M36 lies about 2.5° to the southeast from M38. These two clusters are close enough together to view them in the same field of the binoculars. This cluster contains around 60 stars in a tighter formation than the previous cluster, making it slightly brighter, at 6.5 magnitude. It was easy to spot in binoculars, although I was not able to resolve any stars. To find it look for the 5th magnitude χ (Chi) Aurigae and two 6th magnitude stars. In binoculars these two looked like a single bright star to me. The cluster lies in a straight line about 1° from them.

The final cluster in this trio is **M37**, the brightest at magnitude 6, and perhaps the best of the three. In binoculars it appears as just a bright splodge of light which is quite easy to spot, lying 4° to the southeast from M36. In larger 'scopes some of the 500 or more stars will be resolved. About 150 are brighter than 12.5 magnitude. Looking at individual stars, this cluster contains several red giant stars, indicating that it is somewhat older than the other two, which contain an abundance of younger B and A class stars and no red giants. The brightest of these red giants shines at magnitude 9.5, and "stands out . . . like a ruby on a field of diamonds", to quote from Burnham's. This cluster is the furthest away of the trio, at 4600 light years, while the others are between 4100 and 4200 light years away.

The region to the southwest of M38 and M36 contains several smaller and fainter star clusters and several areas of nebulosity which are shown in figure 2. About half a degree from M38 is the small cluster **NGC 1907**. It lies in the middle of two stars, one 6th magnitude and one of 7th. I was unable actually to see the cluster, despite being able to pinpoint its position between the two stars. With the 14-inch SCT it should present no problems. It contains about 40 stars within a diameter of about 5 arc-minutes; the stars are fainter than 10th magnitude. Looking at φ Aurigae again, this star lies on the western edge of a faint patch of nebulosity **IC 417**. Visible to the naked eye is another chain of bright stars that can be picked out, slightly to the west of the first. This chain is surrounded by two large areas of nebulosity. The one on its eastern side is **IC 405**, and that on its western side is **IC 410**.

IC405 is also known as the **Flaming Star Nebula**. It is very faint, and covers an area of 18 by 30 arc-minutes. At its centre is the variable star **AE Aurigae**. **IC 410** is another faint nebula with a diameter 20 arc-minutes. It surrounds the small star cluster **NGC 1893**, which contains about 20 stars of between 9th and 12th magnitude.

This area of Auriga is worth having a look at, even if only with binoculars, but if you have a larger telescope handy then you are in for a treat. ¤

Further Reading

The Observer's Sky Atlas by E. Karkoschka, published by Springer-Verlag (1988)

Burnham's Celestial Handbook, Vol. 1 by Robert Burnham Jr., published by Dover Publications Inc. (1978)

Uranometria 2000.0, by B. Rapport and W. Tirion, published by Willman-Bell Inc (1987)

Bright Deep Sky Objects in Auriga

by Mark Humphrys

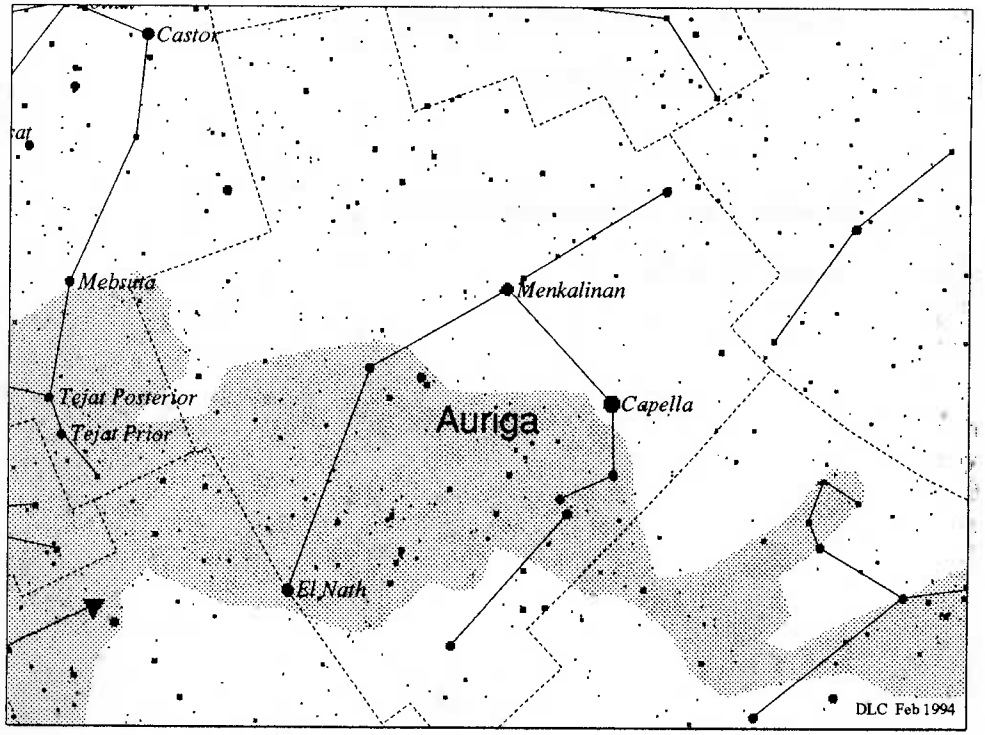

Figure 1. Auriga, the Charioteer. The shaded area is the Milky Way. The arrow shows the north direction.

This month I'll take a look at Auriga, the Charioteer. It holds several bright objects which are visible in binoculars, and several other objects which can be found without difficulty in a telescope. All these objects lie more or less within a triangle formed by the stars θ (Theta) Aurigae, ι (Iota) Aurigae and β (Beta) Tauri (figure 2). The constellation straddles the Milky Way and contains rich star fields which, perhaps, are best appreciated with a wide field of view, for instance through binoculars.

The first three objects to look at are three star clusters catalogued by Charles Messier: M38, M37 and M36. The first object, **M38**, can be found at the end of a chain of 7 or 8 stars, the brightest of which is φ (Phi) Aurigae at 5th Magnitude. The cluster has an overall magnitude of 7, and is visible in 7 x 50 binoculars only as a faint smudge. I was unable to resolve any stars, but the seeing was far from perfect with a fair amount of light pollution. It contains around 100 stars in an area about 20 arc-minutes in diameter, the brightest being about magnitude 8. In Burnham's Celestial handbook the cluster is described as "resembling an inverted letter Pi (π)." Can you make out this shape with the larger 'scope? »»

FIGURE 1: M36, M37 AND M38

IN AURIGA

ADAPED FROM URANOMETRIA 2000.0

MAPS 97 & 98