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

Messier Minutes

a guide to completing RASC's Messier Observing Certificate



Part 11 -

June 7th - July 4th, 2022

The following pages include a list of objects discussed in the June 7th, 2022, episode of Messier Minutes. Including finder charts and log pages.

List of Targets Discussed:

June 7 is the 1st Quarter Moon; twilight ends after 11 pm; westerly summer Messiers

Messier #	Constellation	Magnitude	Type	NGC	Name
9	Oph	7.7	GC	6333	Melotte 167
10	Oph	6.4	GC	6254	Melotte 157
12	Oph	7.7	GC	6218	Gumball Globular Cluster
14	Oph	7.6	GC	6402	Melotte 175
107	Oph	7.9	GC	6171	The Crucifix Cluster
4	Sco	5.9	GC	6121	Crab/Spider Globular Cluster
80	Sco	7.9	GC	6093	Melotte 142
19	Oph	7.5	GC	6273	Melotte 160
62	Oph	6.4	GC	6266	Flickering Globular Cluster

Notes:

M9:

(12 arc-minutes)

Too small and faint to be seen in binoculars, but any size of telescope will work. Quite low in the sky and has been extincted by dust due to its proximity to the galactic plane. 25,800 ly away. Located 3.5 degrees SE of Sabik, on the line connecting Xi Serpens and Antares. Look for squashed asymmetry and the density gradient. Nearby GC's NGC 6356 and NGC 6342 are telescope-close. Highest after midnight.

M10:

(20 arc-minutes)

Medium-sized, but bright and dense, so it's visible with unaided eyes, good binoculars and any size of telescope. Dim outskirts are revealed in larger apertures. 14,400 ly away. Just east of the centre line of Oph between Saik and Rasalhague, closer to the former. Or, make a right angle from Yed Posterior and Saik. Look for asymmetry and patterns in its brighter stars.

M12:

(16 arc-minutes)

Medium bright and size, allowing binoculars and any size of telescope to see it. Binoculars-close to west of M10. Large aperture resolves the core and halo well. Located inside Oph, just above the midway point between Kappa Oph and Saik, and on line between Yed Posterior and Cebalrai. Note less concentrated, shape nearby "rocket" asterism. 15,600 ly away.

M14:

(11 arc-minutes)

Medium bright and small due to its 30,300 ly distance. Requires binoculars or any size of telescope. Plates taken by HSHogg at DAO in 1938 caught a nova in it, first one ever imaged! Located 8 degrees south of Cebalrai, and almost exactly halfway between Rasalhague and Xi Serpens. Note density profile and shape. Check out GC NGC 6366 3 degrees to SW beside 47 Oph.

M107:

(13 arc-minutes)

Less bright and small, making it barely visible in binoculars while highest (after midnight). Located above Antares, in a starry field west of the MW. Only 2.8 degrees south of Saik, towards Fang (southern claw star). Surrounding foreground stars make the crucifix (right way up when inverted). 20,900 ly away. Last Messier Object to be discovered, in May, 1783! Added by HSHogg in 1947. Note its density profile, field stars.

M4:

(26 arc-minutes)

Huge and bright, but less dense. Very easy to find just 1.3 degrees to the right (west) of Antares! Visible with unaided eyes (when highest at midnight) and binoculars and telescopes. Look for an internal bar structure, shape of the core, chains of stars. Among the closest GCs, only 7,200 ly away.

M80:

(10 arc-minutes)

Small and medium bright, so any size telescope is required. Very dense! 32,600 ly away. Located halfway between Antares and Acrab (northern claw star). Look for the density gradient and the nearby Rho Oph complex 2 degrees to the left.

M19:

(17 arc-minutes)

Large, but faint due to low density and extinction in the galactic plane. Visible in binoculars when highest ~1 am) and any telescope. Larger scopes will reveal nice details. 28,700 ly away. To find M19, form a triangle to the upper left of the bright stars Antares and Larawag (Epsilon Sco), or double the length of the line from Fang (Scorpius' lowest claw) star through Antares. Look for its out-of-round shape, density profile, and starry background. GC's NGC 6293 and NGC 6284 sit 1.5 degrees to the east and north.

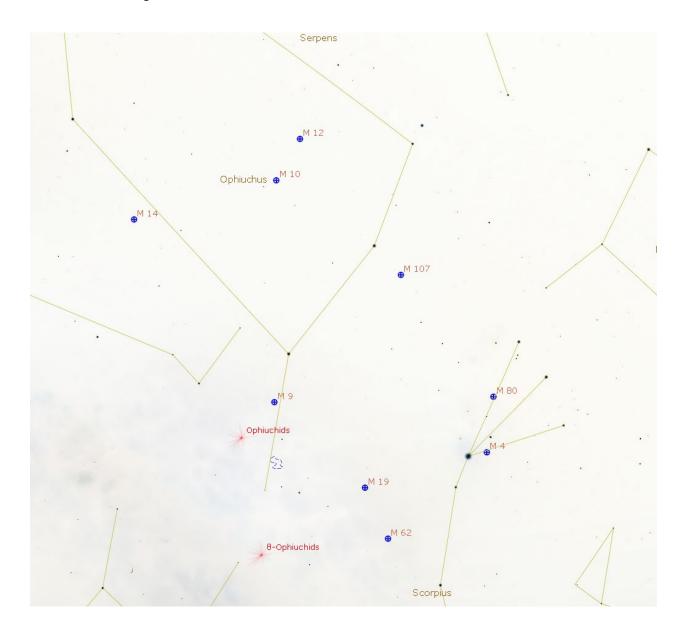
M62:

(15 arc-minutes)

Medium-bright, medium-aized, and dense. 22,300 ly away, but sits nearest GC to the galactic core, so it has been dimmed. Visible in binoculars, especially when highest after midnight. Contains the first GC black hole! Telescopes reveal structure and irregular shape. Located by doubling the line from Dschubba through Antares. Watch for blinking effect, out-of-round shape, offset core (comet-like?), density profile.

Target Finder Charts:

Overview of Targets -



M9 Closer Look -



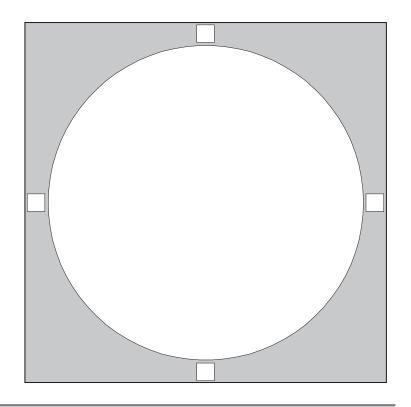
M10, M12, M14, & M107 Closer View -



M4, M80, M19, & M62 Closer View:



N	Messier Object	M	9					
	NGC	63	33					
	Constellation	Oı	hi	ucl	nus	5		
	Туре	Gl	obi	ula	r (Clus	ter	
	Magnitude	7.6	<u> </u>					
Distance (K	(ilo light-years)	26	.7					
	RA	17	19	.2				
	Dec	-18	3:3	1				
	Size	9.3	3'					
UM I	UM II	33	7,3	38				146
	SA	15	, 22	2				
	Remarks	sm	all	est	of	Op	hiuc	thus globulars
	Time (hh:mm)							
	Seeing			3		5		
	Transparency			3	4	5		
Observing Location								
	Telescope							
Date	e (dd:mm:yyyy)							



Notes				

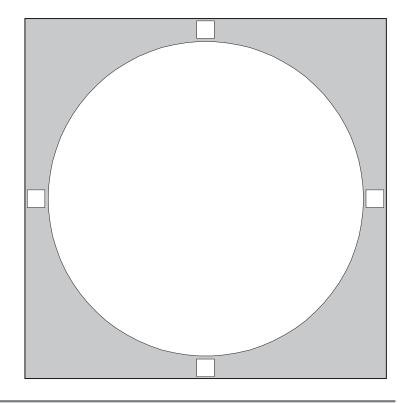
PN: Planetary Nebula	
SNR: Supernova Remnant	
GC: Globular Cluster	
OC: Open Cluster	

RN: (diffuse) Reflection Nebula EN: (diffuse) Emission Nebula G-: Galaxy, with Hubble type given E/RN: Diffuse emission and reflection Nebula Seeing: 1 = Best 5 = PoorTransparency: 1 = Best 5 = Poor Time: DD:MM:YYYY

Date: Specify Time Zone or UT

* = Number of stars in cluster ** p = Photographic Magnitude *** !! = Showpiece Object

N	Messier Object	M	10					
	NGC	62:	54					
	Constellation	Or	hi	ucl	nus	5		
	Type	Gl	obi	ula	r (lus	ster	
	Magnitude	6.6)					
Distance (K	(ilo light-years)	14.	4					
	RA	16	57	.1				
	Dec	-04	l:0	6				
	Size	15.	1'					
UM I	UM II	24'	7					107
	SA	15						
	Remarks	ric	h g	glo	bul	ar	clust	er; M12 is three
		de	gre	es	no	rth	west	,
	Time (hh:mm)							
	Seeing			3		5		
	Transparency			3	4	5		
Observing Location								
	Telescope							
Date	e (dd:mm:yyyy)							



Notes			

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SNR: Supernova Remnant	E
GC: Globular Cluster	G
OC: Open Cluster	E

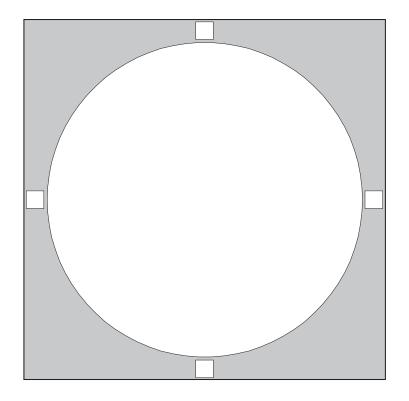
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. 01:	B # 1	10						
NGC	62	18						
Constellation	Op	hi	ucł	ıus	5			
Type	Gl	obı	ula	r (Clus	ter		
Magnitude	6.8	3						
o light-years)	16.	.0						
RA	16	47	.2					
Dec	-01	l:5'	7					
Size	14.	.5'						
UM II	240	6,2	47				107	
SA	15							
Remarks	loo	se	glo	bu	llar	clus	ter near M10	
ime (hh:mm)								
Seeing	1	2	3	4	5			
Transparency			3	4	5			
Observing Location								
Telescope								
(dd:mm:yyyy)								
	Type Magnitude o light-years) RA Dec Size UM II SA Remarks ime (hh:mm) Seeing Transparency ing Location Telescope	NGC 62 Constellation Op Type Gl Magnitude 6.8 o light-years) 16. RA 16 Dec -01 Size 14. UM II 24. SA 15 Remarks location Telescope	NGC 6218 Constellation Ophic Type Globe Magnitude 6.8 o light-years) 16.0 RA 16 47 Dec -01:5' Size 14.5' UM II 246,2 SA 15 Remarks loose ime (hh:mm) Seeing 1 2 Gransparency 1 2 ing Location Telescope	NGC 6218 Constellation Ophiucl Type Globula Magnitude 6.8 o light-years) 16.0 RA 16 47.2 Dec -01:57 Size 14.5' UM II 246,247 SA 15 Remarks loose globula ime (hh:mm) Seeing 1 2 3 Gransparency 1 2 3 ing Location Telescope	NGC 6218 Constellation Ophiuchus Type Globular Constellation Ophiuchus Type Globular Constellation Ophiuchus Globular Constellation	NGC 6218 Constellation Ophiuchus Type Globular Clus Magnitude 6.8 o light-years) 16.0 RA 16 47.2 Dec -01:57 Size 14.5' UM II 246,247 SA 15 Remarks loose globular ime (hh:mm) Seeing 1 2 3 4 5 Gransparency 1 2 3 4 5 ing Location Telescope	NGC 6218 Constellation Ophiuchus Type Globular Cluster Magnitude 6.8 o light-years) 16.0 RA 16 47.2 Dec -01:57 Size 14.5' UM II 246,247 SA 15 Remarks loose globular clus ime (hh:mm) Seeing 1 2 3 4 5 Gransparency 1 2 3 4 5 ing Location Telescope	NGC 6218 Constellation Ophiuchus Type Globular Cluster Magnitude 6.8 o light-years) 16.0 RA 16 47.2 Dec -01:57 Size 14.5' UM II 246,247 107 SA 15 Remarks loose globular cluster near M10 ime (hh:mm) Seeing 1 2 3 4 5 Gransparency 1 2 3 4 5 ing Location Telescope



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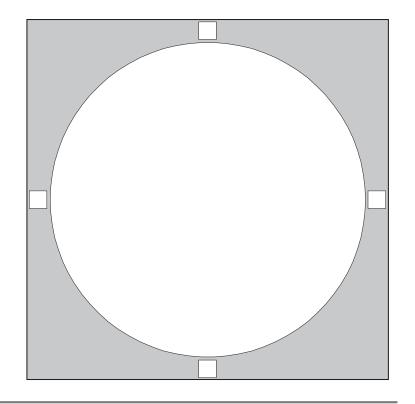
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<i>r</i>	3.7	4.4					
lessier Object	M	14					
NGC	64	02					
Constellation	$\mathbf{O}_{\mathbf{I}}$	phi	ucl	hus	5		
Type	Gl	lob	ula	r (Cluste	er	
Magnitude	7.0	6					
ilo light-years)	29	.0					
RA	17	37	.6				
Dec	-0.	3:1	5				
Size	11	.7'					
UM II	24	8					106
SA	15						
Remarks	20	0-r	nm	te	lesco	pe n	eeded to resolve
Time (hh:mm)							
Seeing	1	2	3	4	5		
Transparency			3	4	5		
Observing Location							
Telescope							
c (dd:mm:yyyy)							
	Constellation Type Magnitude illo light-years) RA Dec Size UM II SA Remarks Time (hh:mm) Seeing Transparency ving Location Telescope	NGC 64 Constellation Op Type Gl Magnitude 7.4 Global part of the constellation Op Type Global part of the constellation Op Rad 17 Dec -0: Size 11 UM II 24 SA 15 Remarks 20 Time (hh:mm) Seeing 1 Transparency 1 ving Location Telescope	NGC 6402 Constellation Ophi Type Glob Magnitude 7.6 illo light-years) 29.0 RA 17 37 Dec -03:1 Size 11.7' UM II 248 SA 15 Remarks 200-remarks Time (hh:mm) Seeing 1 2 Transparency 1 2 rving Location Telescope	NGC 6402 Constellation Ophiucl Type Globula Magnitude 7.6 ilo light-years 29.0 RA 17 37.6 Dec -03:15 Size 11.7' UM II 248 SA 15 Remarks 200-mm Time (hh:mm) Seeing 1 2 3 Transparency 1 2 3 ving Location Telescope	NGC 6402 Constellation Ophiuchus Type Globular (Constellation Type Magnitude 7.6 Magnitude 7.6 Ito light-years 29.0 RA 17 37.6 Dec -03:15 Size 11.7' UM II 248 SA 15 Remarks 200-mm tellation Time (hh:mm) Seeing 1 2 3 4 Transparency 1 2 3 4 Tying Location Telescope	NGC 6402 Constellation Ophiuchus Type Globular Cluster Magnitude 7.6 ido light-years 29.0 RA 17 37.6 Dec -03:15 Size 11.7' UM II 248 SA 15 Remarks 200-mm telesco Time (hh:mm) Seeing Transparency 1 2 3 4 5 ving Location Telescope	NGC 6402 Constellation Ophiuchus Type Globular Cluster Magnitude 7.6 Ito light-years 29.0 RA 17 37.6 Dec -03:15 Size 11.7' UM II 248 SA 15 Remarks 200-mm telescope Time (hh:mm) Seeing 1 2 3 4 5 Transparency 1 2 3 4 5 Tving Location Telescope



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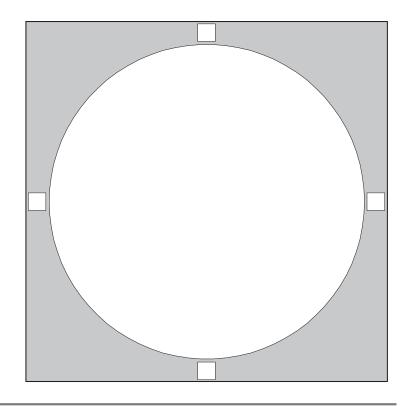
RN: (diffuse) Reflection Nebula
EN: (diffuse) Emission Nebula
G-: Galaxy, with Hubble type given
E/RN: Diffuse emission and reflection Nebula

Seeing: 1 = Best 5 = Poor Transparency: 1 = Best 5 = Poor Time: DD:MM:YYYY

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N	Messier Object	M	107	7					
	NGC	61	71						
	Constellation	Oı	hi	ucl	ıus	5			
	Type	Gl	obi	ula	r (Clus	ter		
	Magnitude	8.1	l						
Distance (K	(ilo light-years)	20	.9						
	RA	16	32	.5					
	Dec	-13	3:0	3					
	Size	10	.0'						
UM I	UM II	29	1					127	
	SA	15							
	Remarks	sm	ıall	. fa	iint	t glo	obul	ar	
	Time (hh:mm)	1							
	Seeing				4	5			
	Transparency			3	4	5			
Obsei	Observing Location								
	Telescope								
Date	e (dd:mm:yyyy)								



Notes				

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SNR: Supernova Remnant	EN: (d
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OC: Open Cluster	E/RN:

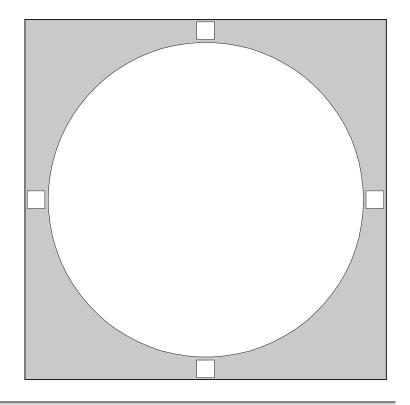
diffuse) Reflection Nebula diffuse) Emission Nebula alaxy, with Hubble type given E/RN: Diffuse emission and reflection Nebula Seeing: 1 = Best 5 = PoorTransparency: 1 = Best 5 = Poor Time: DD:MM:YYYY

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*** !! = Showpiece Object

/ O1	N /	4						
NGC	61	<u>21</u>						
Constellation	Sc	orp	oiu	S				
Type	Gl	ob	ula	r (Clus	ter		
Magnitude	5.8	3						
ilo light-years)	7.2	2						
RA	16	23	.6					
Dec	-20	6:3	2					
Size	26	.3'						
UM II	33	6					147	
SA	4,	15						
Remarks	br	igh	t g	lob	ula	r ne	ar Antares	<u> </u>
Time (hh:mm)								
Seeing				4	5			
Transparency				4	5			
Observing Location								
Telescope								
e (dd:mm:yyyy)								
	Type Magnitude filo light-years) RA Dec Size UM II SA Remarks Time (hh:mm) Seeing Transparency ving Location Telescope	NGC 61 Constellation Sc Type Gl Magnitude 5.8 RA 16 Dec -20 Size 26 UM II 33 SA 4, Remarks br Time (hh:mm) Seeing 1 Transparency 1 ving Location Telescope	NGC 6121 Constellation Scorp Type Globe Magnitude 5.8 Glo light-years) 7.2 RA 16 23 Dec -26:3 Size 26.3' UM II 336 SA 4, 15 Remarks brigh Time (hh:mm) Seeing 1 2 Transparency 1 2 ving Location Telescope	NGC 6121 Constellation Scorpiu Type Globula Magnitude 5.8 Illo light-years) 7.2 RA 16 23.6 Dec -26:32 Size 26.3' UM II 336 SA 4, 15 Remarks bright g Time (hh:mm) Seeing 1 2 3 Transparency 1 2 3 Transparency 1 2 3 Trinsparency 1 2 3 Trinsparency 1 2 3	NGC 6121 Constellation Scorpius Type Globular Constellation Scorpius Type Globular Constellation State	NGC Constellation Scorpius	NGC Constellation Scorpius	NGC 6121 Constellation Scorpius Type Globular Cluster Magnitude 5.8 illo light-years) 7.2 RA 16 23.6 Dec -26:32 Size 26.3' UM II 336 147 SA 4, 15 Remarks bright globular near Antares Time (hh:mm) Seeing 1 2 3 4 5 Transparency 1 2 3 4 5 rving Location Telescope



Notes			

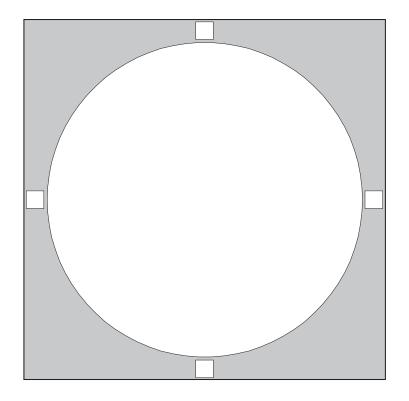
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N	Messier Object	M	80						
	NGC	60	93						
	Constellation	Sc	orp	oiu	S				
	Type	Gl	obi	ula	r (Clus	ter		
	Magnitude	7.3	3						
Distance (K	(ilo light-years)								
	RA	16	17	.0					
	Dec	-22	2:5	9					
	Size	8.9							
UM I	UM II	33	5,3	<u>36</u>				147	
	SA	22							
	Remarks	ve	ry (cor	np	ress	ed g	lobular	
	Time (hh:mm)								
	Seeing		2			5			
	Transparency				4	5			
Obser	Observing Location								
	Telescope								
Date	e (dd:mm:yyyy)								



Notes			

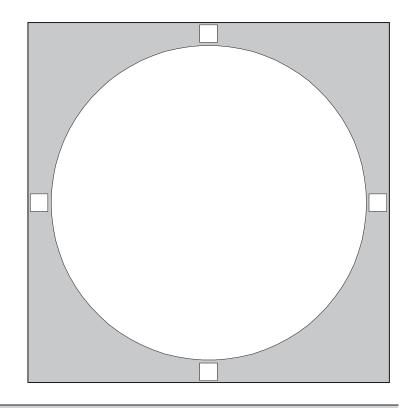
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N	Messier Object	M	10					
I'	3							
	NGC	62						
	Constellation	O	hi	ucl	nus	5		
	Type	Gl	ob	ula	r (Clus	ter	
	Magnitude	6.7	7					
Distance (K	(ilo light-years)	28	.4					
	RA	17	02	.6				
	Dec	-20	5:1	6				
	Size	13	.5'					
UM I	UM II	33	7					146
	SA	22						
	Remarks	ob	lat	e g	lob	ula	r; M	62 four degrees
		SOI	uth	1				
	Time (hh:mm)							
	Seeing	1	2	3	4	5		
	Transparency				4	5		
Obser	Observing Location							
	Telescope							
Date	e (dd:mm:yyyy)							



Notes			
	 _	 _	
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PN: Planetary Nebula	RN: (diffuse
SNR: Supernova Remnant	EN: (diffuse
GC: Globular Cluster	G-: Galaxy,
OC: Open Cluster	E/RN: Diffu

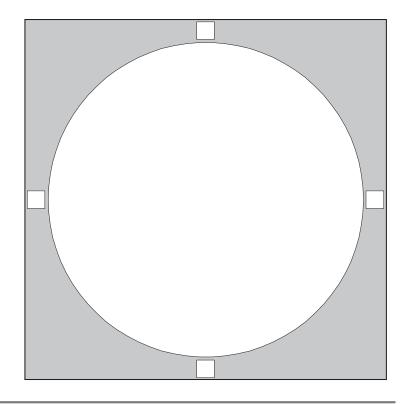
se) Reflection Nebula se) Emission Nebula , with Hubble type given fuse emission and reflection Nebula Seeing: 1 = Best 5 = Poor Transparency: 1 = Best 5 = Poor Time: DD:MM:YYYY

Date: Specify Time Zone or UT

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** p = Photographic Magnitude *** !! = Showpiece Object http://www.rasc.ca

N	Messier Object	M	62						
	NGC								
	Constellation			ucl	nus	5			
	Туре			Globular Cluster					
	Magnitude			6.7					
Distance (K	Distance (Kilo light-years)			22.5					
	RA		17 01.2						
	Dec			7					
	Size			14.1'					
UM I	UM II	37	5,3	76				164	
	SA								
	Remarks		asymmetrical; in rich field						
	Time (hh:mm)								
	Seeing			3		5			
	Transparency			3	4	5			
Obser	Observing Location								
	Telescope								
Date (dd:mm:yyyy)									



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