in 40-50mm binoculars comes from around 500,000 stars, whilst larger apertures and higher magnification may show some granulation.



Ursa Major



● 1 ● 2 ● 3 ● 4 ● 5 ● 6



M51 – The Whirlpool Galaxy

- One of the best known spiral galaxies about 31 million light years away. It is interacting with NGC 5195. Extend a line from Alkaid (last star on the handle of the plough asterism) at right angles to a line between Mizar and Alkaid, about half the distance. In 40-50mm binoculars you will see a glow from 25 billion stars. In larger apertures & magnifications you will be able to see 2 distinct brighter areas in an elongated shape representing the 2 galaxies.



Alcor & Mizar

- These are a visual pair of stars – Mizar is the second star in the handle of the plough asterism and can be split from Alcor with the naked eye. They are sometimes known as the horse and rider. Mizar is itself a small system comprised of 2 binary stars and Alcor is also a binary star. In 10x50 binoculars Alcor and Mizar are a beautiful sight and at 20x80 you may be able to split Mizar into two

