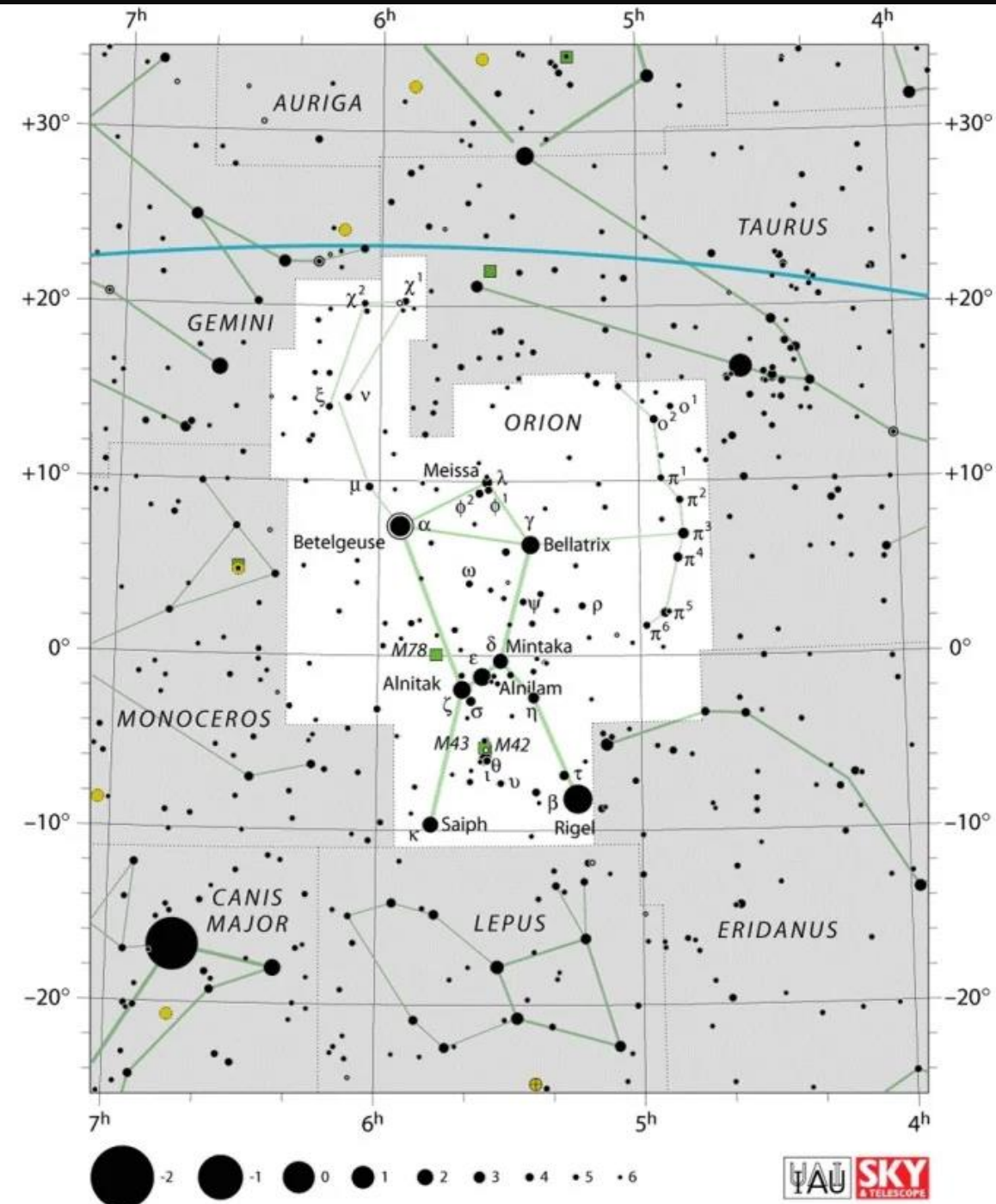


Binocular and
Small Telescope
Observing
February 2025
by Andrew
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Orion Constellation

- Orion is one of the most easily recognisable constellations in the night sky.
- Look south and Orion's Belt – 3 bright white stars in a row – is easily seen



Orion Constellation



Lambda Orionis

- Lambda occupies the “head” of Orion.
- Lambda Orion – aka Meissa – is a double star within an open cluster.
- The cluster (also known as Collinder 69) lies 1,300 light years away and is about 5 million years old.
- There are many different colours on show and the cluster has an unusual triangular shape.
- The cluster is best viewed with x10 – x17 binoculars but the double star needs a telescope to resolve as it has a 4.4 arcsecond separation.



Orion's Belt

- This asterism is formed by three blue / white stars Alnitak, Alnilam and Mintaka.
- You can get them all in the same FOV in low power wide field binoculars.



Collinder 70 – An OB association

- Cr 70 forms a distinct “S” shape of stars snaking between Alnilam and Mintaka.
- This pattern of stars is part of The Orion OB1 association.
- OB associations are loose collections of young hot O and B stars which can be separated by hundreds of light years.
- Cr 70 is best viewed x10 – x17 binoculars



Mintaka – a Double Star

- Mintaka – the most westerly star in Orion's Belt – is a double star.
- With a separation of 51 arcseconds it can be split in x 8 binoculars and above.
- The main attraction is the difference in magnitude – the primary being 2.23 and the secondary 6.83



Sigma Orionis

- This is the closest naked eye visible star just below Alnitak.
- With the naked eye it is nothing special, but binoculars and telescopes reveal its true nature...



Sigma Orionis – A triple Star System

- In binoculars Sigma Orionis (the bright central star) forms an asterism which resembles the constellation Sagitta.
- Binoculars will not reveal a separation, but telescopes will be able to resolve Sigma Orionis into 3 stars.
- There is also an unrelated double star (seen here as the most westerly star). This can also be split with a small telescope in the same FOV as the triple Sigma Orionis



Sigma Orionis (a
visual triple star)
and Struve 761 (a
visual double)



Orion's Sword

- Orion's Sword area lies below The Belt and is easily seen naked eye as a few stars and a central fuzziness.
- This central fuzziness is the Orion Nebula.



Orion's
Sword



Orion's Sword

- The Sword contains a number of interesting targets.
 - There is the central Messier 42 – The Orion Nebula. This is visible as a misty fuzzy patch in binoculars.
 - There is Messier 43 – De Mairan's Nebula. This is almost impossible to see unless you have pristine skies! The small open cluster NGC 1985 can be seen in the same location
 - NGC 1981 and 1977 are separate open clusters easily seen in binoculars.
 - All the above can be seen in the same FOV in x10 binoculars.
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Messier 42 – The Orion Nebula

- M42 lies 1344 light years away and is the nearest stellar nursery to Earth.
- It can be seen in small binoculars, but larger telescopes will reveal intricate details in the nebulous clouds.



The Orion
Nebula



The Trapezium Cluster

- This is a tight open cluster at the heart of The Orion Nebula.
- The five brightest stars are 15 - 30 solar masses in size.
- They are within 1.5 light years of each other and are responsible for illuminating the Orion Nebula.
- Depending on the size of telescope up to 6 stars can be resolved.



NGC 1981 – The Crocodile Cluster

- This open cluster lies in the upper part of The Sword and is best viewed with binoculars around x 15 although can be seen at lower magnifications easily



NGC 1981

- The arrangement of stars suggests a crocodile shape, which gives it the name The Crocodile Cluster.
- It lies 1300 light years away.

