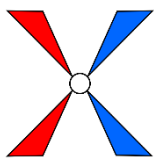


1847 FA

bncdoc.id	EAW
bncdoc.author	Moore, Patrick
bncdoc.year	1990
bncdoc.title	Exploring the night sky with binoculars.
bncdoc.info	Exploring the night sky with binoculars. Sample containing about 39798 words from a book (domain: natural sciences)
Text availability	Worldwide rights cleared
Publication date	1985-1993
Text type	Written books and periodicals
David Lee's classification	W_non_ac_nat_science

<1847/c>	for a very loose cluster, though in fact they are not really associated with each other.
	<p>The main object of binocular interest in Aquarius is the globular cluster M2. I have never been able to see it with the naked eye (as some observers claim to have done), but it is not hard to find with $\times 7$, and it is easy with $\times 8.5$. The way to locate it is to begin at Beta and then sweep past a line of three faint stars until you come to the cluster, which, incidentally, forms a right angle with Alpha and Beta. It was discovered as long ago as 1746, and is some 50000 light-years away, with a real diameter of about 150 light-years. I can resolve it with my 28-cm reflecting telescope, but even in $\times 20$ binoculars it shows up only as a blur. Still, it is well worth finding, and it is one of the brightest globulars visible from the latitude of Britain. AQUILA: the Eagle This is a large and splendid constellation which gives a vague impression of a bird in flight. The leading stars are Alpha or Altair (0.8), Gamma (2.7) and Zeta (3.0). Altair, at a distance of 17 light-years, is one of the closest of the bright stars. It has ten times the luminosity of the Sun, and is pure white, with an A-type spectrum. It is one of the so-called Summer Triangle. Altair is flanked to either side by a fainter star, Gamma or Tarazed and Beta (3.7); Gamma is a K-type star, very clearly orange when seen in binoculars. The line of three makes Altair particularly easy to recognize. Antares in the Scorpion is also the centre of a line of three, but the colour-difference alone means that there can be no confusion; Antares is fiery red. South of Altair there are three stars lined up: Theta (3.2), Eta (variable) and Delta (3.4). Eta is a Cepheid. It was identified as such only a short while after Delta Cephei itself, and if it had been found a few months earlier the short-period stars would probably have been known as Aquilids rather than Cepheids. Eta Aquilæ has a range of from 3.4 to 4.7, and a period of 7.2 days; Beta, Delta, Theta and Iota (4.4) are useful comparisons. Eta is 440 light-years away, and can attain a luminosity well over 5000 times that of the Sun. Aquila ends to the south in a pair of stars, Lambda (3.4) and 12 (4.0). These two are the best guides to</p>
<p>Key: Footprint ConEn1 Footprint ConEn2 Footprint ConEn3</p>	<p>the little constellation of Scutum, with its famous open cluster M11</p> <p>; indeed, Scutum used to be included in Aquila, and there does not seem much justification for giving it a separate identity. The Milky Way runs right through Aquila, and is very rich, so that the whole region will repay sweeping with binoculars of any magnification. Finally, several novæ have appeared in Aquila during recent years, so that it is always worth making a check - though do not be deceived by a slow-moving artificial satellite! ARA: the Altar A far-southern constellation, lying between Theta Scorpis on one side and Alpha Trianguli Australe on the other. The chief stars are Beta (2.8), Alpha (2.9), Zeta (3.1) and Gamma (3.3). Beta and Zeta are orange; so is Eta (3.8). All three are of type K. Ara has a fairly distinctive shape. It contains several clusters within binocular range; NGC 6397, 6362 and 6352 are globular, while NGC 6167 and 6193 are loose. Of these, the most notable is NGC 6397. It is quite easy to find, close to the Beta-Gamma pair; it is not particularly</p>

rich or condensed, but it may be only about 8200 light-years away, in which case it is the closest of all **the globulars**. I find **NGC 6352** difficult with binoculars, even $\times 20$. **R Arae**, in the same $\times 7$ field with **Zeta** and **Eta**, is an Algol-type eclipsing binary with a period of 4.4 days. As its range is from 5.9 to 6.9, it is always easy to see with binoculars of any magnification. **ARIES**: the **Ram Aries** is always classed as **the first constellation of the Zodiac**, though by now **the First Point** of **Aries** (the position where the ecliptic cuts the equator) has shifted into **the adjacent constellation** of **Pisces**. **The three main stars** in **Aries** are **Alpha** (2.0), **Beta** (2.6), **c** (3.6) and **Gamma** (3.9); **Alpha**, **Beta** and **Gamma** make up **a conspicuous little group**. **Alpha, or Hamal**, forms **a large triangle** with **Beta** and **Gamma Andromedæ**. It has **a K-type spectrum**, but I always find the colour less pronounced than with **most bright K-stars**, though binoculars show it to be decidedly 'off-white'. **Gamma** is a lovely telescopic double, with equal components, but as the angular separation is only just over 8 seconds of arc it is not resolvable with binoculars. **AURIGA**: **the Charioteer Auriga** is one of **the most striking of all the constellations** of the northern hemisphere. **Its leading stars** are **Alpha or Capella** (0.1), **Beta** (1.9), **Theta** (2.6), **Iota** (2.7),