

# Binocular Universe: Summer's Swan Song

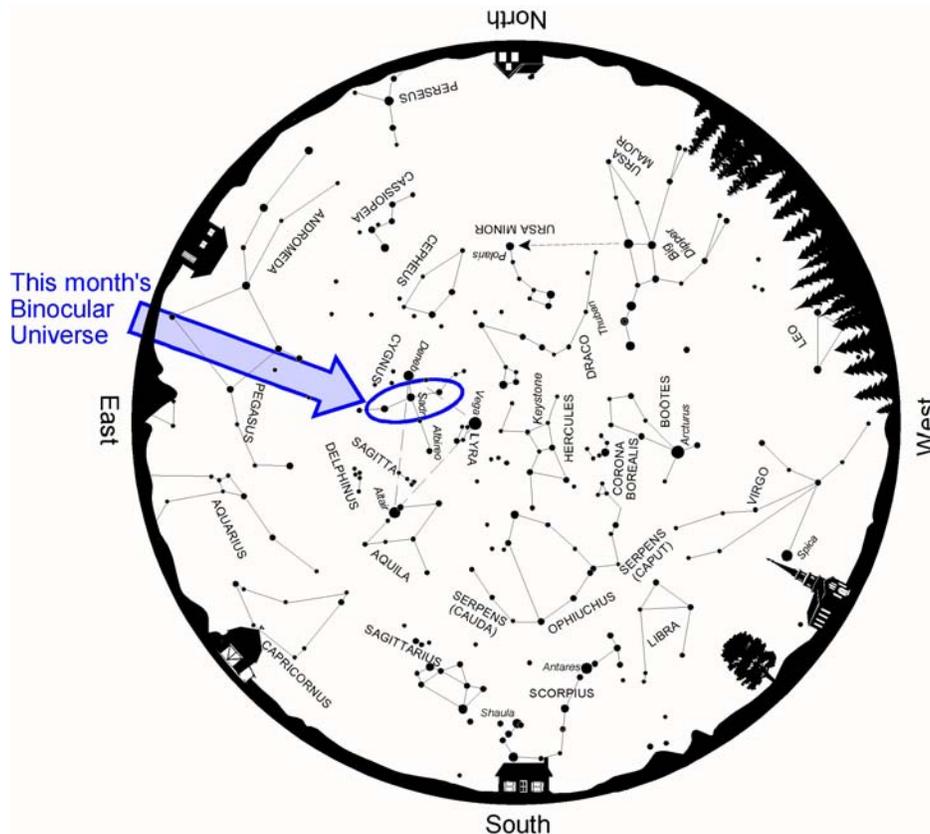
September 2011

Phil Harrington

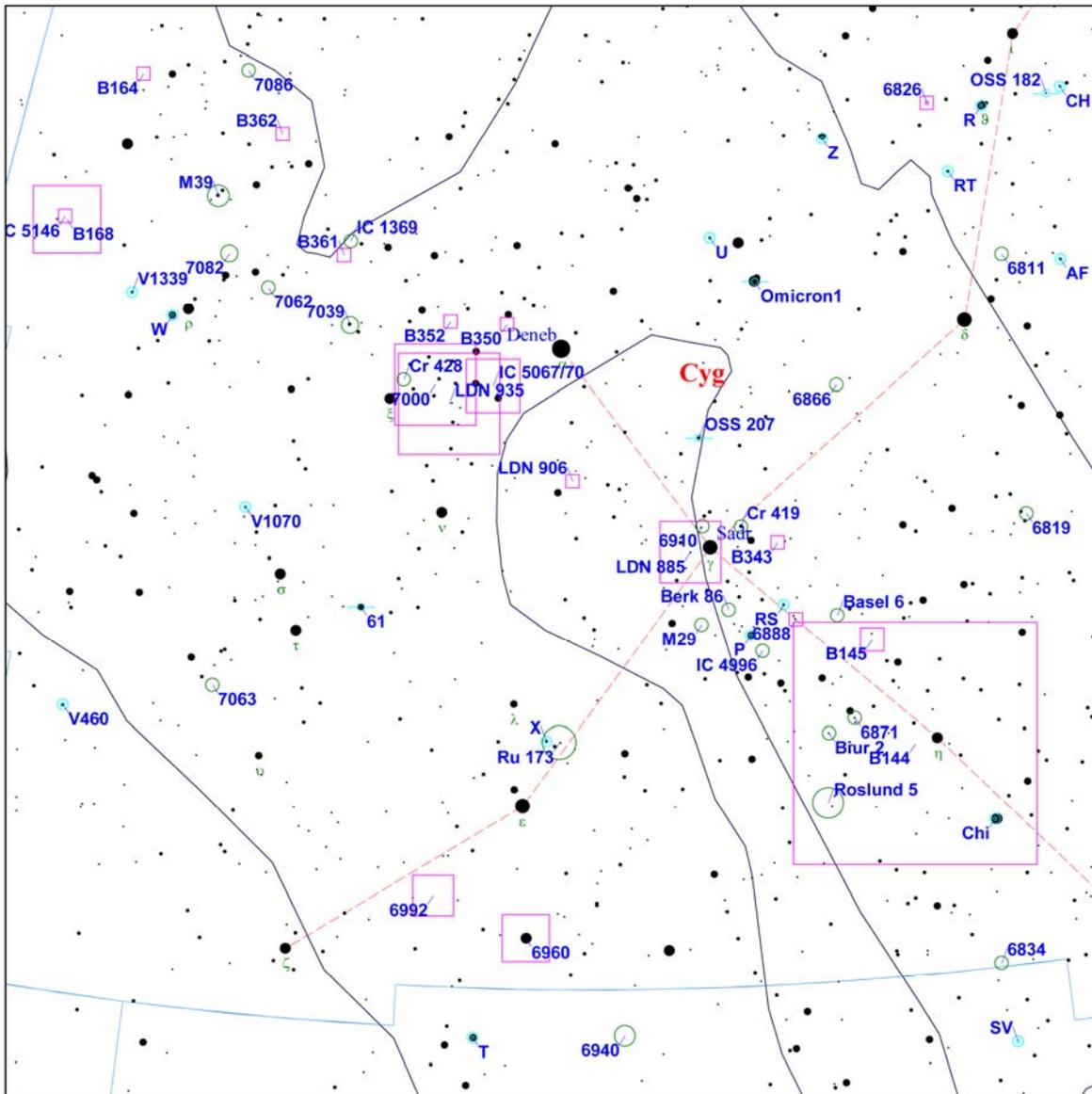


As the haze and heat of summer slowly gives way this month to drier autumn nights, we find Cygnus, the Swan, flying high in the evening sky. Few constellations offer such a diverse collection of binocular targets as Cygnus. We visited some in this column last October, and return again to continue that journey.

Our jumping-off point this month is the Swan's center star, Sadr, plotted as Gamma ( $\gamma$ ) Cygni on most atlases. It's from this central point that the Swan's wings stretch away from its body, westward to Zeta ( $\zeta$ ) Cygni and eastward to Eta ( $\eta$ ) Cygni.



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



**Touring the Universe Through Binoculars Atlas**  
**RA: 20h 42m, Dec: 40d 16m, FOV: 25d, Mag: 7.5**

- |             |                    |           |            |
|-------------|--------------------|-----------|------------|
| ● ≤ 1.1     | ○ Galaxy           | ♁ Mercury | ♇ Pluto    |
| ● 1.1 - 2.1 | ○ Open Cluster     | ♃ Venus   | ☉ Sun      |
| ● 2.1 - 3.2 | ⊕ Globular Cluster | ♂ Mars    | ☾ Moon     |
| ● 3.2 - 4.3 | □ Diffuse Nebula   | ♃ Jupiter | ♁ Asteroid |
| ● 4.3 - 5.4 | □ Planetary Nebula | ♄ Saturn  | ☄ Comet    |
| ● 5.4 - 6.4 | ○ Variable Star    | ♅ Uranus  | ○ Unknown  |
| ● > 6.4     | ○ Double Star      | ♆ Neptune |            |

Above: Finder chart for this month's *Binocular Universe*.  
 Chart adapted from *Touring the Universe through Binoculars Atlas* (TUBA),  
[www.philharrington.net/tuba.htm](http://www.philharrington.net/tuba.htm)

Back in 2003, I received an e-mail from Hope Douglas Harle-Mould of Kenmore, NY, describing several interesting asterisms that he had uncovered through his binoculars. His first is centered on Sadr and is christened the **Amber Heart of Cygnus**. He writes, "The central star in the Northern Cross, where the heart of Cygnus the Swan would be, is amber to my eye. With the naked eye it is solitary, but in binoculars you see it surrounded by a halo of dim stars. These stars form a distinctively heart shape, a little rounded off, but clearly a heart. What's more, the amber star is in the center of the top of the heart, like a jewel in a pendant." Even though the area is teeming with stars, the heart is clearly discernible through 7x to 10x binoculars.

Charles Messier missed the Amber Heart when he surveyed this area in July 1764, but he did spot a small clump of starlight a little less than 2° south-southeast of Sadr. Noting its position, he added it as the 29th entry in his famous catalog. Though not one of Messier's best, **M29** is visible through small, hand-supported binoculars as a tiny, rectangular patch of light, with perhaps two or three faint points buried within. My 20x80 and 25x100 giant binoculars have enough oomph to resolve the cluster's dipper pattern, which reminds many of the much brighter Pleiades in the winter sky. Four of the cluster's brightest cluster stars form the rectangular bowl, while a fifth star can be imagined as a stubby handle.



*Left. M29 and surroundings, as portrayed through the author's 20x80 binoculars.*

*North is up.*

You may just spot a second, fainter tuft of celestial fuzz just a full-moon diameter north of Sadr. That's open cluster **NGC 6910**. William Herschel is credited with its discovery in 1786, when he described it as "pretty bright, pretty small, poor, pretty compressed, stars from the 10th to 12th magnitude." Of course, that was through

his 18.7-inch reflector. Binoculars show a small, subtle glow with one or two faint stars poking through. That was still enough to earn NGC 6910 a place in the Astronomical League's [Binocular Deep Sky Club](#).

Our next stop, **NGC 6819**, is nestled about 8° west of Sadr and is also a member of the Binocular Deep Sky Club. Shining at 7th magnitude and spanning just 5 arc-minutes, this little open cluster is easily missed with a casual scan of the area. Look for its gentle glow centered in a triangle of stars. Its round, diffuse appearance in binoculars – and even in small telescopes -- may remind some of a distant globular cluster. Spectral analysis of its stars, however, leaves no doubt that this is an open cluster.

Before shuffling back to Sadr, take a detour northward to the colorful triple star **Omicron-1 (o-1) Cygni**. Omicron-1 lies 5° west-northwest of Deneb. Swing your binoculars its way and you'll find not one, but two suns. Fourth-magnitude Omicron-1 will appear pale orange, while its 5th-magnitude companion, 30 Cygni, is blue-white. Defocusing your binoculars slightly will enhance the colors, but keep them sharp to spot a third member, a 7th-magnitude sun just southeast from Omicron-1. A steady hand will be needed to see it through 10x binoculars. As an aside, these three stars are not physically related to each other in space, but are just a line-of-sight coincidence in an overpacked Milky Way field.

Back to Sadr we go, but only for a brief pause before heading southeastward toward Epsilon (η) Cygni. Pause about three-quarters of the way there. Can you see a clumping of faint stars spanning an area a little larger than the Full Moon? That's the little observed cluster **Ruprecht 173** (abbreviated Ru 173 on the chart). Two dozen cluster stars may be counted through 50-mm binoculars, with the four brightest set in a narrow diamond-shaped pattern. Many larger binoculars are actually at a disadvantage for viewing Ruprecht 173, since their smaller fields easily lose the clustering effect.

For variable star fans, Ruprecht 173 hosts **X Cygni**, a well-known Cepheid variable. Like all Cepheids, X is a yellow giant star. Binoculars are fine for following it across its full 16-day cycle. At its peak, X shines at 6th magnitude and is the cluster's brightest member. At minimum, it dips to 7th magnitude before cycling upward again.

Our final target this month is **NGC 7063**, which you can see along the left (eastern) edge of the finder chart above. You'll find it 2° northeast of 4th-magnitude Upsilon (υ) Cygni. Using averted vision through my 10x50 binoculars, NGC 7063 is visible faintly as a small nebulous patch of grayish light with a hint of about half a dozen dim stars embedded within.

You are not wanting for other binocular targets to look at in this corner of the Binocular Universe. Take a look below at all that await you!

Object	Con	Type	R.A. (2000)	Dec	Mag	Size/Sep/ Period	Notes
CH	Cyg	Vr	19 24.5	+50 14	6.4-8.7	97 days	Z And type
OSS 182	Cyg	**	19 26.8	+50 9	7.3,8.5	73"	300°(1956);12470
AF	Cyg	Vr	19 30.2	+46 9	7.4-9.4p	94.1 days	Semi-Regular
R	Cyg	Vr	19 36.8	+50 12	6.1-14.2	426.44 days	*TUB page 139* Long Period Variable
6811	Cyg	OC	19 38.2	+46 34	6.8	13'	
6819	Cyg	OC	19 41.3	+40 11	7.3	5'	
RT	Cyg	Vr	19 43.6	+48 47	6.4-12.7	190.28 days	Long Period Variable
6826	Cyg	PN	19 44.8	+50 31	9.8p	30"x140"	*TUB page 139* Blinking Planetary
Chi	Cyg	Vr	19 50.8	+32 55	3.3-14.2	406.93 days	*TUB page 139* Long Period Variable
6834	Cyg	OC	19 52.2	+29 25	7.8	5'	
B144	Cyg	Dk	19 59	+35 0		360'x180'	Fish on the Platter Nebula
Z	Cyg	Vr	20 1.4	+50 3	7.4-14.7	263.69 days	Long Period Variable
B145	Cyg	Dk	20 2.8	+37 40		35'x6'	
6866	Cyg	OC	20 3.7	+44 0	7.6	7'	
6871	Cyg	OC	20 5.9	+35 47	5.2	20'	*TUB page 139-140*
Basel 6	Cyg	OC	20 6.8	+38 21	7.7	14'	
Biur 2	Cyg	OC	20 9.2	+35 29	6.3	13'	
Roslund 5	Cyg	OC	20 10	+33 46		45'	*TUB page 140*
6888	Cyg	DN	20 12	+38 21		20'x10'	Crescent Nebula
RS	Cyg	Vr	20 13.4	+38 44	6.5-9.3	417.39 days	Semi-Regular
B343	Cyg	Dk	20 13.5	+40 16		10'x5'	
Omicron1	Cyg	**	20 13.6	+46 44	4,7,5	107",338"	173°,338°(1926);13554
IC 4996	Cyg	OC	20 16.5	+37 38	7.3	6'	
P	Cyg	Vr	20 17.8	+38 2	3.0-6.0	--	S Dor type
Cr 419	Cyg	OC	20 18.1	+40 43	5.4p	5'	
U	Cyg	Vr	20 19.6	+47 54	5.9-12.1	462.40 days	Long Period Variable
Berk 86	Cyg	OC	20 20.4	+38 42	7.9	8'	
OSS 207	Cyg	**	20 22.9	+42 59	6.6,8.5	93"	63°(1920);13786
6910	Cyg	OC	20 23.1	+40 47	7.4	8'	
M29	Cyg	OC	20 23.9	+38 22	6.6	7'	*TUB page 140* NGC 6913
LDN 885	Cyg	Dk	20 24.8	+40 10		90'x20'	
LDN 906	Cyg	Dk	20 40	+42 0			*TUB page 140* Northern Coalsack
Ru 173	Cyg	OC	20 41.8	+35 33		50'	*TUB page 140*
X	Cyg	Vr	20 43.4	+35 35	5.9-6.9	16.39 days	Cepheid
6960	Cyg	DN	20 45.7	+30 43		70'x6'	Filamentary Nebula (52 Cyg)
B350	Cyg	Dk	20 49.1	+45 53		3'	
IC 5067/70	Cyg	DN	20 50.8	+44 21		80'x70'	*TUB page 141* Pelican Nebula
6992	Cyg	DN	20 56.4	+31 43		60'x8'	Veil Nebula
LDN 935	Cyg	Dk	20 56.8	+43 52		150'x40'	*TUB page 141* Between N.A. & Pelican Neb
B352	Cyg	Dk	20 57.1	+45 54		20'x10'	
7000	Cyg	DN	20 58.8	+44 20		120'x100'	*TUB page 141* North America Nebula
Cr 428	Cyg	OC	21 3.2	+44 25	8.7p	14'	
61	Cyg	**	21 6.9	+38 45	5.2,6.0	321"	*TUB page 141,143* 195°(1976);14636;large
7039	Cyg	OC	21 11.2	+45 39	7.6	25'	*TUB page 143*
IC 1369	Cyg	OC	21 12.1	+47 44	6.8	4'	
B361	Cyg	Dk	21 12.9	+47 22		17'	
V1070	Cyg	Vr	21 22.8	+40 56	6.7-7.7		Semi-Regular
7062	Cyg	OC	21 23.2	+46 23	8.3	7'	
B362	Cyg	Dk	21 24	+50 10		15'x8'	
7063	Cyg	OC	21 24.4	+36 30	7.0	8'	
7082	Cyg	OC	21 29.4	+47 5	7.2	25'	
7086	Cyg	OC	21 30.5	+51 35	8.4	9'	
M39	Cyg	OC	21 32.2	+48 26	4.6	32'	*TUB page 143-144* NGC 7092
W	Cyg	Vr	21 36	+45 22	6.8-8.9	126.26 days	Semi-Regular
V460	Cyg	Vr	21 42	+35 31	5.6-7.0		Irregular
V1339	Cyg	Vr	21 42.1	+45 46	5.9-7.1	35 days	Semi-Regular
B164	Cyg	Dk	21 46.5	+51 4		12'x6'	
B168	Cyg	Dk	21 53.2	+47 12		100'x10'	*TUB page 144* Cocoon Nebula at east end
IC 5146	Cyg	DN	21 53.5	+47 16		12'x12'	*TUB page 144* Cocoon Nebula
SV	Vul	Vr	19 51.5	+27 28	6.7-7.8	45.035 days	Cepheid
6940	Vul	OC	20 34.6	+28 18	6.3	31'	*TUB page 260-261*
T	Vul	Vr	20 51.5	+28 15	5.4-6.1	4.436 days	Cepheid

Have a suggestion for a fun binocular target that you'd like to share the rest of us?  
E-mail me at [phil@philharrington.net](mailto:phil@philharrington.net).

The late summer Milky Way is wonderful to scan through binoculars, and proves once again that two eyes are better than one.



About the Author:

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