

Binocular Universe: The Eagle Has Landed

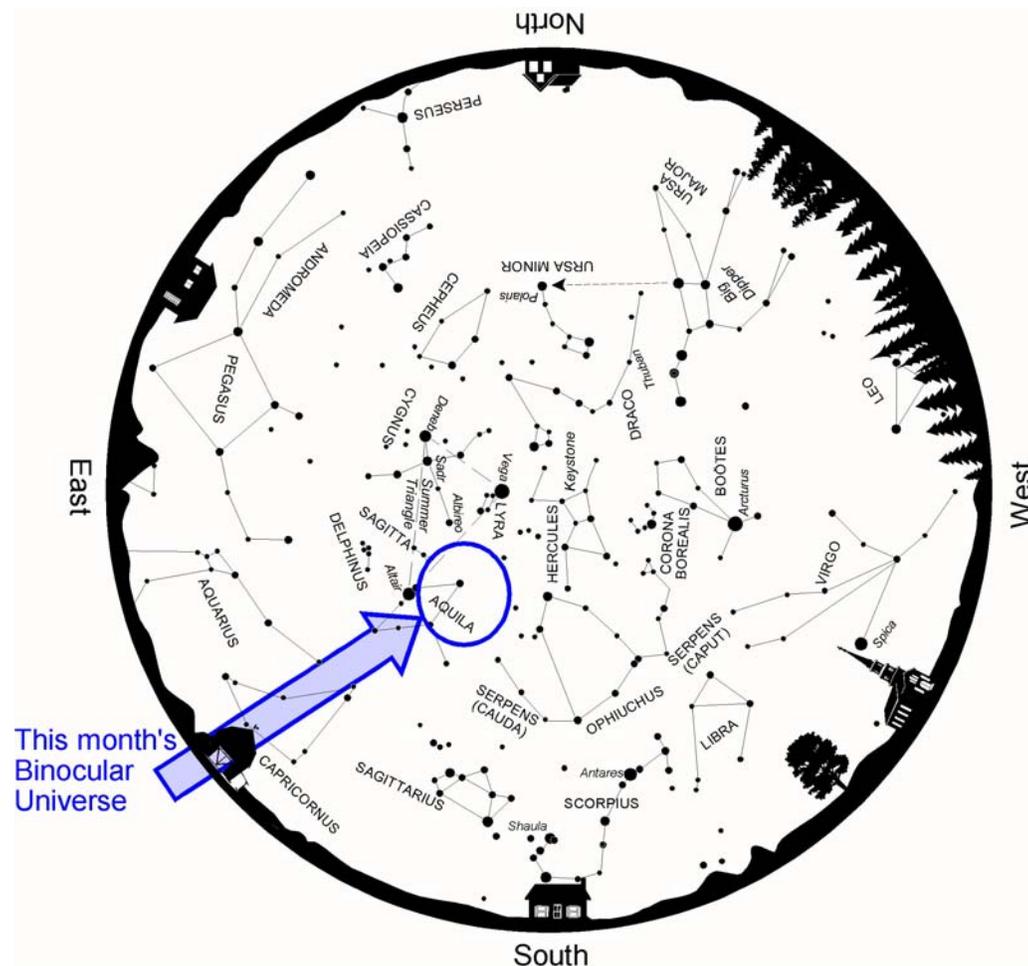


July 2013

Phil Harrington

I am a child of the 1960s, so whenever someone mentions the "Eagle" to me in the summer, especially in July, I immediately think back to the excitement of July 1969, when Neil Armstrong and Edwin Aldrin landed their Lunar Module, nicknamed Eagle, on the plains of the Sea of Tranquility. "Houston, Tranquility Base here. The Eagle has landed." What a moment.

This month, to recall that historic event, we're going to visit the sky's eagle, Aquila. Flying amongst the star clouds of the Milky Way, Aquila brings a wide variety of targets for our binoculars.



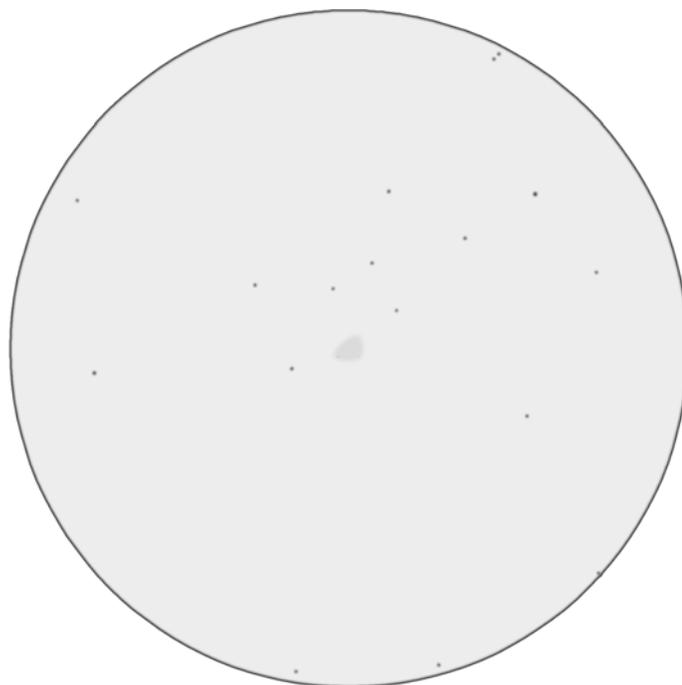
Above: Summer star map from [Star Watch](#) by Phil Harrington.

Let's begin at the star **Zeta (ζ) Aquilae**. Shining at 3rd magnitude, Zeta is properly named *Deneb el Okab*, which translates as "the tail of the falcon." To my way of imagining Aquila's form, however, Zeta marks the tip of the bird's western wing. But I digress. We are going to use Zeta to help pinpoint several of the targets listed below, so take aim.

Slide your binoculars about half a field southwest of Zeta and keep both eyes out for a small, faint blur of light. That will be **NGC 6738**. In my book [Touring the Universe through Binoculars](#), I describe this challenging target as revealing "only a few of its brighter stars, which are about 9th magnitude. Larger glasses should have little trouble glimpsing them, and even 7x binoculars show a few set within the glow cast by fainter luminaries." But bear in mind that's only from under pristine skies.

You will see that I list NGC 6738 below as an open cluster, as do many other sources. A research paper entitled [NGC 6738: Not a Real Open Cluster](#) published in 2003 in the journal [Astronomy and Astrophysics](#), however, suggests otherwise. The authors found that this is actually just a curious asterism, an "apparent concentration of a few bright stars on patchy background absorption." Follow the link above to read their full results.

A bit farther to the southwest of Zeta, we find **NGC 6709**. This is an undisputed open cluster, but I cannot resolve any of the 60-odd stars in this tightly packed group through my 10x50 binoculars. Instead, their dim light blends into a ghostly, oddly triangular haze against the background sky. By upping my game to 16x70s, several dim points toward the southeastern and southwestern corners begin to show. How about you? Can you resolve any stars in NGC 6709? Give it a go and post your results in this column's discussion forum.



Left: NGC 6709 as portrayed through the author's 10x50 binoculars.

North is up.

Next, we have the binary star **Otto Struve 178** (often abbreviated OΣΣ 178 and plotted as "OSS 178" on the finder chart above). Although the star is faint at 6th magnitude, the smallest field glasses should have no trouble resolving the pair once found. Nearly 90" of arc separate these faint yellow and white suns.

A more challenging binary system lies just across the border in Serpens Cauda (the Tail of the Serpent) and is tucked just inside the lower left corner of this month's finder chart. **Theta (θ) Serpentis** looks like most any other 4th-magnitude star through binoculars that magnify less than about 14x. But with higher power, Theta resolves into a pair of nearly identical stars separated by just 22 arc-seconds. Both are Type-A Main Sequence stars, with the system's primary, Theta-1, shining only 0.35 magnitude brighter than Theta-2.

As you enjoy Theta, you may notice a crowd of faint stars near the western edge of the field of view. That's the open cluster **IC 4756**. Covering nearly a full degree of sky, IC 4756 is one of those what I call "David and Goliath" objects. In other words, it doesn't need the brawn and girth of a large telescope to be seen. Indeed, through most conventional telescopes, it may go completely unnoticed because of its width. But aim a modest pair of binoculars its way and suddenly you see a mist of 50 9th- and 10th-magnitude suns. The brightest cluster star, SAO 123778, shines at magnitude 6.4 and lies toward the group's southeast edge.

You may also know IC 4756 by its nickname *Graff's Cluster*. This appellation recognizes German astronomer Kasimir Graff, who independently discovered IC 4756 in 1922. He was not the first to lay eyes on the cluster, however. That credit goes to the Rev. T.W. Webb, who came across it in 1859.

Continuing westward another half a field or so, we hop the border into Ophiuchus for the splendid open cluster **NGC 6633**. Spanning a diameter as large as the Full Moon, NGC 6633 shines at 5th magnitude and is also easy to identify even through pocket-sized mini binoculars. In all, 30 stars shining as brightly as 8th magnitude collaborate to create this striking group.

You may notice that those stars are not uniformly distributed, but rather lie in clumps. The densest pack is near the group's southern edge, while a second, smaller grouping is north of center. Canadian observer Stéphane Meloche notes that the cluster's overall appearance is reminiscent of the number 7, but in his words appears "reversed horizontally." From Italy, observers Michele Bortolotti and Claudio Pra, among others, suggest nicknaming it the Italy Cluster for its likeness to their home country. I like both.

The area within this month's Binocular Universe is a rich region that is perfect for slowly scanning with binoculars while laying back comfortably on a chaise lounge. Try it for yourself! As you do, keep an eye out for pairings, asterisms, and the other targets listed below.

Object	Con	Type	R.A.	Dec	Mag	Size/Sep/ Period	Notes
			(2000)				
6709	Aql	OC	18 51.5	+10 21	6.7	13'	*TUB page 92*
6738	Aql	OC	19 1.4	+11 36	8.3p	15'	*TUB page 92*
R	Aql	Vr	19 6.4	+8 14	5.5-12.0	284.2 days	Long Period Variable
6755	Aql	OC	19 7.8	+4 14	7.5	15'	
OSS 178	Aql	**	19 15.3	+15 5	5.7,7.8	90"	*TUB page 92* 268°(1925)
B137-8	Aql	Dk	19 15.6	+0 13		180'x10'	
6572	Oph	PN	18 12.1	+6 51	9.0p	8"	
RY	Oph	Vr	18 16.6	+3 42	7.5-13.8	150.53 days	Long Period Variable
6633	Oph	OC	18 27.7	+6 34	4.6	27'	*TUB page 190*
X	Oph	Vr	18 38.3	+8 50	5.9-9.2	334.39 days	Long Period Variable
U	Sge	Vr	19 18.8	+19 37	6.6-9.2	3.381 days	*TUB page 213* Eclipsing Binary
59	Ser	Vr	18 27.2	+0 12	4.9-5.9		Unknown type
IC 4756	Ser	OC	18 39	+5 27	5.4p	52'	*TUB page 234*
Theta	Ser	**	18 56.2	+4 12	4,5,8	22",414"	104°(1973),56°(1927);11853
Cr 399	Vul	OC	19 25.4	+20 11	3.6	60'	*TUB page 258, 259* Coathanger

Thanks for joining me. Until we meet again next month under the stars, remember that two eyes are better than one.



About the Author:

Phil Harrington is the author of nine books on astronomy, including Star Ware and Star Watch. Visit his web site at www.philharrington.net

Phil Harrington's Binocular Universe is copyright 2013 by Philip S. Harrington. All rights reserved. No reproduction, in whole or in part, beyond single copies for use by an individual, is permitted without written permission of the copyright holder.