The Insider's Guide to the Galaxy Presents...

Messier Minutes

a guide to completing RASC's Messier Observing Certificate

Part 12 -

July 5th – August 15th, 2022

The following pages include a list of objects discussed in the July 5th, 2022, episode of Messier Minutes. Including finder charts and log pages.

List of Targets Discussed:

July 5 1st Quarter; twilight ends after 11:20 pm; southerly summer Messiers (Many All-stars!)

These targets culminate at midnight in early July, at 11 pm in early August

Messier #	Constellation	Magnitude	Type	NGC	Name
6	Sco	4.2	OC	6405	Butterfly Cluster
7	Sco	3.3	OC	6475	Ptolemy's Cluster
8	Sgr	6.0	EN	6530	Lagoon Nebula (SH2-25)
20	Sgr	6.3	EN/RN	6514	Trifid Nebula
21	Sgr	5.9	OC	6531	plus Webb's Cross
28	Sgr	7.7	GC	6626	Melotte 200
22	Sgr	5.1	GC	6656	Great Sagittarius Cluster
69	Sgr	8.3	GC	6637	Melotte 202
70	Sgr	9.1	GC	6681	Melotte 211
54	Sgr	7.7	GC	6715	Melotte 216

Notes:

M6:

(25 arc-minutes)

A large, relatively bright, and loose open cluster located near M7. Is visible in any size of telescope and in binoculars when the air is clean, but sits quite low in sky for Canadians. Located halfway along the line connecting Kaus Media (Delta Sgr) to Larawag (Epsion Sco), and 5° above (N of) Shaula/Lesath. Watch for one star not like the other blue stars, the orange variable star named BM Sco. Estimate the number of stars, and look for its butterfly shape. The Messier object smallest angle from the Galactic Centre. 1600 l-y away.

M7:

(80 arc-minutes)

A huge, bright and very loose open cluster near M6. As the southernmost Messier, it's very low in sky for Canadians. I have seen it with my unaided eyes, but binoculars work best - or a very low magnification telescope. Located a finger's width above midpoint between Kaus Australis (Epsilon Sgr) and Shaula. Count the stars and look for shapes/patterns, any other star colours. A mere 976 l-y away.

M8:

(1.5 x 0.6 degrees)

Huge, bright, emission nebula is triple the moon's diameter 4000 to 5000 l-y away. It should be visible with unaided eyes under good sky conditions, and easily seen in binoculars and in any size of telescope. Located above and between the Teapot lid and

spout - or double the line from Nunki (Sigma Sgr) to Kaus Borealis (Lambda Sgr). Larger aperture telescopes will show dark lanes and Bok globules. An OIII or UHC filter will enlarge it! Look for the central hourglass shape, additional lobes of gas, and the interior open cluster NGC 6350. Pan around to find NGC 6544 starfish globular to SE and the separate NGC6559 H2 region to E.

M20:

(20 arc-minutes)

A medium-sized, bright nebula near M21 and M8. Possible to see in binoculars, but excellent in all telescopes. Larger apertures will reveal the three lobes divided by dark dust lanes, especially using averted vision. Nebula filters may help a little, but not with the reflection nebula and dark nebula portions. Located just north of bright M8, or more than double the line from Namalsadirah (Phi Sgr) to Kaus Borealis (Lambda Sgr). Watch for the shape and structure, and internal stars, including a bright triple reminiscent of Orion's Trapezium. It shares the FOV with M21. About 5000 l-y away.

M21:

(16 arc-minutes)

A small, but pretty, open cluster located just north of M20. It is visible in binoculars and any size of telescope. Larger apertures will increase the star count well beyond the main concentrated core of blue stars. Count the stars and look for patterns in them. Located 2.5 ° southwest of Polis, or more than double the line from Namasadirah (Phi Sgr) to Kaus Borealis (Lambda Sgr). The Webb's Cross name comes from an asterism of magnitude 6 and 7 stars running between M20 and M21. 4200 l-y away.

M28:

(11 arc-minutes)

A small, but easy-to-find globular cluster located beside Kaus Borealis. Possible to see in binoculars, and definitely visible in any size of telescope. Located a finger's width to the upper right (NW) of Kaus Borealis (Lambda Sgr). Note the shape, the density profile, and try to resolve core stars in larger aperture telescopes. 17,900 l-y away. Look for the smaller globular NGC 6638 to the east of Kaus Borealis.

M22:

(32 arc-minutes)

A huge, bright globular cluster located above the Teapot near M28. Brighter than M13. Visible to the unaided eyes under good conditions, and easy in binoculars and any size of telescope. Located 2.5° to the upper left (NE) of Kaus Borealis (Lambda Sgr). 9,800 l-y away. Note its shape, density profile, and field stars. Look for the small globular NGC 6642 to its west.

M69:

(8 arc-minutes)

The most westerly of three Messier globulars along the Teapot base, so it doesn't climb very high for Canadians. Small, and not very bright. Can be seen in binoculars when highest in the sky, but shows best in telescopes from Canada. Needs a large aperture to resolve its core stars. Located two finger widths to the upper left (2.5° NE) of Kaus Australis, on the line toward Namalsadirah – above two mag 5.5 stars. Make note of the shape and density profile. 29,700 l-y away. Watch for nice globular NGC 6652 just to SE.

M70:

(8 arc-minutes)

The central and dimmest of three small Messier globulars along the Teapot base, so it doesn't climb very high for Canadians. Can be seen in binoculars when highest in the sky but is best in telescopes from Canada. Located midway between Ascella and Kaus Australis (Epsilon Sgr). Needs a large aperture to resolve stars around its collapsed core. Make note of the shape and density profile. 29,400 l-y away.

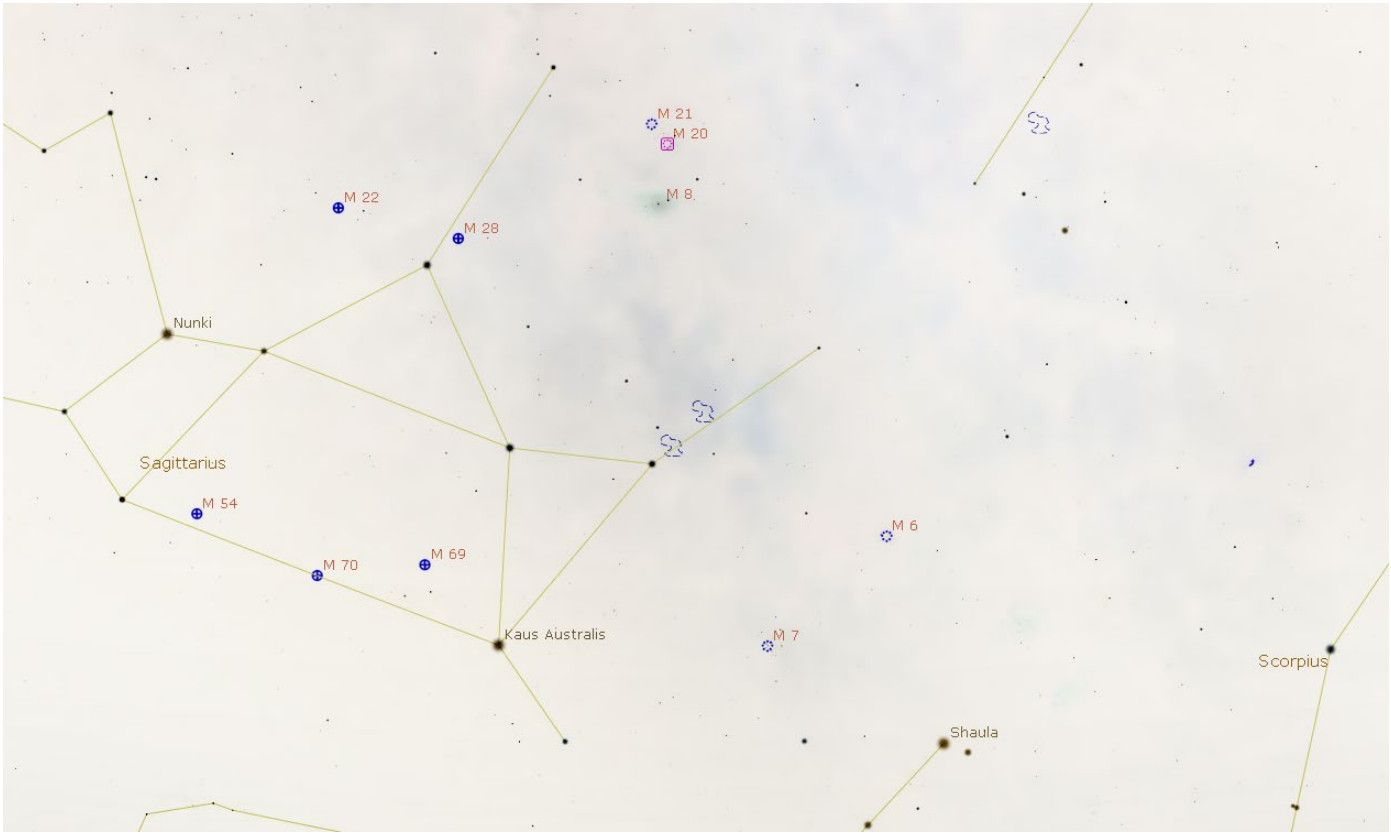
M54:

(12 arc-minutes)

Easternmost and brightest of the Teapot trio, and the farthest away Messier globular, at 87,400 l-y away – possibly extra-galactic! Gigantic in reality, possibly hosting a central black hole. Located a thumb's width to the right (WSW) of Ascella, just a little bit above a line drawn towards Kaus Australis. Visible in binoculars and in any size telescope when highest. Too far away for any stars to be resolved in amateur telescopes but try lots of magnification. Note the shape and density profile.

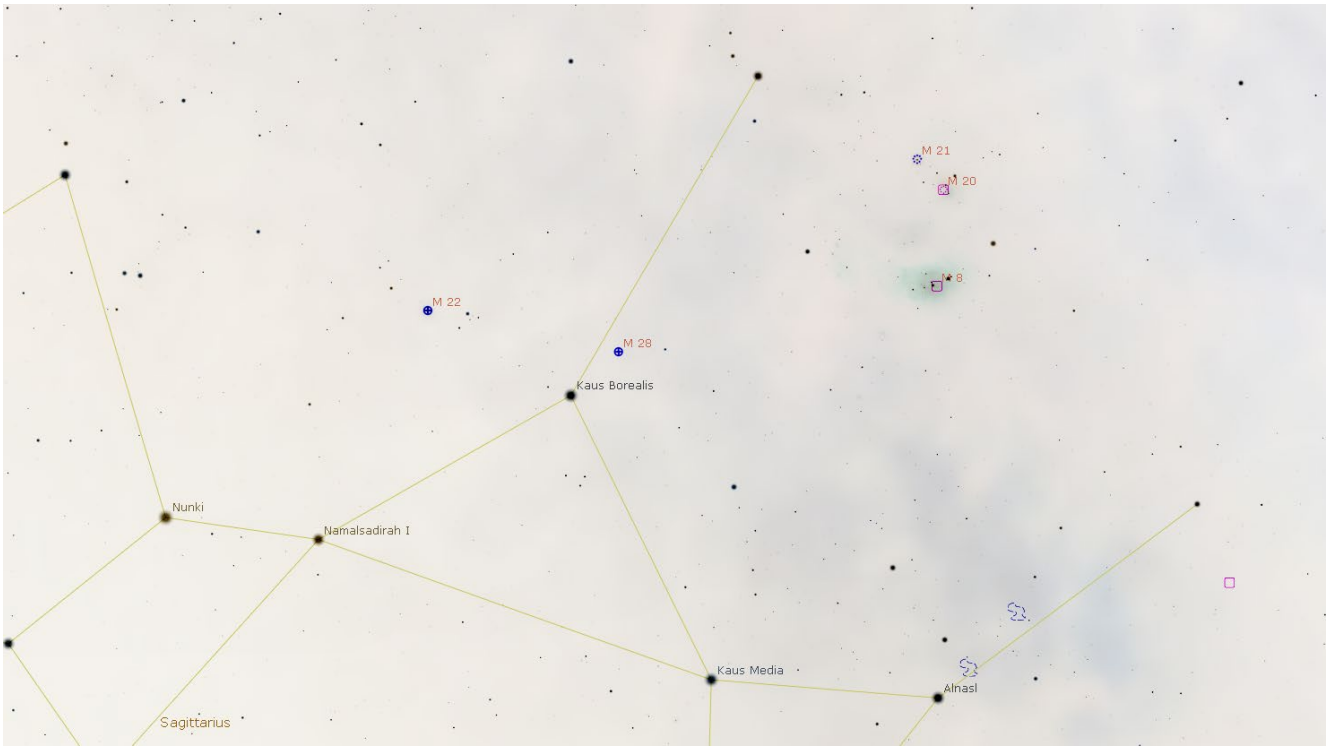
Target Finder Charts:

Overview of Targets -

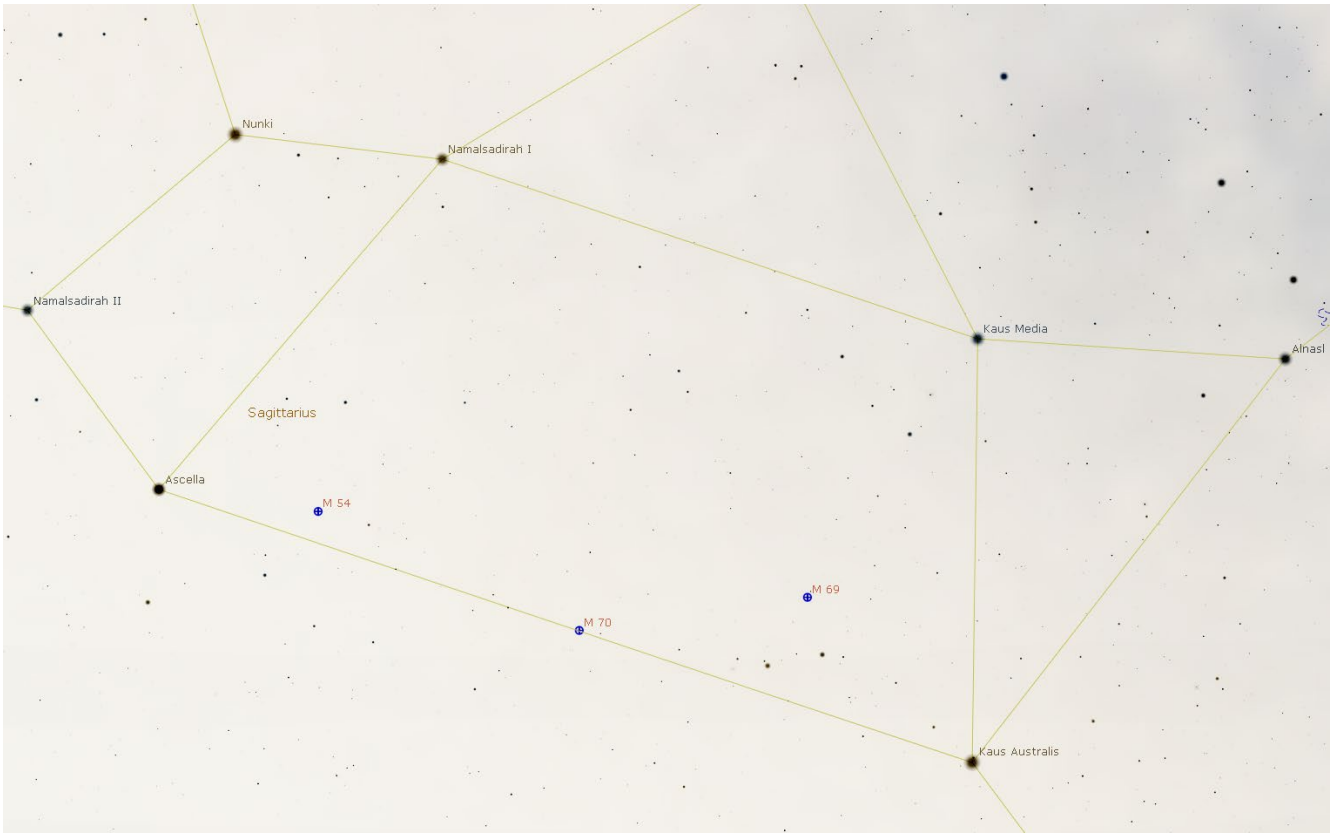


M7 & M6 Closer Look –

M8, M20, M21, M28, & M22 Closer View -



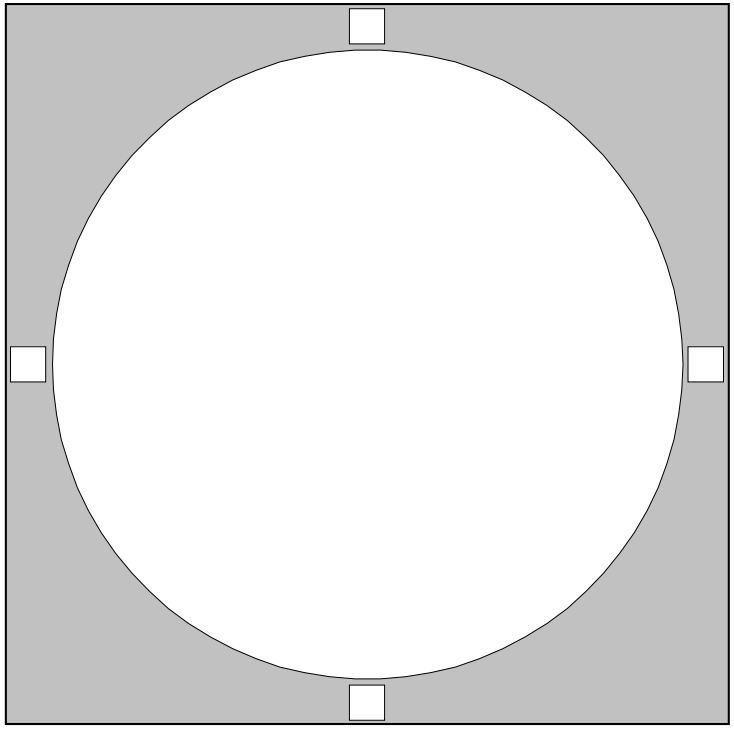
M69, M70, & M54 Closer View –



RASC Messier Objects - M6

Butterfy Cluster

Messier Object	**M6**		
NGC	**6405**		
Constellation	**Scorpius**		
Type	**Open Cluster**		
Magnitude	**4.2**		
Distance (Kilo light-years)	**2**		
RA	**17 40.1**		
Dec	**-32:13**		
Size	**33.0'**		
UM I / UM II	**376,377**	**164,A20**	
SA	**22**		
Remarks	**!! Butterfy Cluster; best at low power**		
Time (hh:mm)			
Seeing	1 2 3 4 5		
Transparency	1 2 3 4 5		
Observing Location			
Telescope			
Date (dd:mm:yyyy)			

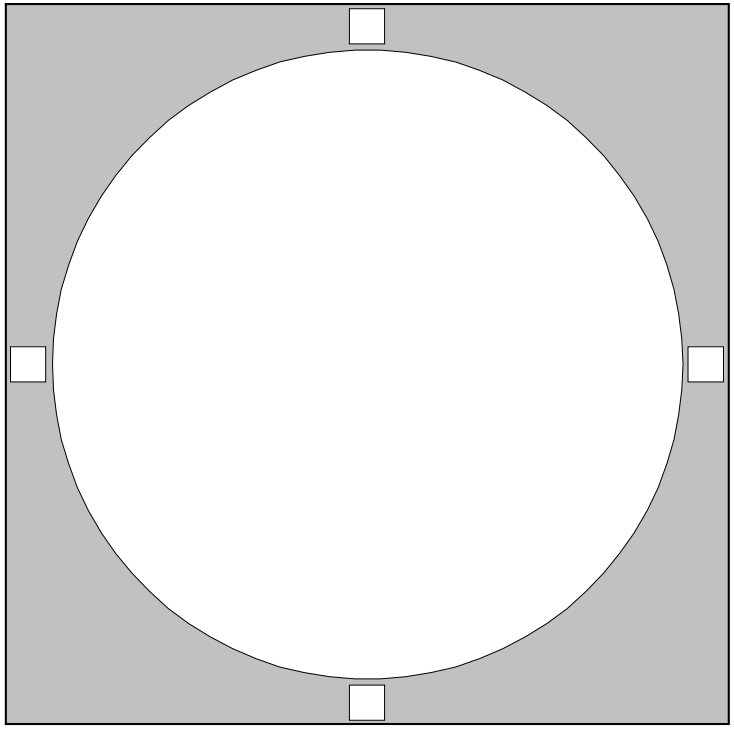


Notes

PN: Planetary Nebula	RN: (diffuse) Reflection Nebula	Seeing: 1 = Best 5 = Poor	* = Number of stars in cluster
SNR: Supernova Remnant	EN: (diffuse) Emission Nebula	Transparency: 1 = Best 5 = Poor	** p = Photographic Magnitude
GC: Globular Cluster	G-: Galaxy, with Hubble type given	Time: DD:MM:YYYY	*** !! = Showpiece Object
OC: Open Cluster	E/RN: Diffuse emission and reflection Nebula	Date: Specify Time Zone or UT	http://www.rasc.ca

RASC Messier Objects - M7

Messier Object	**M7**		
NGC	**6475**		
Constellation	**Scorpius**		
Type	**Open Cluster**		
Magnitude	**3.3**		
Distance (Kilo light-years)	**0.8**		
RA	**17 53.9**		
Dec	**-34:49**		
Size	**80.0'**		
UM I	UM II	**377**	**164,A20**
SA	**22**		
Remarks	**!! excellent in binoculars or rich-field scope**		
Time (hh:mm)			
Seeing	1 2 3 4 5		
Transparency	1 2 3 4 5		
Observing Location			
Telescope			
Date (dd:mm:yyyy)			



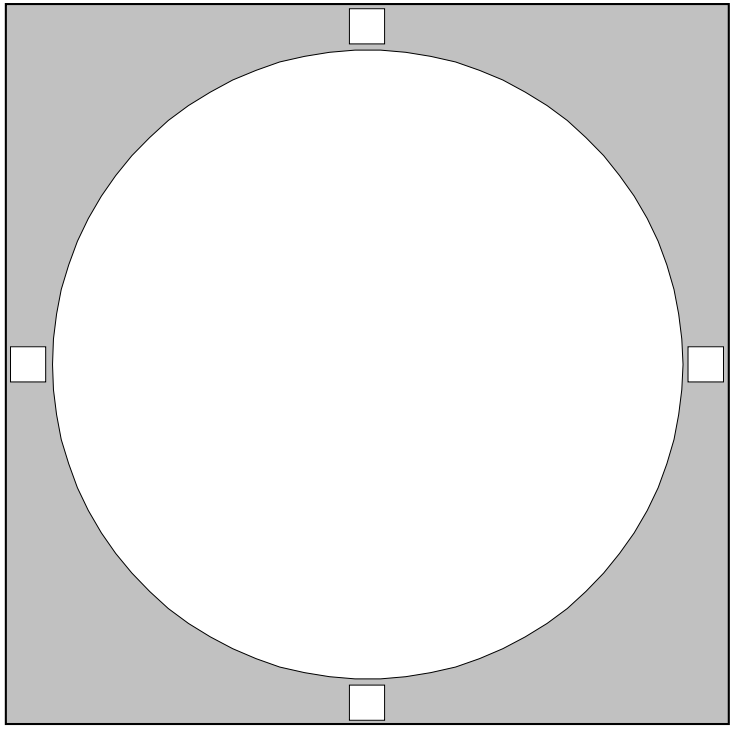
Notes

PN: Planetary Nebula	RN: (diffuse) Reflection Nebula	Seeing: 1 = Best 5 = Poor	* = Number of stars in cluster
SNR: Supernova Remnant	EN: (diffuse) Emission Nebula	Transparency: 1 = Best 5 = Poor	** p = Photographic Magnitude
GC: Globular Cluster	G-: Galaxy, with Hubble type given	Time: DD:MM:YYYY	*** !! = Showpiece Object
OC: Open Cluster	E/RN: Diffuse emission and reflection Nebula	Date: Specify Time Zone or UT	http://www.rasc.ca

RASC Messier Objects - M8

Lagoon Nebula

Messier Object	**M8**		
NGC	**6523**		
Constellation	**Sagittarius**		
Type	**Emission Nebula**		
Magnitude	**na**		
Distance (Kilo light-years)	**5.2**		
RA	**18 03.8**		
Dec	**-24:23**		
Size	**45.0' x 30.0'**		
UM I / UM II	**339**	**145,146**	
SA	**22**		
Remarks	**!! Lagoon Nebula with Open Cluster NGC 6530**		
Time (hh:mm)			
Seeing	1 2 3 4 5		
Transparency	1 2 3 4 5		
Observing Location			
Telescope			
Date (dd:mm:yyyy)			



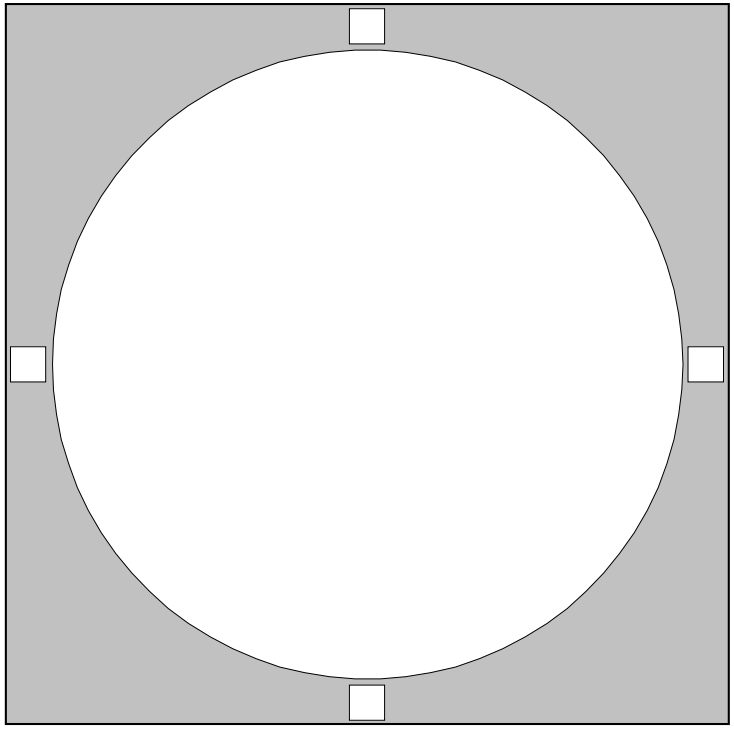
Notes

PN: Planetary Nebula	RN: (diffuse) Reflection Nebula	Seeing: 1 = Best 5 = Poor	* = Number of stars in cluster
SNR: Supernova Remnant	EN: (diffuse) Emission Nebula	Transparency: 1 = Best 5 = Poor	** p = Photographic Magnitude
GC: Globular Cluster	G-: Galaxy, with Hubble type given	Time: DD:MM:YYYY	*** !! = Showpiece Object
OC: Open Cluster	E/RN: Diffuse emission and reflection Nebula	Date: Specify Time Zone or UT	http://www.rasc.ca

RASC Messier Objects - M20

Trifid Nebula

Messier Object	**M20**		
NGC	**6514**		
Constellation	**Sagittarius**		
Type	**Emission/Reflection Nebula**		
Magnitude	**na**		
Distance (Kilo light-years)	**5.2**		
RA	**18 02.3**		
Dec	**-23:02**		
Size	**20.0' x 20.0'**		
UM I	UM II	**339**	**145,146,A17**
SA	**22**		
Remarks	**!! Trifid Nebula; look for dark lanes**		
Time (hh:mm)			
Seeing	1 2 3 4 5		
Transparency	1 2 3 4 5		
Observing Location			
Telescope			
Date (dd:mm:yyyy)			

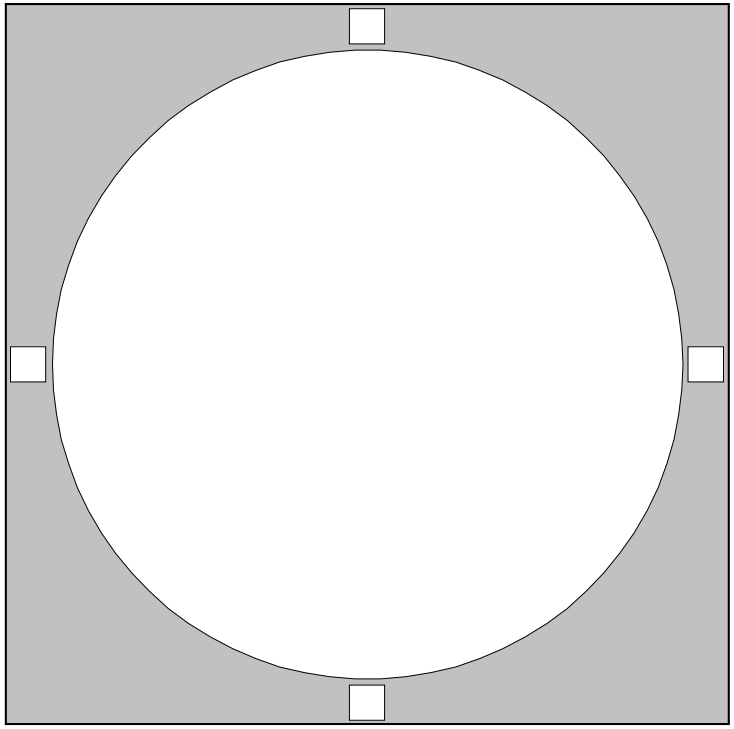


Notes

PN: Planetary Nebula	RN: (diffuse) Reflection Nebula	Seeing: 1 = Best 5 = Poor	* = Number of stars in cluster
SNR: Supernova Remnant	EN: (diffuse) Emission Nebula	Transparency: 1 = Best 5 = Poor	** p = Photographic Magnitude
GC: Globular Cluster	G-: Galaxy, with Hubble type given	Time: DD:MM:YYYY	*** !! = Showpiece Object
OC: Open Cluster	E/RN: Diffuse emission and reflection Nebula	Date: Specify Time Zone or UT	http://www.rasc.ca

RASC Messier Objects - M21

Messier Object	**M21**		
NGC	**6531**		
Constellation	**Sagittarius**		
Type	**Open Cluster**		
Magnitude	**5.9**		
Distance (Kilo light-years)	**4.25**		
RA	**18 04.6**		
Dec	**-22:30**		
Size	**13.0'**		
UM I	UM II	**339**	**145,A17**
SA	**22**		
Remarks	**0.7' noth east of M20; sparse cluster**		
Time (hh:mm)			
Seeing	1 2 3 4 5		
Transparency	1 2 3 4 5		
Observing Location			
Telescope			
Date (dd:mm:yyyy)			

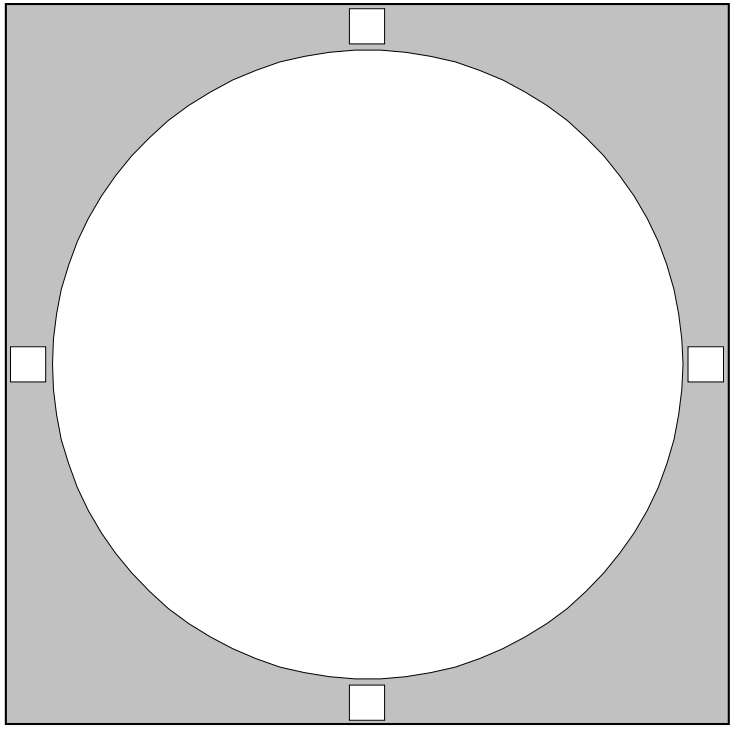


Notes

PN: Planetary Nebula	RN: (diffuse) Reflection Nebula	Seeing: 1 = Best 5 = Poor	* = Number of stars in cluster
SNR: Supernova Remnant	EN: (diffuse) Emission Nebula	Transparency: 1 = Best 5 = Poor	** p = Photographic Magnitude
GC: Globular Cluster	G-: Galaxy, with Hubble type given	Time: DD:MM:YYYY	*** !! = Showpiece Object
OC: Open Cluster	E/RN: Diffuse emission and reflection Nebula	Date: Specify Time Zone or UT	http://www.rasc.ca

RASC Messier Objects - M28

Messier Object	**M28**		
NGC	**6626**		
Constellation	**Sagittarius**		
Type	**Globular Cluster**		
Magnitude	**6.8**		
Distance (Kilo light-years)	**18.6**		
RA	**18 24.5**		
Dec	**-24:52**		
Size	**11.2'**		
UM I	UM II	**339,340**	**145**
SA	**22**		
Remarks	**compact globular near M22**		
Time (hh:mm)			
Seeing	1 2 3 4 5		
Transparency	1 2 3 4 5		
Observing Location			
Telescope			
Date (dd:mm:yyyy)			

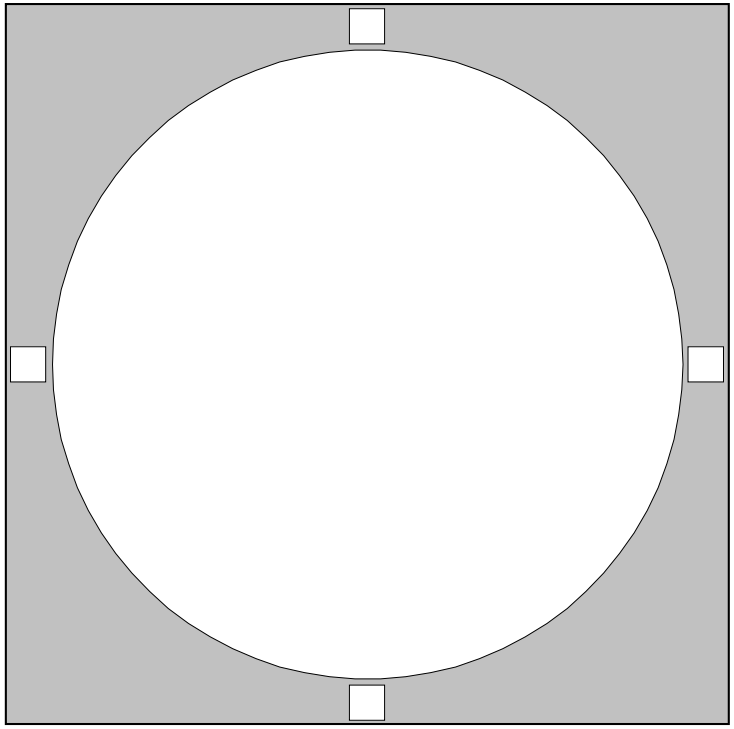


Notes

PN: Planetary Nebula	RN: (diffuse) Reflection Nebula	Seeing: 1 = Best 5 = Poor	* = Number of stars in cluster
SNR: Supernova Remnant	EN: (diffuse) Emission Nebula	Transparency: 1 = Best 5 = Poor	** p = Photographic Magnitude
GC: Globular Cluster	G-: Galaxy, with Hubble type given	Time: DD:MM:YYYY	*** !! = Showpiece Object
OC: Open Cluster	E/RN: Diffuse emission and reflection Nebula	Date: Specify Time Zone or UT	http://www.rasc.ca

RASC Messier Objects - M22

Messier Object	**M22**		
NGC	**6656**		
Constellation	**Sagittarius**		
Type	**Globular Cluster**		
Magnitude	**5.1**		
Distance (Kilo light-years)	**10.4**		
RA	**18 36.4**		
Dec	**-23:54**		
Size	**24.0'**		
UM I	UM II	**340**	**145**
SA	**22**		
Remarks	**spectacular from southern lattitude**		
Time (hh:mm)			
Seeing	1 2 3 4 5		
Transparency	1 2 3 4 5		
Observing Location			
Telescope			
Date (dd:mm:yyyy)			

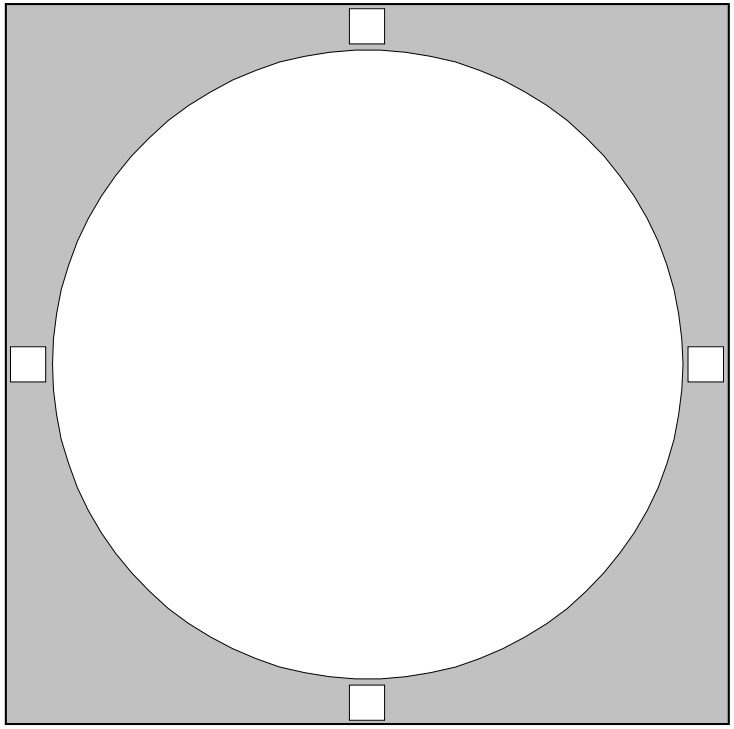


Notes

PN: Planetary Nebula	RN: (diffuse) Reflection Nebula	Seeing: 1 = Best 5 = Poor	* = Number of stars in cluster
SNR: Supernova Remnant	EN: (diffuse) Emission Nebula	Transparency: 1 = Best 5 = Poor	** p = Photographic Magnitude
GC: Globular Cluster	G-: Galaxy, with Hubble type given	Time: DD:MM:YYYY	*** !! = Showpiece Object
OC: Open Cluster	E/RN: Diffuse emission and reflection Nebula	Date: Specify Time Zone or UT	http://www.rasc.ca

RASC Messier Objects - M69

Messier Object	**M69**		
NGC	**6637**		
Constellation	**Sagittarius**		
Type	**Globular Cluster**		
Magnitude	**7.6**		
Distance (Kilo light-years)	**28.0**		
RA	**18 31.4**		
Dec	**-32:21**		
Size	**7.1'**		
UM I	UM II	**378**	**163**
SA	**22**		
Remarks	**small. poor globular cluster**		
Time (hh:mm)			
Seeing	1 2 3 4 5		
Transparency	1 2 3 4 5		
Observing Location			
Telescope			
Date (dd:mm:yyyy)			

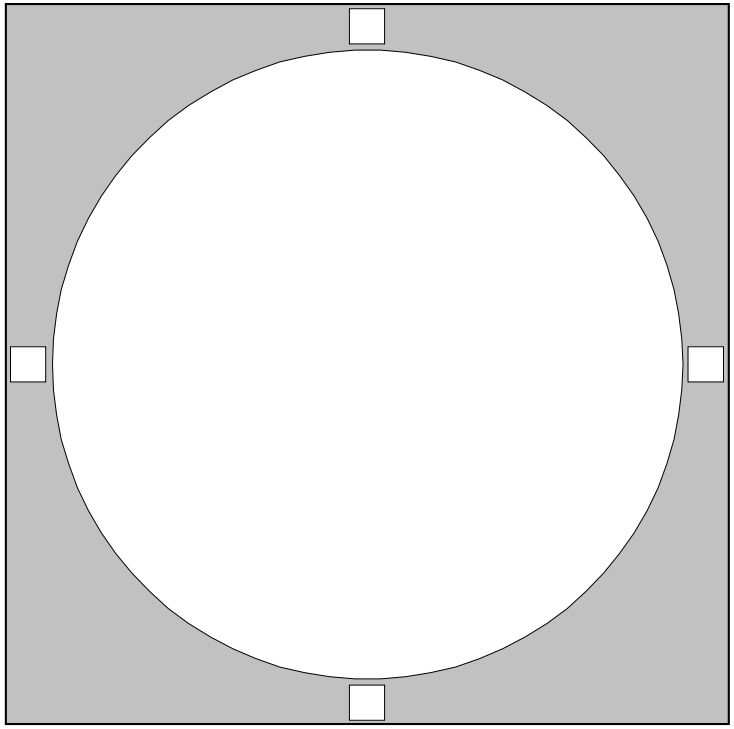


Notes

PN: Planetary Nebula	RN: (diffuse) Reflection Nebula	Seeing: 1 = Best 5 = Poor	* = Number of stars in cluster
SNR: Supernova Remnant	EN: (diffuse) Emission Nebula	Transparency: 1 = Best 5 = Poor	** p = Photographic Magnitude
GC: Globular Cluster	G-: Galaxy, with Hubble type given	Time: DD:MM:YYYY	*** !! = Showpiece Object
OC: Open Cluster	E/RN: Diffuse emission and reflection Nebula	Date: Specify Time Zone or UT	http://www.rasc.ca

RASC Messier Objects - M70

Messier Object	**M70**		
NGC	**6681**		
Constellation	**Sagittarius**		
Type	**Globular Cluster**		
Magnitude	**8.0'**		
Distance (Kilo light-years)	**29.4**		
RA	**18 43.2**		
Dec	**-32:18**		
Size	**7.8'**		
UM I	UM II	**378**	**163**
SA	**22**		
Remarks	**small globular two degrees east of M69**		
Time (hh:mm)			
Seeing	1 2 3 4 5		
Transparency	1 2 3 4 5		
Observing Location			
Telescope			
Date (dd:mm:yyyy)			

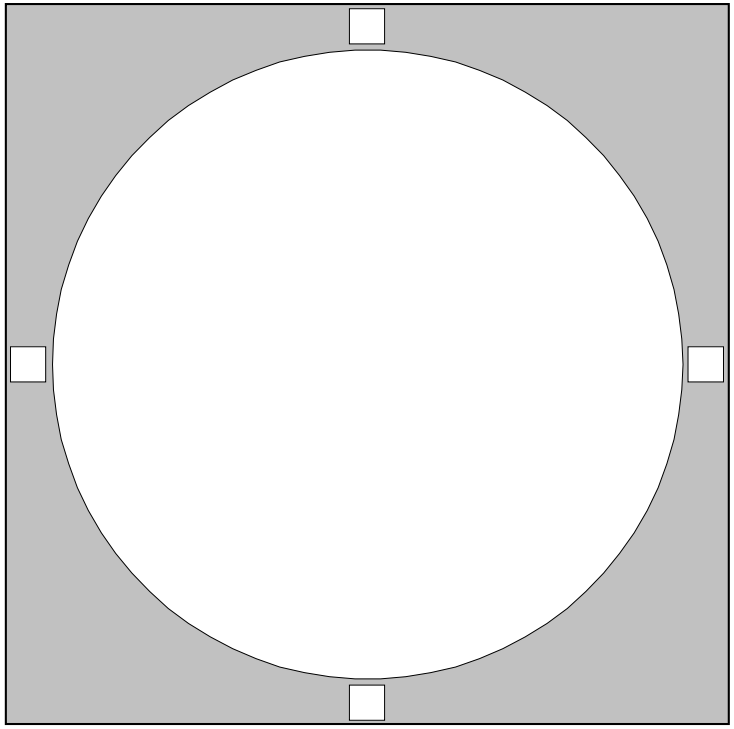


Notes

PN: Planetary Nebula	RN: (diffuse) Reflection Nebula	Seeing: 1 = Best 5 = Poor	* = Number of stars in cluster
SNR: Supernova Remnant	EN: (diffuse) Emission Nebula	Transparency: 1 = Best 5 = Poor	** p = Photographic Magnitude
GC: Globular Cluster	G-: Galaxy, with Hubble type given	Time: DD:MM:YYYY	*** !! = Showpiece Object
OC: Open Cluster	E/RN: Diffuse emission and reflection Nebula	Date: Specify Time Zone or UT	http://www.rasc.ca

RASC Messier Objects - M54

Messier Object	**M54**		
NGC	**6715**		
Constellation	**Sagittarius**		
Type	**Globular Cluster**		
Magnitude	**7.6**		
Distance (Kilo light-years)	**88.7**		
RA	**18 55.1**		
Dec	**-30:29**		
Size	**9.1'**		
UM I	UM II	**378**	**163**
SA	**22**		
Remarks	**not easily resolved**		
Time (hh:mm)			
Seeing	1 2 3 4 5		
Transparency	1 2 3 4 5		
Observing Location			
Telescope			
Date (dd:mm:yyyy)			



Notes

PN: Planetary Nebula	RN: (diffuse) Reflection Nebula	Seeing: 1 = Best 5 = Poor	* = Number of stars in cluster
SNR: Supernova Remnant	EN: (diffuse) Emission Nebula	Transparency: 1 = Best 5 = Poor	** p = Photographic Magnitude
GC: Globular Cluster	G-: Galaxy, with Hubble type given	Time: DD:MM:YYYY	*** !! = Showpiece Object
OC: Open Cluster	E/RN: Diffuse emission and reflection Nebula	Date: Specify Time Zone or UT	http://www.rasc.ca