

Binocular Universe: A Pair of Stingingly Beautiful Clusters

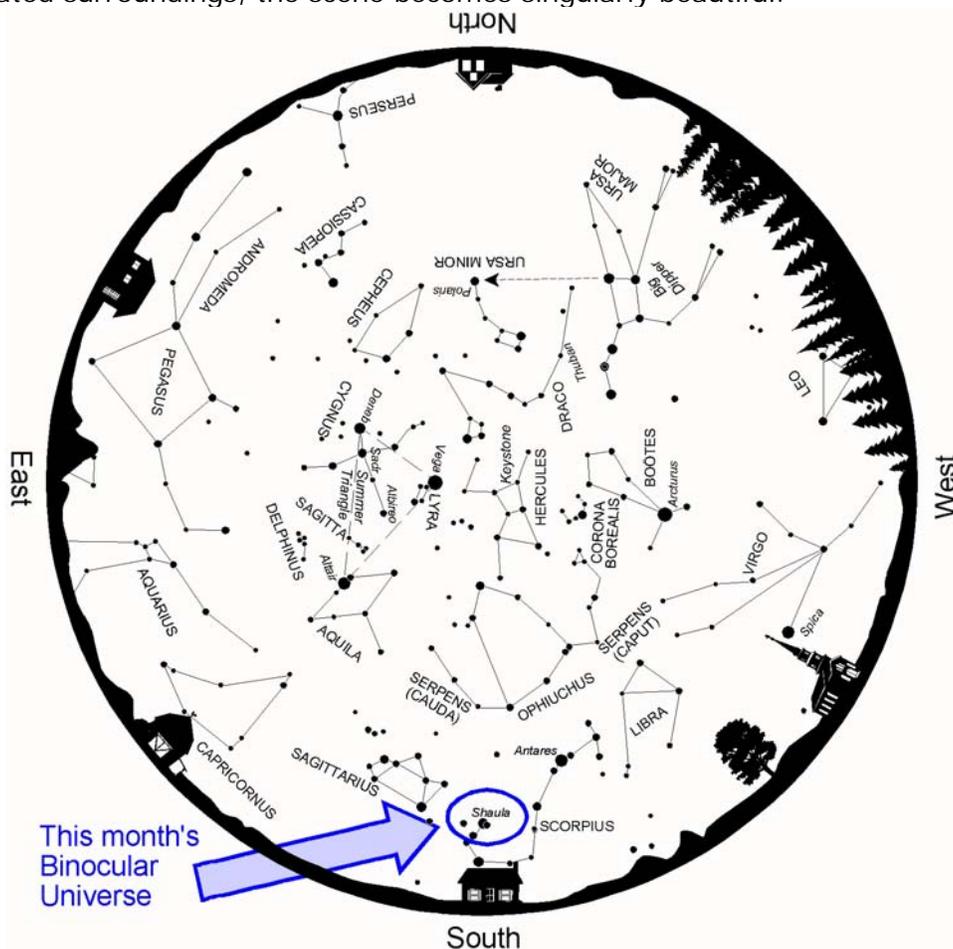
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[Phil Harrington](http://www.cloudynights.com)



Scorpius, the Scorpion, is one of those rare constellations that actually looks like what it is supposed to represent. Most stargazers find it easy to imagine a scorpion's spindly body hooking southward from Antares and around to Shaula and Lesath, the stars marking the tip of its poisonous stinger.

Two of my favorite summer star clusters, **M6** and **M7**, trail after the Scorpion's stinger stars. Each would be a lovely sight if viewed alone, but when teamed together in such overpopulated surroundings, the scene becomes singularly beautiful.



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

To spot them for yourself, place the stinger on the southern edge of your binoculars' field of view, and then look to the north. Both should fit into the same field of view. In fact, you might not even need the binoculars to spot the clusters, since both are bright enough to see with the naked eye if the sky in that direction is dark and clear.

M6 is the smaller of the pair. At first glance, it strikes most observers as sharply rectangular, making it unique in a universe populated with ovals and circles. But take a closer look and let your mind play connect-the-dots with the stars. See anything besides a rectangle? This may sound a little like an astronomical Rorschach Ink Blot Test, but many observers can trace the outline of a butterfly among the stars. Look for two wings outstretched from the butterfly's centered body. The butterfly appears to be headed toward the northwest.

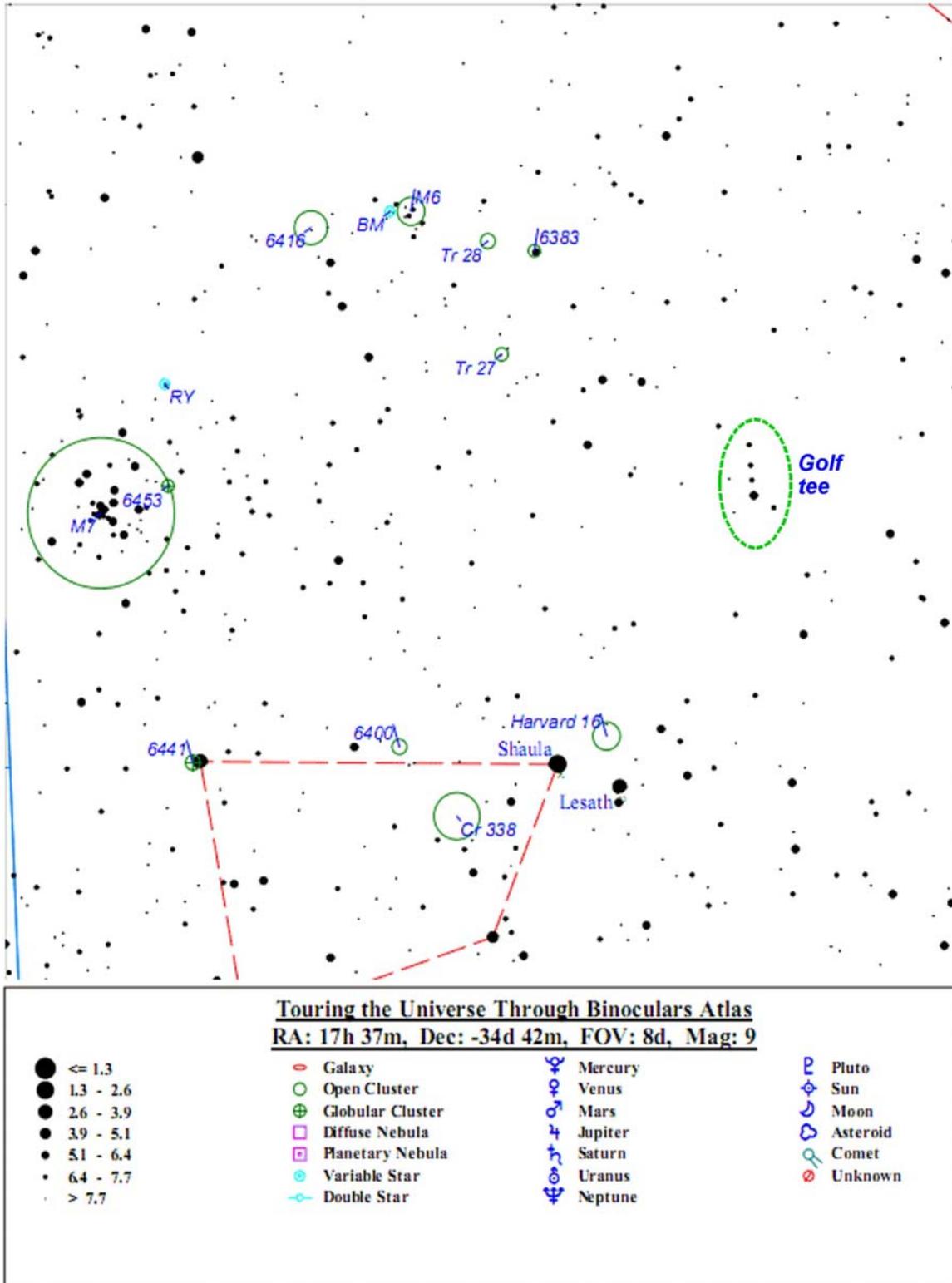
M6 is about 1,600 light years from Earth, spans about 12 light years, and is believed to be between 90 and 100 million years old. More than 2 dozen stars can be counted within using 50-mm binoculars, while 70- and 80-mm glasses add another dozen faint points of light. Altogether, M6 is made up of about 80 young stars, most of which are hot blue-white infernos. One of its most massive stars, however, has left the Main Sequence and evolved into an orange stellar ember. That star, set east of the cluster's center and known as BM Scorpii, is actually an irregular variable that fluctuates very slowly and erratically from 7th to 9th magnitude across an average of 850 days.

Steer to the southeast of M6 to find the next member of Charles Messier's catalog. M7 is larger and brighter than M6, and so should be even more obvious through binoculars. In fact, it is one of the few deep-sky objects known to the ancient world. Ptolemy was first to mention it in his epic volume Almagest, published in the second century A.D. Of course, he had no way of knowing the true nature of M7. That discovery had to wait 15 centuries, until Nicholas Louis de la Caille recorded it as "a group of 15 or 20 stars, very close together in a square figure" in 1751. Fifteen years later, Messier included it as object number 7 in his catalog, describing it as "a cluster considerably larger than the preceding" (M6).

At nearly 35 degrees south of the celestial equator, M7 is the southernmost object in Messier's listing. As a result, observing it can pose a challenge to those of us midway up the northern hemisphere if your site is cluttered by trees, buildings, or other terrestrial obstructions. Try viewing it over a lake or from a hilltop for best results.

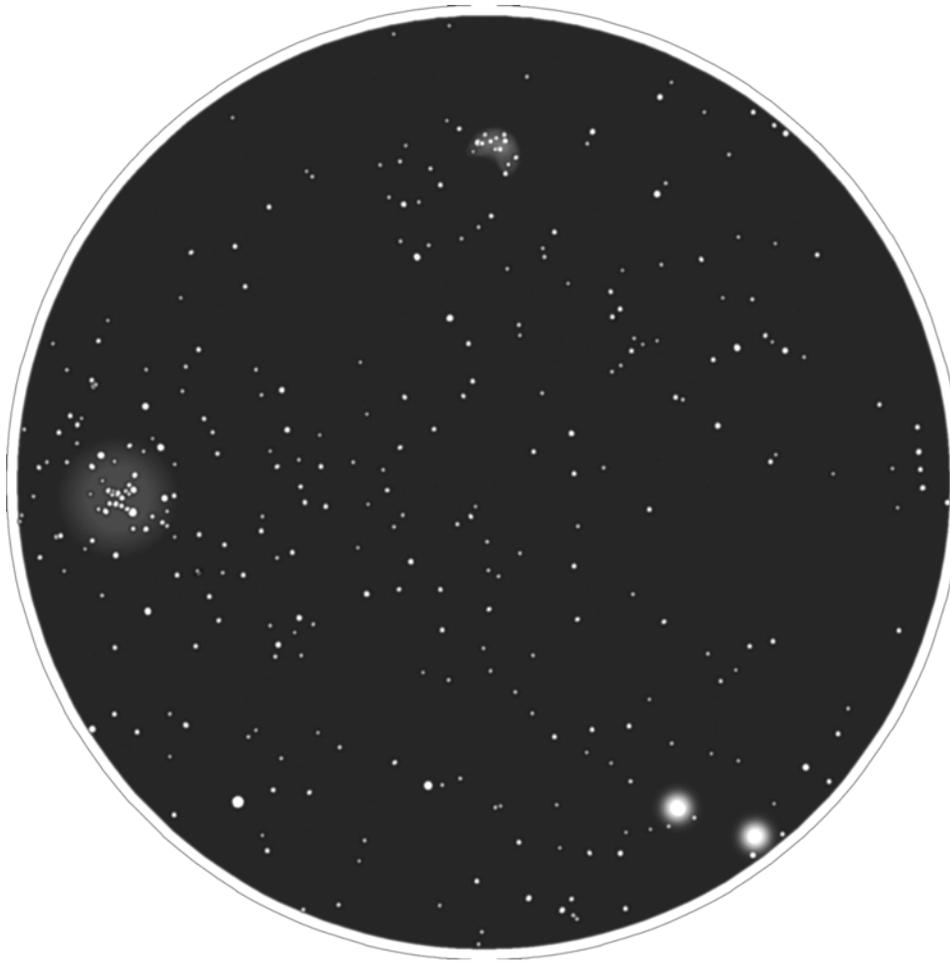
Once you do spot it, you're in for a real treat! Even through a modest pair of pocket binoculars, M7 explodes into an exceptionally striking assortment of stars covering an area larger than the Full Moon. Eighty stars have been identified as belonging to the cluster, with dozens of nonmembers either in the foreground or lying beyond also contributing to the scene. More than 30 cluster stars shine brighter than 10th magnitude, and as such, should be visible through common 50-mm binoculars. Several also show subtle hues of yellow and blue, with the brightest being a yellow beacon lying close to the group's center.

I know it's an illusion, but my 16x70 binoculars create a three-dimensional effect that makes many of the brighter cluster stars look like they're floating in front of a field of fainter stardust. The effect really struck me about 10 years ago at the Stellafane amateur telescope making convention in Vermont, as I was watching M6 and M7 slowly graze along the tops of some distant pine trees. It had a kind of visual impact that could never be duplicated in a photograph.



Above: Finder chart for this month's *Binocular Universe*.

Chart adapted from *Touring the Universe through Binoculars Atlas (TUBA)*,
www.philharrington.net/tuba.htm



Left: A sketch of M6 (top), M7 (left), and the Golf Tee asterism (right) made through the author's 10x50 binoculars.

North is up.

While he was viewing this area of sky last August, CloudyNighter Mark Jones from St. Louis, MO, came across an interesting asterism to their west. I've circled it on the finder chart above. He wrote, "*West of the stinger is a vertical line of four stars about equally spaced and about equal in brightness running in a north-south direction. At the bottom of the chain, two more stars branch off, forming a base. It reminds me of a **model rocket** waiting to launch or an inverted **golf tee**. The eastern star in the base is slightly fainter than the other five. The asterism is centered at Right Ascension 17h 25m, Declination $-34^{\circ} 41m$.*"

I recently visited Jones's asterism, and while I imagined it as an upside-down **martini glass** (hey, you see what you want to see, and I'll see what I want to see), his analogies to a model rocket or golf tee are also very good. See for yourself on the next clear night.

Touring Scorpius through binoculars is a great way to spend a warm mid-summer's night. As you can see from the list below, this entire region chock full of interesting targets, especially for giant binoculars.

Object	Con	Type	R.A. (2000)	Dec	Mag	Size/Sep/ Period	Notes
Harvard 16	Sco	OC	17 31.4	-36 51		15'	
6383	Sco	OC	17 34.8	-32 34	5.5	5'	
Tr 27	Sco	OC	17 36.2	-33 29	6.7	7'	
Tr 28	Sco	OC	17 36.8	-32 29	7.7	8'	
Cr 338	Sco	OC	17 38.2	-37 34	8.0p	25'	
M6	Sco	OC	17 40.1	-32 13	4.2	15'	*TUB page 226* NGC 6405, Butterfly Cluster
6400	Sco	OC	17 40.8	-36 57	8.8p	8'	
BM	Sco	Vr	17 41	-32 13	6.8-8.7p	850 days	*TUB page 226* Semi-Regular (in M6)
6416	Sco	OC	17 44.4	-32 21	5.7	18'	
6441	Sco	GC	17 50.2	-37 3	7.4	8'	
RY	Sco	Vr	17 50.9	-33 42	7.5-8.4	20.316 days	Cepheid
6453	Sco	GC	17 50.9	-34 36	9.9	4'	
M7	Sco	OC	17 53.9	-34 49	3.3	80'	*TUB page 226-228* NGC 6475

Sit back in a comfortable chaise lounge and, beginning at Antares, slowly scan southward along the Scorpion's outline. Be sure to pause frequently just to drink in all that each field of view has to offer.

We'll continue exploring the Milky Way next month, so if you have some favorite objects in and around Sagittarius and Ophiuchus, drop me a line and tell me about them. Meanwhile, until next month, remember that, for stargazing, two eyes are better than one!



About the Author:

Phil Harrington is the author of Touring the Universe through Binoculars. Visit his web site at www.philharrington.net for a preview of his next book, Cosmic Challenge, coming this fall from Cambridge University Press.

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