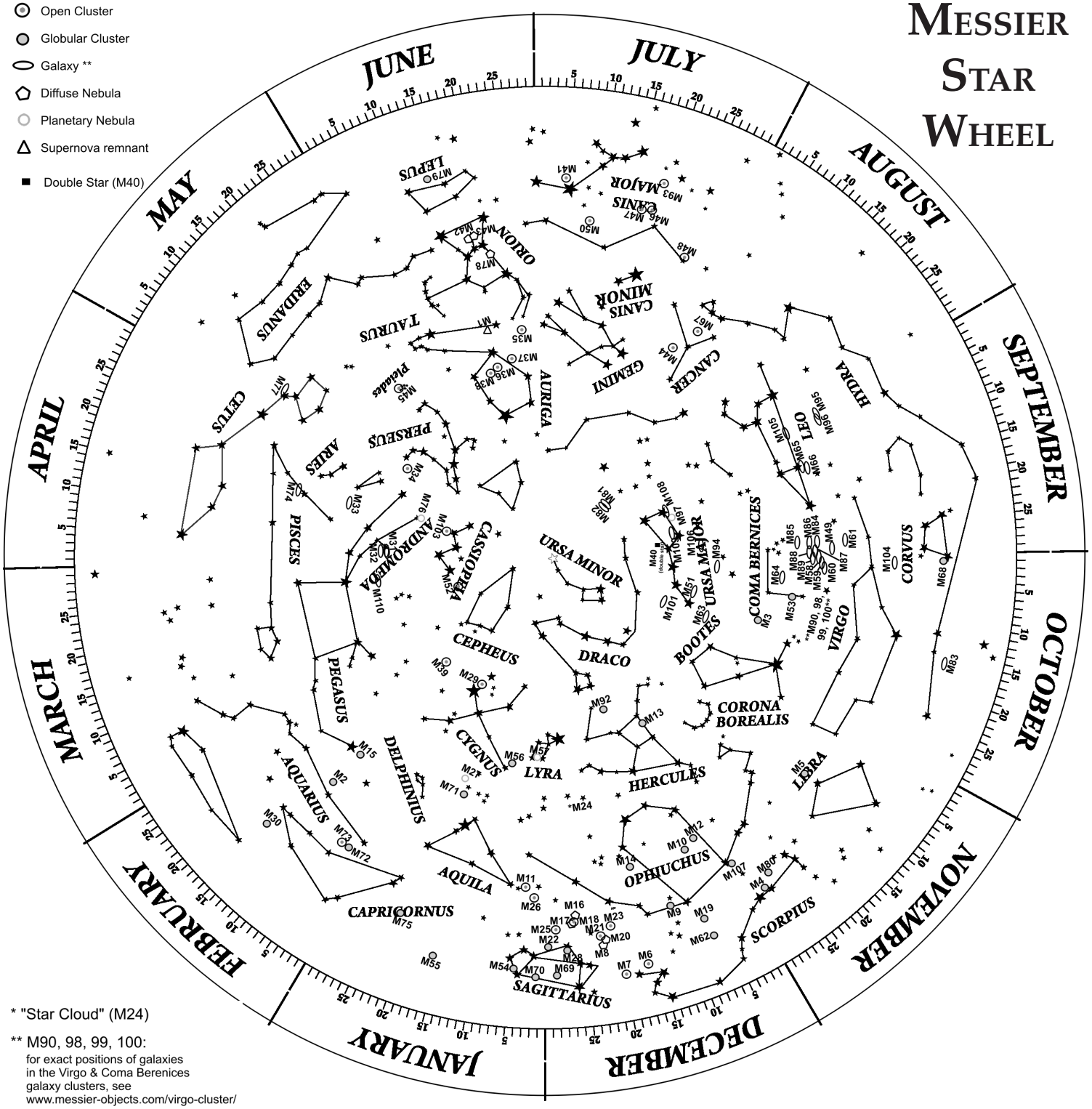
Messier Star Wheel



* "Star Cloud" (M24)

** M90, 98, 99, 100:
for exact positions of galaxies in the Virgo & Coma Berenices galaxy clusters, see www.messier-objects.com/virgo-cluster/

INSTRUCTIONS FOR ASSEMBLING STAR WHEELS

Step 1: Copy Star Wheel and Star Wheel Holder pages on heavy cardstock. Optionally, use glue stick or doublestick tape to adhere the pages onto a file folder or heavy cardstock.

Step 2: Cut along the solid outer circle of the Star Wheel and along the solid lines on the Star Wheel Holder, removing the grid areas.

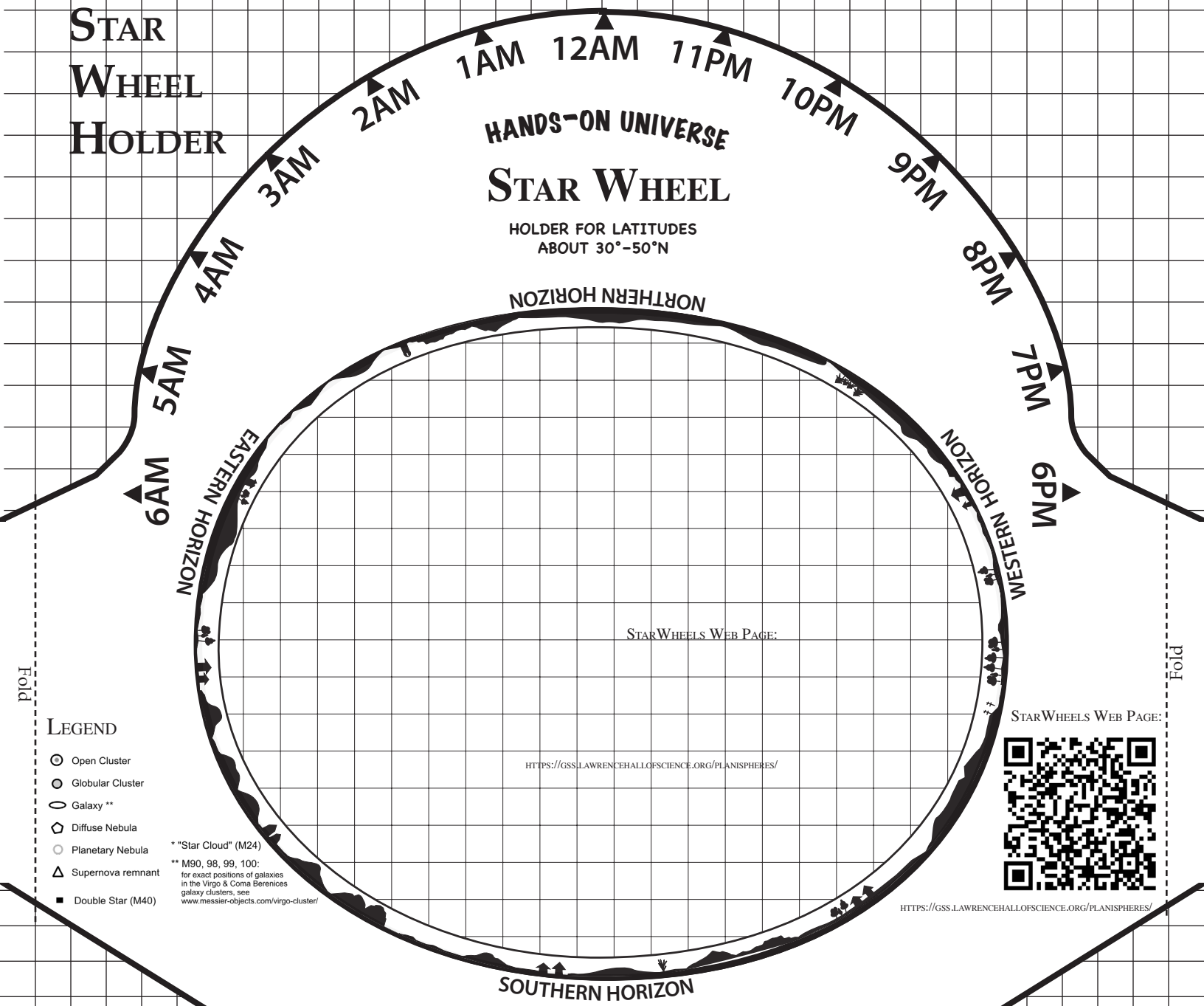
Step 3: On the Star Wheel Holder, fold along the 3 dotted lines.

Step 4: Tape the sides so that the Star Wheel Holder forms a pocket for the Star Wheel to go into.

Step 5: Place the Star Wheel in the Star Wheel Holder.

HOU Star Wheels are based on LHS Sky Challengers created by Budd Wentz.
Star Wheels source - https://gss.lawrencehallofscience.org/planispheres/

Star Wheel Holder



Fold

Fold

Legend

- Open Cluster
- Globular Cluster
- Galaxy **
- Diffuse Nebula
- Planetary Nebula
- Supernova remnant
- Double Star (M40)

* "Star Cloud" (M24)

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StarWheels Web Page:

https://gss.lawrencehallofscience.org/planispheres/

Tape

Tape

Instructions for Using Hands-On Universe Star Wheels

1. Align your date and time
2. Locate the object you want to find on the map.
3. Turn your map so the horizon closest to the object is at the bottom.
4. The star positions in the sky should match those on the wheel.

Star magnitudes 0, 1, 2, & 3 are labeled

Hands-On Universe Star Wheels are based on LHS Sky Challengers created by Budd Wentz.

Star Wheels source - https://gss.lawrencehallofscience.org/planispheres/

[this site has latest version of starwheels, holders]

Version: February 2026

[M78 & M44 Corrected]

Messier Catalog

M#	Name	Type	Constellation	Mag	Distance	RA	DEC	Size	NGC	Discoverer	Year
1	Crab Nebula	SNR	Taurus	8.4		05h34.5m	+22°01'		1952		
2		Globular Cluster	Aquarius	6.5		21h33.5m	-00°49'		7089		
3	Has variables	Globular Cluster	Canes Venatici	6.4		13h42.2m	+28°23'		5272		
4	Bright globular	Globular Cluster	Scorpius	5.9		16h23.6m	-26°32'		6121		
5		Globular Cluster	Serpens	5.8		15h18.6m	+02°05'		5904		
6	Butterfly Cluster	Open Cluster	Scorpius	4.2		17h40.1m	-32°13'		6405		
7	binocular	Open Cluster	Scorpius	3.3		17h53.9m	-34°49'		6475		
8	Lagoon Nebula	Diffuse Nebula	Sagittarius	5.8		18h03.8m	-24°23'		6523		
9		Globular Cluster	Ophiuchus	7.9		17h19.2m	-18°31'		6333		
10		Globular Cluster	Ophiuchus	6.6		16h57.1m	-04°06'		6254		
11	Wild Duck	Open Cluster	Scutum	5.3	5,460	18h51.1m	-06°16'	13'	6705	Gottfried Kirch	1691
12		Globular Cluster	Ophiuchus	6.6		16h47.2m	-01°57'		6218		
13	Great Globular	Globular Cluster	Hercules	5.3	23,400	16h41.7m	+36°28'	21'	6205	Edmond Halley	1714
14		Globular Cluster	Ophiuchus	7.6		17h37.6m	-03°15'		6402		
15		Globular Cluster	Pegasus	6.4		21h30.0m	+12°10'		7078		
16	Eagle Nebula*	Diffuse Nebula	Serpens	6	9,000	18h18.8m	-13°47'	120'x25'	6611	de Cheseaux	1746
17	Omega**	Diffuse Nebula	Sagittarius	7	4,890	18h20.8m	-16°11'	40'x30'	6618	deCheseaux	1746
18		Open Cluster	Sagittarius	6.9		18h19.9m	-17°08'		6613		
19		Globular Cluster	Ophiuchus	7.2		17h02.6m	-26°16'		6273		
20	Trifid Nebula***	E/RN	Sagittarius	8.5	5,000	18h02.6m	-23°02'	28'	6514	Le Gentil	1747
21		Open Cluster	Sagittarius	5.9		18h04.6m	-22°30'		6531		
22	Crackerjack****	Globular Cluster	Sagittarius	5.1	10,100	18h36.4m	-23°54'	33'	6656	Abraham Ihle	1665
23		Open Cluster	Sagittarius	5.5		17h56.8m	-19°01'		6494		
24	Rich star cloud		Sagittarius	4.5		18h16.9m	+18°29'				
25		Open Cluster	Sagittarius	4.6		18h31.6m	-19°15'		IC4725		
26		Open Cluster	Scutum	8		18h45.2m	-09°24'		6694		
27	Dumbbell Nebula	Planetary Nebula	Vulpecula	8.1		19h59.6m	+22°43'		6853		
28		Globular Cluster	Sagittarius	6.9		18h24.5m	-24°52'		6626		
29		Open Cluster	Cygnus	6.6		20h23.9m	+48°26'		6913		
30		Globular Cluster	Capricornus	7.5		21h40.4m	-23°11'		7099		
31	Great Galaxy	Spiral Galaxy	Andromeda	3.4		00h42.7m	+41°16'		224		
32	companion M31	Elliptical Galaxy	Andromeda	8.2		00h42.7m	+40°52'		221		
33		Spiral Galaxy	Triangulum	5.7		01h33.9m	+30°39'		598		
34		Open Cluster	Perseus	5.2		02h42.0m	+42°47'		1039		
35		Open Cluster	Gemini	5.1		06h08.9m	+24°20'		2168		
36		Open Cluster	Auriga	6		05h36.1m	+34°08'		1960		
37		Open Cluster	Auriga	5.6		05h52.4m	+32°33'		2099		
38		Open Cluster	Auriga	6.4		05h28.7m	+35°50'		1912		
39		Open Cluster	Cygnus	4.6		21h32.2m	+48°26'		7092		
40		DS	Ursa Major	8		12h22.4m	+58°05'				
41		Open Cluster	Canis Major	4.5		06h47.0m	-20°01'		2287		
42	Great Nebula	Diffuse Nebula	Orion	4	1,500	05h35.4m	-05°27'	1x1.5°	1976	Nicholas Peiresc	1611
43	Next to M42	Diffuse Nebula	Orion	6.8	1,500	05h35.6m	-05°16'	20'x15'	1982	de Mairan	1750
44	Beehive Cluster	Globular Cluster	Cancer	3.1		08h40.1m	+19°59'		2632		
45	Pleiades	Open Cluster	Taurus	1.2	407	03h47.0m	+24°07'	2°	1952	Known from antiquity	
46		Open Cluster	Puppis	6.1		07h41.8m	-14°49'		2437		
47		Open Cluster	Puppis	4.4		07h36.6m	-14°30'		2422		
48		Open Cluster	Hydra	5.8		08h13.8m	-05°48'		2548		
49		Elliptical Galaxy	Virgo	8.4		12h29.8m	+08.00'		4472		
50		Open Cluster	Mon	5.9		07h03.2m	-08°20'		2323		
51	Whirlpool Galaxy	Spiral Galaxy	Canes Venatici	8.1		13h29.9m	+47°12'		5194		
52		Open Cluster	Cassiopeia	6.9		23h24.2m	+61°35'		7654		
53		Globular Cluster	Coma Berenices	7.7		13h12.9m	+18°10'		5024		
54		Globular Cluster	Sagittarius	7.7		18h55.1m	-30°29'		6715		
55		Globular Cluster	Sagittarius	7		19h40.0m	-30°58'		6809		
56		Globular Cluster	Lyra	8.2		19h16.6m	+30°11'		6779		
57	Ring Nebula	Planetary Nebula	Lyra	8.8	1,140	18h53.6m	+33°02'	00'76"	6720	de Pellepoix	1779
58		Spiral Galaxy	Virgo	9.8		12h37.7m	+11°49'		4579		
59		Elliptical Galaxy	Virgo	9.8		12h42.0m	+11°39'		4621		
60		Elliptical Galaxy	Virgo	8.8		12h43.7m	+11°33'		4649		
61	face-on spiral	Spiral Galaxy	Virgo	9.7		12h21.9m	+04°28'		4303		
62		Globular Cluster	Ophiuchus	6.6		17h01.2m	-30°07'		6266		
63	Sunflower Galaxy	Spiral Galaxy	Canes Venatici	8.6		13h58.8m	+42°02'		5055		
64	Black-eye Galaxy	Spiral Galaxy	Coma Berenices	8.5		12h56.7m	+21°41'		4826		

65		Spiral Galaxy	Leo	9.3		11h18.9m	+13°05'		3623		
66		Spiral Galaxy	Leo	9		11h20.2m	+12°59'		3627		
67		Open Cluster	Cancer	6.9		08h50.4m	+11°49'		2682		
68		Globular Cluster	Hydra	8.2		12h39.5m	-26°45'		4590		
69		Globular Cluster	Sagittarius	7.7		18h31.4m	-32°21'		6637		
70		Globular Cluster	Sagittarius	8.1		18h43.2m	-32°18'		6681		
71		Globular Cluster	Sge	4.4	13,000	19h53.8m	+18°47'	7.2'	6838	de Cheseaux	1775
72		Globular Cluster	Aquarius	9.4		20h53.5m	-12°32'		6981		
73		Open Cluster	Aquarius	4.4		20h58.9m	-12°38'		6994		
74		Spiral Galaxy	Pisces	9.2		01h36.7m	+15°47'		628		
75		Globular Cluster	Sagittarius	8.6		20h06.1m	-21°55'		6864		
76	Little Dumbbell	Planetary Nebula	Perseus	10.1	3,900	01h42.4m	+51°34'	00'67"	650	Pierre Mechain	1780
77	Seyfert Galaxy	Spiral Galaxy	Cetus	8.8		02h42.7m	-00°01'		1068		
78		Reflection Nebula	Orion	8		05h46.7m	+00°03'		2068		
79		Globular Cluster	Lepus	8		05h24.5m	-24°33'		1904		
80		Globular Cluster	Scorpius	7.2	27,000	16h17.0m	-22°59'	9'	6093	Messier	1781
81		Spiral Galaxy	Ursa Major	6.8		09h55.6m	+69°04'		3031		
82	'exploding' galaxy	Irregular Galaxy	Ursa Major	8.4	17M	09h55.8m	+69°41'	11.2'x4.3'	3034	Johan Bode	1774
83		Spiral Galaxy	Hydra	10.1		13h37.0m	-29°52'		5236		
84		Elliptical Galaxy	Virgo	9.3		12h25.1m	+12°53'		4374		
85		Elliptical Galaxy	Coma Berenices	9.3		12h25.4m	+18°11'		4382		
86		Elliptical Galaxy	Virgo	9.2		12h26.2m	+12°57'		4406		
87	visible jet	Elliptical Galaxy	Virgo	8.6		12h30.8m	+12°24'		4486		
88		Spiral Galaxy	Coma Berenices	9.5		12h32.0m	+14°25'		4501		
89		Elliptical Galaxy	Virgo	9.8		12h35.7m	+12°33'		4552		
90		Spiral Galaxy	Virgo	9.5		12h36.8m	+13°10'		4569		
91	error in Messier catalog										
92		Globular Cluster	Hercules	6.5	25,400	17h17.1m	+43°08'	14'	6341	Johan Bode	1777
93		Open Cluster	Puppis	6.2		07h44.6m	-23°52'		2447		
94		Spiral Galaxy	Canes Venatici	8.1		12h50.9m	+41°07'		4736		
95		Barred Spiral	Leo	9.7	26.5M	10h44.0m	+11°42'	7.4'x5'	3351	Pierre Mechain	1781
96		Spiral Galaxy	Leo	9.2		10h46.8m	+11°49'		3368		
97	Owl Nebula	Planetary Nebula	Ursa Major	11.2		11h14.8m	+55°01'		3587		
98	nearly edge-on	Spiral Galaxy	Coma Berenices	10.1		12h13.8m	+14°54'		4192		
99	nearly face-on	Spiral Galaxy	Coma Berenices	9.8		12h18.8m	+14°25'		4254		
100	face-on	Spiral Galaxy	Coma Berenices	9.4		12h22.9m	+15°49'		4321		
101	Pinwheel Galaxy	Spiral Galaxy	Ursa Major	7.7		14h03.2m	+54°21'		5457		
102	error in Messier catalog										
103		Open Cluster	Cassiopeia	7.4		01h33.2m	+60°42'		581		
104	Sombrero	Spiral Galaxy	Virgo	8.3		12h40.0m	-11°37'		4594		
105		Elliptical Galaxy	Leo	9.3		10h47.8m	+12°35'		3379		
106		Spiral Galaxy	Canes Venatici	8.3		12h19.0m	+47°18'		4258		
107		Globular Cluster	Ophiuchus	8.1		16h32.5m	_13°03'		6171		
108	nearly edge-on	Spiral Galaxy	Ursa Major	10		11h11.5m	+55°40'		3556		
109		Spiral Galaxy	Ursa Major	9.8		11h57.6m	+53°23'		3992		
110		Elliptical Galaxy	Andromeda	8		00h40.5m	+41°41'		205		

* also known as The Ghost or Star Queen Nebula; and Open Cluster

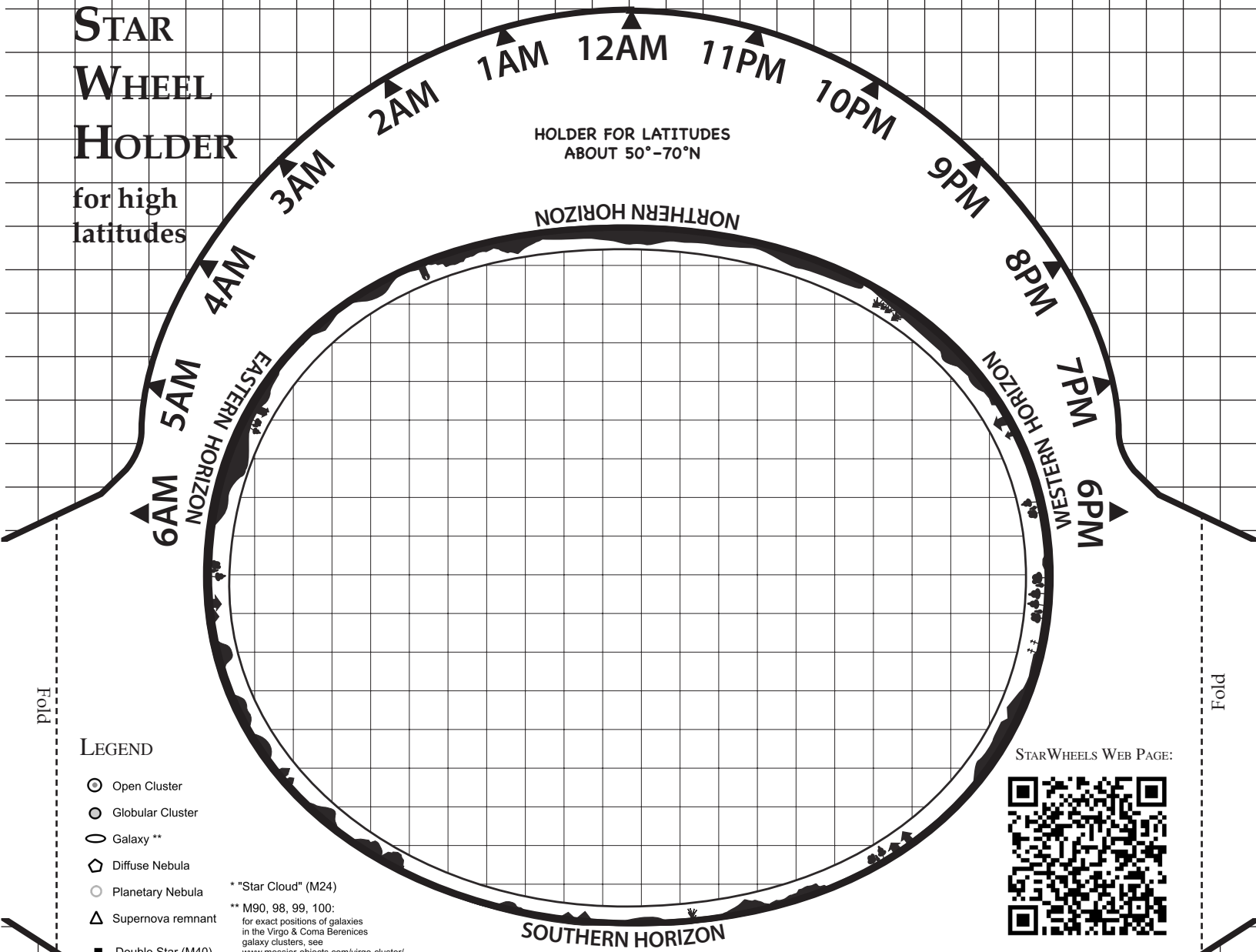
** also known as Horseshoe or Swan Nebula; has Open cluster (which is the mag 6)

*** Also known as The Clover; has Open cluster

**** Great Sagittarius Cluster

Star Wheel Holder

for high latitudes



Fold

Fold

Legend

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Hands-On Universe
Star Wheel

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