**TSS Messier 110 Award Submission**

**Date:** 02/11/2011

**Equipment:** Z10 Dob

Baader Hyperion 21, 13, 8.8, 5mm & Televue 32mm Plossl

**Sky Quality:** Bortle 5 (Fredericksburg, Va)

**1) Messier 63 (NGC 5055) in Canes Venatici:** Fairly bright and oval, with a bright stellar core. Inceasing magnification extended the halo, but revealed no further details.

**2) Messier 97 (NGC 3587) in Ursa Major:** Easily swept up as a round, faint orb. Very responsive to the UHC filter and with increased magnification the “eyes” appeared fleetingly.

**3) Messier 108 (NGC 3556) in Ursa Major:** An elongated streak of light, with some subtle brightening towards the center, but no other details revealed.   
  
**4) Messier 109 (NGC 3992) in Ursa Major:** The glare of Phad always presents a problem with this one, and keeping the star out of the FOV, this low surface brightness galaxy was revealed as a faint and narrow elongated shape. It had a ghostly appearance with no real details.

**5) Messier 40 (Winnecke 4) in Ursa Major:** Not much to say, an easily split double star. It takes longer than some objects to find though.

**Date:** 03/01/2011

**Equipment:**  Z10 Dob

Baader Hyperion 21, 13, 8.8, 5mm & Televue 32mm Plossl

**Sky Quality:** Bortle 5 (Fredericksburg, Va)

**6) Messier 100 (NGC 4321) in Coma Berenices:** Presented a faint oval glow, with a bright core that appeared stellar in nature.

**7) Messier 98 (NGC 4192) in Coma Berenices:**  Finding the star 6 Com made this and M99 easy. M98 was a faint sliver of light, with very subtle brightening to the center.

**8) Messier 99 (NGC 4254) in Coma Berenices:** Near to M98 and the star 6 Com, this was a faint oval, but with a noticeably brighter core region.

**Date:** 04/03/2011

**Equipment:** Z10 Dob

Baader Hyperion 21, 13, 8.8, 5mm & Televue 32mm Plossl

**Sky Quality:** Bortle 5 (Fredericksburg, Va)

**9) Messier 61 (NGC 4303) in Virgo:** A soft round glow with a bright core area.

**10) Messier 104 (NGC 4594) in Virgo:** Easy to find using the “pointer” asterism. Nice soft oval glow with the central bulge showing two distinct brightened areas due to the central dust lane.

**11) Messier 85 (NGC 4382) in Coma Berenices:** Displayed a bright roundish glow with a noticeably bright core area.

**12) Messier 91 (NGC 4548) in Coma Berenices:** Fairly bright oval with a bright central region.

**13) Messier 88 (NGC 4501) in Coma Berenices:** A fairly bright elongated glow, with the core region showing definite brightening.

**14) Messier 84 (NGC 4374) in Virgo:** Showed as a bright, fairly large oval. The core area was pretty bright.

**15) Messier 86 (NGC 4406) in Virgo:** Nice sized roundish glow, that displayed strong brightening to the core area. Made a nice smiley face with it and M84 being the eyes, and NGC 4388 the mouth.

**16) Messier 87 (NGC 4486) in Virgo:** Fairly large, and bright. Seemed slightly out of round, with a bright core area. NGC 4478 also spotted nearby.

**17) Messier 89 (NGC 4552) in Virgo:** A pretty bright round glow, that showed off a very bright core that appeared nearly stellar in nature.

**18) Messier 90 (NGC 4569) in Virgo:** Not real bright, but definitely elongated in shape (about 2x1), with brightening to the center.

**19) Messier 60 (NGC 4649) in Virgo:** Round to slightly out of round glow. Pretty bright, with a nice bright core area.

**20) Messier 59 (NGC 4621) in Virgo:** Slightly elongated glow, showing brightening in the core area.

**21) Messier 58 (NGC 4579) in Virgo:** Mostly round in shape, with a noticeably brighter core. Halo faded away quickly.

**22) Messier 49 (NGC 4472) in Virgo:**  Slightly elongated glow with very bright core. Fleeting very dim star near the eastern side.

**Date:** 05/06/2011

**Equipment:** ST120 refractor on Vixen Porta-II

Baader Hyperion Zoom

**Sky Quality:** Bortle 4 (Southern Mexico)

**23) Messier 65 (NGC 3623) in Leo:** Elongated, about 3x1, with some brightening to the core.

**24) Messier 66 (NGC 3627) in Leo:** Brighter than M65, less elongated (about 2x1). Has a brighter core are as well. The third member of the Triplet (NGC 3628) was also seen.

**25) Messier 95 (NGC 3351) in Leo:** Slightly out of round glow, with a brighter central region.

**26) Messier 96 (NGC 3368) in Leo.** Brighter than M95, similarly out of round, with a brighter core area.

**27) Messier 105 (NGC 3379) in Leo:** Seemed a little brighter than M95/96, pretty much rounded in shape with a bright core and fairly bright halo.

**Date:** 05/28/2011

**Equipment:** ST120 refractor on Vixen Porta-II

Baader Hyperion Zoom

**Sky Quality:** Bortle 4 (Southern Mexico)

**28) Messier 4 (NGC 6121) Scorpius:** Large glob, fairly loose structure. Some concentration towards core, and decent resolution.

**29) Messier 80 (NGC 6093) in Scorpius:** Small, and somewhat dim glob. Very concentrated, and showed brightening to the core area. No resolution.

**30) Messier 69 (NGC 6637) in Sagittarius:** A mag 7.7 globular that was small, but bright, with increasing luminance into the core  
  
**31) Messier 54 (NGC 6715) in Sagittarius:** A mag 7.7 globular that was small and bright; with a very bright core  
  
**32) Messier 70 (NGC 6681) in Sagittarius:** A mag 8.1 globular that was small with a very bright, stellar appearing core  
  
33) M28 in Sagittarius. A mag 6.9 globular west of M22 that presented itself as a small, but bright fuzzball

**Date:** 08/25-26/2011

**Equipment:** Z10 Dob

Baader Hyperion 21, 13, 8.8, 5mm & Televue 32mm Plossl

**Sky Quality:** Bortle 2 to 3 transitional (Highland County, Va)

**34) Messier 22 (NGC 6656) in Sagittarius:** This is my very favorite globular, and once again it provided a big wow! Not only was it a very evident naked eye object, it was deeply resolved in the Z10, filling the FOV with stars.  
  
**35, 36) Messier 6 (NGC 6405), Messier 7 (NGC 6475) in Scorpius:** These two open clusters have always been near the top of my list since childhood. They were clearly seen with the naked eye and were both beautiful scatterings of diamonds against the dark backdrop. M7 was larger and more scattered with a tight central region while M6 was small and much more compact.  
  
**37) Messier 57 (NGC 6720) in Lyra:** A beautiful white doughnut, with the center hole filled with diaphanous nebulosity.   
  
**38) Messier 27 (NGC 6853) in Vulpecula:** It was so starkly whitish-gray against the dark sky that at times it didn't even seem real, appearing more like an aberration in the EP. The internal hourglass shape was somewhat discernible, but it was overpowered by the bright nebulosity within the sphere.  
  
**39) Messier 11 (NGC 6705) in Scutum:** The wild duck was a stunning splash of stars, and a truly impressive sight. Extremely rich for an open cluster.  
  
**40) Messier 15 (NGC 7078) in Pegasus:** This globular in Pegasus was just barely discernible with the naked eye. In the scope it was large, bright with it's edges resolving.  
  
**41, 42, 43) Messier 31 (NGC 224), Messier 32 (NGC 221), Messier 110 (NGC 205) in Andromeda:** The Andromeda galaxy was an absolute joy to observe from this location. This is the first time I can say I have truly seen its dark lanes in such glorious detail. It was very prominent and stretched far beyond the FOV of my 32mm plossl. M32 was a small but very bright glowing ball of light reminiscent of a globular just at the outer reaches of M31. M110 was a bright, elongated oval of light more clearly separated from M31 on the opposite side. Quite the nice triple play indeed.

**44) Messier 101 (NGC 5457) in Ursa Major:** This low surface brightness galaxy was very easy to locate, showing a nice rounded halo. Its center appeared slightly brighter and broadly extended. The outer arms appeared ghostly.   
  
**45) Messier 51 (NGC 5194) in Canes Venatici:** This bright galaxy displayed a nice rounded halo, with companion NGC 5195 very bright. At times I felt I could see the connecting bridge between them. Some minor spiral detail was evident despite being poorly placed at the time.  
  
**46) Messier 33 (NGC 598) in Triangulum:** Not seen at a very high elevation, but easy to locate. Fleeting with naked eye, and a prominent roundish glow, brighter to the core area. Some small knots (HII regions) were fleetingly visible, but no other significant details were noted.

**47) Messier 71 (NGC 6838) in Sagitta:** Located in a very rich star field. However, in dark skies it resolved fairly deep. Smallish in size and pretty loosely structured.

**Date:** 09/26/2011

**Equipment:** ST120 refractor on Vixen Porta-II

Baader Hyperion Zoom

**Sky Quality:** Bortle 4 (Southern Mexico)

**48) Messier 8 (NGC 6523) in Sagittarius:** Visible naked eye. Nice and bright, but with the O-III it came alive! The nebulosity was very extended and the dark lanes highly pronounced and the view was incredible at about 30x (20mm setting).

**49) Messier 20 (NGC 6514) in Sagittarius:** Likewise visible to naked eye, and in the ST120 was very prominent. The dark lanes were showing nicely, especially with the O-III in place and boosting contrast for the emission portions. Using 30x, it and M8 put on quite a show.  
  
**50) Messier 23 (NGC 6494) in Sagittarius:** Very attractive open cluster with about 20 to 30 stars overlaying a gauzy background of unresolved stars. Quite nice and pleasing to the eye.

**Date:** 10/21/2011

**Equipment:** ST120 refractor on Vixen Porta-II

Baader Hyperion Zoom

**Sky Quality:** Bortle 4 (Southern Mexico)

**51) Messier 30 (NGC 7099) in Capricornus:** Easily found, it was fairly large with a bright core surrounded by an extended halo. Being at a location farther south, it was higher in elevation and much brighter and larger than at home. No significant resolution was noticed.

**52) Messier 2 (NGC 7089) in Aquarius:** This glob was pretty bright, but very, very concentrated. Pushing magnification didn’t resolve any stars, though it did take on a subtle grainular appearance.

**53) Messier 72 (NGC 6981) in Aquarius:** A small, dim glob. It showed subtle brightening in the center, but not much else could be discerned.

**54) Messier 73 (NGC 6994) in Aquarius:** A less than impressive grouping of four stars. There was nothing of note here, simply an asterism.

**55) Messier 77 (NGC 1068) in Cetus:** This 9.1 magnitude Seyfert galaxy had an intensely bright core. Though small in size, the halo around the core was very apparent. A faint field star was just kissing the haze at its western end.

**56) Messier 74 (NGC 628) in Pisces:** This face-on spiral with a magnitude of 9.5 and surface brightness of 14.3 presented a soft circular glow, with subtle brightening in its center. Overall not significantly bright yet still obvious.

**57) Messier 52 (NGC 7654) in Casseopeia:** An attractive condensed haze of stars. Upping magnification could resolve about twenty suns, with the haze of more still unresolved in the background.

**58) Messier 103 (NGC 581) in Casseopeia:** An easy cluster to find, it appeared fairly bright, but small and concentrated. Noted a handful of brighter stars with fainter ones as a backdrop.

**59) Messier 76 (NGC 650/651)in Perseus:** A small, bright ball of light. The O-III filter definitely helped, and brought out the internal hourglass shape more.

**60) Messier 1 (NGC 1952) in Taurus:** In better skies than at home, it was easy in the ST120, showing as a fairly bright fluff of cotton. With the O-III, it brightened noticeably, and appeared its usual whitish/gray irregular shape.

**61) Messier 45 in Taurus:** Always fun to see how many you can spot naked eye. Binoculars are best. At low power in the ST120 filled the field, with many more members showing. No nebulosity seen.

**62, 63) Messier 42 (NGC 1976), Messier 43 (NGC 1982) in Orion:** I was rewarded with the expected view of this bright nebula complex. It was very expansive, with filaments showing lots of extension before fading into the background. The separation between the two was prominent. The O-III filter highlighted the intricacy of the nebula even more, giving it a more stark appearance against the background sky. M43 is smaller and dimmer of course, but interesting in its own right. It was obvious as a separate pocket of nebulosity separated from M42..

**64) Messier 79 (NGC 1904) in Lepus:** Fairly small in visual size, but dominated by a very bright and tight core. The outer halo was small, and no resolution was detected.

**65) Messier 35 (NGC 2168) in Gemini:** At this location was an easy naked eye object. Putting the ST120 on it, and zooming to 75x filled the FOV with diamonds. There were some very prominent dark lanes swirling through the cluster. This is one of my most favorite clusters in the sky. Nearby NGC 2158 was seen as a small knotty collection of starlight off M35’s southwest side.

**Date:** 05/18-19/2012

**Equipment:** AR127 refractor on Twilight-II

ES 82° 18, 14, 11 & 8.8mm

**Sky Quality:** Bortle 4 (Southern Mexico)

**66) Messier 10 (NGC 6254) in Ophiuchus:** A very bright, somewhat large and round globular that was not quite as tightly packed. Using 94x I was able to resolve some stars across its face.

**67) Messier 12 (NGC 6218) in Ophiuchus:** It was a fairly large, very bright globe of stars, with a few 9 to 10 mag foreground stars in attendance. Increasing magnification resolved several stars across its face. It appeared to be slightly out of round. Visually it appeared brighter and larger than M10.

**68) Messier 107 (NGC 6171) in Ophiuchus:** A subtle round glow, boxed in by an unequal rectangle of four stars of about 10 to 12th magnitude. Responded well to averted vision. No resolution was noted.   
  
**69) Messier 9 (NGC 6333) in Ophiuchus:** This globular was small and round, with a noticeably bright core. Increasing magnification brightened it, but did not resolve any stars.

**70) Messier 14 (NGC 6402) in Ophiuchus:** A bright, fairly large, round glob that was evenly illuminated across its dimensions. Increasing magnification did not resolve any stars.

**71) Messier 19 (NGC 6273) in Ophiuchus:** Fairly large with brightening into the core. Increasing magnification hinted at some resolution of stars across its face.

**Date:** 06/09/2012

**Equipment:** AR127 refractor on Twilight-II

ES 82° 18, 14, 11 & 8.8mm

**Sky Quality:** Bortle 4 (Southern Mexico)

**72) Messier 83 (NGC 5236) in Hydra.** This face-on galaxy, observed from a more southern vantage was quite bright and extensive. Increasing magnification hinted at spiral structure as I could trace out light and dark arcs curving from the bright core.

**73) Messier 16 (NGC 6611) in Serpens.** The Eagle Nebula was bright and beautiful, showing a great deal of structure with varying density of glowing gas.. Again, the narrow UHC added some nice detail to the object.

**74) Messier 24 (IC 4715) in Sagittarius.** This was visible to the naked eye. Thru the AR127 at low magnification the area was a mass of stars with the haze of thousands more unresolved as its backdrop.

**Date:** 11/10/2012

**Equipment:** AR127 refractor on Twilight-II

ES 82° 18, 14, 11 & 8.8mm

**Sky Quality:** Bortle 5 (Fredericksburg, Va)

**75) Messier 37 (NGC 2099) in Auriga:** This cluster presented a tight spray of about three dozen stars backed by the soft glow of many more unresolved members.

**76) Messier 36 (NGC 1960) in Auriga:** A pleasant little loose scattering of about two dozen diamonds.

**77) Messier 38 (NGC 1912) in Auriga:** This nice cluster displayed about three dozen gems sparkling in a large, loose accumulation of stars. This was counterpoised by the slight, soft glow of more companions out of visual reach.

**78, 79) Messier 81 (NGC 3031), Messier 82 (NGC 3034) in Ursa Major:** The familiar twin smudges of M81/82 were easily located. M81 presented an elongated oval glow with a bright core. The outer halo was fairly diaphanous and slowly faded into the surround star field. M82 was a bright thin slash of diffuse light. Its center was an elongated broad brightness with a smaller knot of brighter light near its center. Its outer sections faded quickly into the surrounding field.

**80) Messier 41 (NGC 2287) in Canis Major:** Easily seen in the 8x50 finder, the AR127 revealed a loose scattering of over two dozen stars. Visually it was quite pretty in the eyepiece.

**81) Messier 44 (NGC 2632) in Cancer:** At my lowest magnification it still filled the field of view with a loose accumulation of stars. Binoculars give a better presentation of this large cluster. It was just visible to the naked eye from our backyard.

**82) Messier 67 (NGC 2682) in Cancer:** Not as showy as M44, but it presented better in the AR127. A loose association of about two dozen stars, with a background glow of unresolved colleagues.

**83) Messier 47 (NGC 2422) in Puppis:** Bright and loose, more than a dozen stars were resolved at 49x. Fairly rich overall and well detached from the field.

**84) Messier 46 (NGC 2437) in Puppis:** Loose grouping of about two dozen stars, with more unresolved as a soft glow. Overall a very rich cluster visually. There is the added bonus of the foreground planetary nebula NGC 2438, that was faintly detected among the stars of the cluster’s northern section.

**85) Messier 50 (NGC 2323) in Monoceros:** Increasing magnification improves the view, bringing out more stars. Moderately condensed, with background glow of unresolved members.

**86) Messier 48 (NGC 2548) in Hydra:** This was a loose cluster showing a good amount of resolution, with a teasing of unresolved suns in the background. Not an overly impressive sight at this aperture..

**Date:** 03/04/2013

**Equipment:** Z10 Dob

ES 82° 18, 14, 11 & 8.8mm

**Sky Quality:** Bortle 5 (Fredericksburg, Va)

**87) Messier 64 (NGC 4826) in Coma Berenices:** Oval patch of light with a bright central region. The “blackeye” was small but readily apparent.

**88) Messier 106 (NGC 4258) in Canes Venatici:** Presented as a fairly bright and large elongated patch of light. Central region showed some brightening, and the core was stellar at 89x.

**89) Messier 94 (NGC 4736) in Canes Venatici:** At 69x the core was stellar and bright, surrounded by nice round halo. Increasing to 142x, the core was very intense and the halo extended. I noted that it could just be detected in the 8x50 finder.

**Date:** 04/09/2013

**Equipment:** Z10 Dob

ES 82° 18, 14, 11 & 8.8mm

**Sky Quality:** Bortle 5 (Fredericksburg, Va)

**90) Messier 53 (NGC 5024) in Coma Berenices:**   Very bright, fairly large and round. A few stars resolved across its face.

**91) Messier 68 (NGC 4590) in Hydra:**  Low elevation muted its appearance, but even so was fairly bright and large. Loose structure and hinted at some resolution with averted vision.

**92) Messier 3 (NGC 5272) in Canes Venatici:**  Visible in finderscope, easy to locate. Very larger and bright with higher magnification showing good resolution across the face. Several lines and arc of stars extended out from main body.

**93) Messier 5 (NGC 5904) in Serpens:**  Bright through finderscope here and I have detected it with the naked eye from dark locations. Good resolution at edges and across face, with several strands of stars curving away from the main body like strings of diamonds.

**94) Messier 13 (NGC 6205) in Hercules:**  Superb object, easily seen in the finderscope. Have discerned it with the naked eye from darker skies. Very large and intensely bright, with many strands of stars festooning away from the main body. A lot of resolution achieved of its main halo, though the core remained fairly packed..

**95) Messier 92 (NGC 6341) in Hercules:**  Visible in the finderscope, a smaller, slightly tighter version of M13. Through the EP was small, but very bright and round. Displayed good resolution at the edges and across its face with increase of magnification. Lines and arc of suns radiating out from central region.

**96) Messier 56 (NGC 6779) in Lyra:**  A loose globular that appeared moderately large and pretty bright. Increases of magnification brought out some resolution at its edges and across its face.

**Date:** 07/29/2013

**Equipment:** Z10 Dob

ES 82° 24, 18, 14, 11 & 8.8mm

**Sky Quality:** Bortle 5 (Fredericksburg, Va)

**97) Messier 17 (NGC 6618) in Sagittarius:** Visible in finderscope. Very bright, particularly along the main body of the “swan”, and very easy to see how it got that nickname. Tried the UHC and O-III filters on it, and the O-III worked best, with the dark area around the swan’s neck more pronounced, and the overall brightness of the nebula more intense.

**98) Messier 18 (NGC 6613) in Sagittarius:** Visible in finderscope. About a dozen obvious members, with other fainter ones in the background. I saw a shape reminiscent of an arrowhead, with a line of stars that could be the arrow’s shaft. An attractive cluster at 89x.

**99) Messier 21 (NGC 6531) in Sagittarius:** Visible in finderscope. A very attractive concentration of stars. Noted around two dozen stars in an area of about 12 arc minutes, randomly scattered. Noticed a crown of stars that put me in mind of Corona Borealis. Nice at 89x.

**100) Messier 25 (IC 4725) in Sagittarius:** Visible in finderscope. Another attractive cluster. An obvious lane running through the central part, splitting the stars into two groups. Quite interesting in the eyepiece at 69x and 89x.

**101) Messier 26 (NGC 6694) in Scutum:** Visible in finderscope. Yet another nice cluster. I noted a group of four stars in the central part that reminded me of a mini-Crux. Also, I picked up some arcs of stars curving outward, that to my eye seemed to give it a shape vaguely like a starfish at 69x.

**102) Messier 29 (NGC 6913) in Cygnus:** Visible in finderscope. A loosely scattered cluster, with a very prominent square of stars in the middle. At 52x, noted 8 prominent stars with many more dimmer ones in the field.

**103) Messier 39 (NGC 7092) in Cygnus:** Visible in finderscope. A very uninspiring grouping of stars. A nice pair of stars in the middle, with a couple of arcs of stars noticed. Overall it was very scattered and not impressive.

**104) Messier 62 (NGC 6266) in Ophiuchus:** Visible in finderscope. Somewhat small orb with a very bright core. At 89x the halo became extended and the core brighter. At 114x, the overall appearance became granular, and at 142x, the granular effect became more pronounced, with a couple of stars resolved across its face.

**Date:** 07/30/2013

**Equipment:** Z10 Dob

ES 82° 24, 18, 14, 11 & 8.8mm

Sky Quality: Bortle 5 (Fredericksburg, Va)

**105) Messier 102 (NGC 5866) in Draco:** Presented a flat, elongated shape at 69x with some brightening in the core, with its extended halo fading into the background skyglow. Increasing magnification extended its length further, and increased the core’s brightness. The major axis tapers nicely done to short narrow tips. There were also a couple of faint stars nearby.

**106) Messier 75 (NGC 6864) in Sagittarius:** At 69x it showed a small, tight ball with a bright core. Viewed at 89x, the core looked fleetingly stellar surrounded by a small outer halo of light.

**107) Messier 55 (NGC 6809) in Sagittarius:** Presented a large, soft glow. Due to poor conditions this night, it was somewhat muted over previous viewings, but still easy to see. At 69x and 89x it was pretty much devoid of central concentration, appearing homogenous across its dimensions.

**Date:** 08/04/2013

**Equipment:** Z10 Dob

ES 82° 24, 18, 14, 11 & 8.8mm

**Sky Quality:** Bortle 5 (Fredericksburg, Va)

**108) Messier 34 (NGC 1039) in Perseus:** Viewed at 69x, this splash of stars showed a few close pairs and some lines of suns running through it. I noted about two dozen stars in this cluster. It was interesting, though not particularly impressive.

**Date:** 01/20/2014

**Equipment:** AR 127

ES 82° 11mm (113x), Pentax XW 10mm (125x),

Astro Tech Paradigm 12mm (104x)

**Sky Quality:** Bortle 5 (Fredericksburg, Va)

**109) Messier 78 (NGC 2068) in Orion:** Viewed as part of an eyepiece comparison, appeared as a soft oval of light, accentuated by two 10th magnitude stars involved in the nebulosity. It gave an overall appearance of two glowing eyes peering through a fog. True to its nature as a reflection nebula, the narrowband UHC filter did not enhance its appearance.

**110) Messier 93 (NGC 2447) in Monoceros:** A very attractive and rich open cluster. Easily seen in the 8x50 finderscope, through the AR 127 appeared somewhat wedge shaped, with a definite void in the central area. A pair of 8th magnitude stars just off the cluster’s southwest edge adds to the overall attractive presentation.