

Observation Sequence Number	Messier Object	Date	Time	Location	Common Name	Type of Object	Constellation	Magnitude	OTA	EP	Other	Observation Notes
1	M34	2/16/2016	21:25	Herchies, BE		Open cluster	Perseus	5.2	C8	Q70 38MM & Ultima Duo 10mm	Focal Reducer	Too small for the Q70, too large for the 10mm. Lots of bright stars, easily resolve too many stars to count.
2	M35	2/16/2016	21:29	Herchies, BE		Open cluster	Gemini	5.1	C8	Q70 38MM & Ultima Duo 10mm	Focal Reducer	Too small for the Q70, too large for the 10mm. Center very impressive at 10mm.
3	M36	2/16/2016	21:35	Herchies, BE		Open cluster	Auriga	6.0	C8	Ultima Duo 10mm	Focal Reducer	Perfect for the 10mm, cluster fills the EP. Good detail, not seeing a pinwheel though.
4	M37	2/16/2016	21:38	Herchies, BE		Open cluster	Auriga	5.6	C8	Ultima Duo 10mm	Focal Reducer	Perfect for the 10mm, cluster fills the EP. Good detail, tons of stars.
5	M38	2/16/2016	21:45	Herchies, BE		Open cluster	Auriga	6.4	C8	Ultima Duo 10mm	Focal Reducer	Perfect for the 10mm, without the FR it would have been larger. Good number of central stars, several groupings spread around.
6	M39	2/16/2016	21:52	Herchies, BE		Open cluster	Cygnus	4.6	C8	Q70 38MM & Ultima Duo 10mm	Focal Reducer	Too small for the Q70, too large for the 10mm. Lots of bright stars
7	M42	2/16/2016	21:55	Herchies, BE	The Great Orion Nebula	Diffuse nebula	Orion	4.0	C8	Q70 38MM	Focal Reducer	It's the Orion Nebula, what more to say? Nebulosity evident, 4 stars in the trapezium visible. Just lovely despite the moon.
8	M41	2/16/2016	22:02	Herchies, BE		Open cluster	Canis Major	4.5	C8	Q70 38MM	Focal Reducer	Filled up a good portion of the Q70, many central stars visible
9	M44	2/16/2016	22:05	Herchies, BE	The Beehive Cluster, Praesepe	Open cluster	Cancer	3.1	C8	Q70 38MM	Focal Reducer	Perfect match for the Q70. Many many stars visible, I could imagine it looks like a swarm of bees around a hive.
10	M45	2/16/2016	22:10	Herchies, BE	The Pleiades or The Seven Sisters	Open cluster	Taurus	1.2	C8	Q70 38MM	Focal Reducer	Central stars barely fit in the Q70. Not much nebulosity visible, too much moon glow.
11	M46	2/16/2016	22:17	Herchies, BE		Open cluster	Puppis	6.1	C8	Ultima Duo 10mm	Focal Reducer	Just right for the 10mm with FR. Very impressive cluster
12	M47	2/16/2016	22:22	Herchies, BE		Open cluster	Puppis	4.4	C8	Ultima Duo 10mm	Focal Reducer	Almost perfect in the 10mm with FR. Not as many stars in the cluster as M46 but still impressive
13	M52	2/16/2016	22:28	Herchies, BE		Open cluster	Cassiopeia	6.9	C8	Ultima Duo 10mm	Focal Reducer	Just right for the 10mm with FR. Many faint stars
14	M78	2/16/2016	22:34	Herchies, BE		diffuse reflection nebula	Orion	8.0	C8	Ultima Duo 10mm	Focal Reducer	Three central stars visible in dogleg, easily identifiable. Not much nebulosity due to the moon.
15	M67	2/24/2016	20:18	Herchies, BE		Open cluster	Cancer	6.9	SW 120	Ultima Duo 10mm		Very faint in 25mm, good definition in 10mm. Maybe 20 stars visible, 4 or 5 are bright. Much better with averted vision. Center very faint. Shaped kind of like a ball.
16	M48	2/24/2016	21:10	Herchies, BE		Open cluster	Hydra	5.8	SW 120	Ultima Duo 10mm		Well defined in 10mm. Large group of central stars, 30 or so observable. Not much of a shape stands out. Just a bunch of closely packed stars.
17	M31	3/25/2016	21:16	Herchies, BE	The Andromeda Galaxy	Spiral galaxy	Andromeda	3.4	C8	Q70 38MM		Andromeda Galaxy. Wow never seen a galaxy before. Smudge with some central definition at 38mm. It decended into the trees before I could get the 10mm on it. Maybe next time.
18	M63	3/25/2016	21:56	Herchies, BE	Sunflower galaxy	Spiral galaxy	Canes Venatici	8.6	C8	Q70 38mm		Sunflower Galaxy. Second galaxy of the night and ever. Small blob at 38mm using direct vision. At 10mm with averted vision it was a larger but dimmer blob. Not much definition, far too much moisture in the air tonight.
19	M94	4/5/2016	22:12	Herchies, BE		Spiral galaxy	Canes Venatici	8.1	C8	Ultima Duo 10mm		Spiral Galaxy. Another fuzzy logged, these first few are easier than I thought they would be. Bright central core, using averted vision I can see what look like dust rings around the core. No defined lines though.
20	M101	4/5/2016	22:54	Herchies, BE	The Pinwheel Galaxy	Spiral galaxy	Ursa Major	7.7	C8	Ultima Duo 10mm		Spiral Galaxy. Barely visible, dim central core.
21	M82	4/5/2016	23:02	Herchies, BE	The Cigar Galaxy	Irregular galaxy	Ursa Major	8.4	C8	Ultima Duo 10mm		Spiral Galaxy. Very difficult very dim central core.
22	M81	4/5/2016	23:11	Herchies, BE	Bode's Galaxy	Spiral galaxy	Ursa Major	6.8	C8	Ultima Duo 10mm		Spiral Galaxy. No structure or any detail other than a dim central core. Empty space where the body would be if it were darker out.
23	M51	4/5/2016	23:16	Herchies, BE	The Whirlpool Galaxy	Spiral galaxy	Canes Venatici	8.1	C8	Ultima Duo 10mm		Spiral Galaxy. Very distinctive two blobs. Not much detail but I can tell there is something there besides the core and the other blob at the end of one of the arms.
24	M43	4/10/2016	22:10	Herchies, BE	Part of the Orion Nebula	Diffuse nebula	Orion	9.0	C8	Ultima Duo 10mm		Nebula. Averted view and Celestron LHC filter bring out just a glimmer, but it is there. Distinctly separate from M42. I can't believe I didn't check it out when I observed M42 earlier.
25	M110	4/10/2016	22:20	Herchies, BE	Satellite galaxy of M31	Elliptical galaxy	Andromeda	8.0	C8	Ultima Duo 10mm		Elliptical Galaxy. Not much can be resolved in the core, just a dot.
26	M32	4/10/2016	22:23	Herchies, BE	Satellite galaxy of M31	Elliptical galaxy	Andromeda	8.2	C8	Ultima Duo 10mm		Elliptical Galaxy. Faint dot due to light pollution. Waving tree branches. It is there, just not real impressive. Need darker skies.

27	M50	4/10/2016	22:47	Herchies, BE		Open cluster	Monoceros	5.9	C8	Ultima Duo 10mm		Open Cluster. Beautiful cluster, tons of stars. Humidity picking up, dew heater holding its own but stars starting to sparkle. Focus is on and off with the variations.
28	M103	4/10/2016	23:00	Herchies, BE		Open cluster	Cassiopeia	7.4	C8	Ultima Duo 10mm		Open Cluster. Fairly faint lose grouping of stars, 5 or so visible.
29	M3	4/19/2016	22:23	Herchies, BE		Globular cluster	Canes Venatici	6.4	C8	ES 82/18mm		Globular Cluster. Nice cluster. First light for the ES 82/18mm. Impressed with the sharpness of the new EP. Cluster not well defined in 18mm but it is there.
30	M76	4/19/2016	22:35	Herchies, BE	The Little Dumbell, Cork, or Butterfly	Planetary nebula	Perseus	11.5	C8	ES 82/18mm		Planetary Nebula. Visible with averted vision. Central bright spot, not much else visible. Moon too bright.
31	M13	4/19/2016	23:24	Herchies, BE	Great Hercules Globular Cluster	Globular cluster	Hercules	5.9	C8	ES 82/18mm		Globular Cluster. Amazing! Far to many stars to count. Good definition in the central core area, averted gaze brings out so many more stars.
32	M92	4/19/2016	23:28	Herchies, BE		Globular cluster	Hercules	6.5	C8	ES 82/18mm		Globular Cluster. Very similar to M13. Lots of central stars, even more with averted gaze. Just a small ball of stars.
33	M10	7/17/2016	12:25	Herchies, BE		Globular cluster	Ophiuchus	6.6	C8	Ultima Duo 10mm		Globular cluster. Very faint, moon washed out. Would be better without the giant orb right next door. Lots of visible stars though.
34	M11	8/8/2016	12:50	PASS, BE	The Wild Duck Cluster	Open cluster	Scutum	5.8	C8	ES 82/18mm		Open Cluster dim cluster, dew hindering smog. small part visible
35	M57	8/8/2016	1:10	PASS, BE	The Ring Nebula	Planetary nebula	Lyra	9.0	C8	ES 82/18mm		Ring Nebula I see it, very dim. central ring smudge visible
36	M40	8/12/2016	22:40	Herchies, BE	Winnecke 4	Double Star	Ursa Major	8.0	C8	ES 82/18mm		Double star easily split
37	M29	8/12/2016	22:53	Herchies, BE		Open cluster	Cygnus	6.6	C8	ES 82/18mm		Open Cluster H shape 8 or 9 primary stars another 10 or so not as bright
38	M56	8/12/2016	23:04	Herchies, BE		Globular cluster	Lyra	8.2	C8	Ultima Duo 10mm		Globular Cluster Very feint. Central cluster visible, not easily split into individual stars
39	M71	8/12/2016	23:14	Herchies, BE		Globular cluster	Sagitta	8.3	C8	Ultima Duo 10mm		Globular Cluster Feint, many stars resolved with averted vision.
40	M27	8/12/2016	23:20	Herchies, BE	The Dumbbell Nebula	Planetary nebula	Vulpecula	8.1	C8	ES 82/18mm		Planetary Nebula Beautiful! No color of course but very visible.
41	M15	8/12/2016	23:29	Herchies, BE		Globular cluster	Pegasus	6.4	C8	Ultima Duo 10mm		Globular Cluster Bright central core, far to many stars to count. Even more with averted vision.
42	M2	8/12/2016	23:37	Herchies, BE		Globular cluster	Aquarius	6.5	C8	Ultima Duo 10mm		Globular Cluster Another glob of stars. Bright central core, stars not easily resolved
43	M72	8/12/2016	23:44	Herchies, BE		Globular cluster	Aquarius	9.4	C8	ES 82/18mm		Globular Cluster Very feint. Not resolvable into stars, but it is there.
44	M73	8/12/2016	23:50	Herchies, BE		Open cluster	Aquarius	5.0	C8	Ultima Duo 10mm		Open Cluster Y shape group 4 or 5 stars pretty feint
45	M75	8/12/2016	23:58	Herchies, BE		Globular cluster	Sagittarius	8.6	C8	Ultima Duo 10mm		Globular Cluster Extremely feint, not resolvable into individual stars.
46	M26	8/13/2016	0:10	Herchies, BE		Open cluster	Scutum	8.0	C8	Ultima Duo 10mm		Open Cluster Extremely feint, not resolvable into individual stars. Much like M75
47	M4	8/26/2016	21:33	Bozeman, MT		Globular cluster	Scorpius	5.9	8-17x25 Binos			Globular Cluster. Averted vision, very faint but clear. first time using binoculars for this. Just a fuzzy blob.
48	M80	8/26/2016	21:54	Bozeman, MT		Globular cluster	Scorpius	7.2	8-17x25 Binos			Globular Cluster. Averted vision, very clear blob of stars
49	M19	8/26/2016	22:00	Bozeman, MT		Globular cluster	Ophiuchus	7.2	8-17x25 Binos			Globular cluster. Very faint, pinpoint using averted vision
50	M9	8/26/2016	22:10	Bozeman, MT		Globular cluster	Ophiuchus	7.9	8-17x25 Binos			Globular Cluster. Faint but visible with direct vision. Pinpoint of light kind of diffuse
51	M12	9/24/2016	21:20	Herchies, BE		Globular cluster	Ophiuchus	6.6	C8	ES 82/18mm		Globular Cluster. Very faint, huge number of stars, not easy to make out any individual stars, to much LP.
52	M14	9/24/2016	21:25	Herchies, BE		Globular cluster	Ophiuchus	7.6	C8	ES 82/18mm		Globular cluster. Just like M12 not much can be made out other than it is there and hard to resolve individual stars
53	M16	9/24/2016	21:33	Herchies, BE	Part of the Eagle Nebula	Open cluster	Serpens Cauda	6.0	C8	ES 82/18mm		Eagle Nebula. Very faint. I can see it, tiny bit of nebulosity, 2 dim points of light near the center
54	M25	9/24/2016	21:40	Herchies, BE		Open cluster	Sagittarius	4.6	C8	ES 82/18mm		Open Cluster. 7 or 8 central stars, not much to look at
55	M97	1/6/2017	22:30	Mons, BE	The Owl Nebula	Planetary nebula	Ursa Major	11.2	114/900 Refractor	25mm Generic		Owl Nebula. Very very faint, averted gaze. The stars around it look like an owl, or maybe a phoenix
56	M33	1/20/2017	20:00	Herchies, BE	The Triangulum Galaxy	Spiral galaxy	Triangulum	5.7	Danubia 200	ES 82/18mm		very very faint, no structure, averted vision
57	M1	1/20/2017	20:16	Herchies, BE	The Crab Nebula	Supernov a remnant	Taurus	8.4	Danubia 200	ES 82/18mm		faint but visible with direct vision. looks like a blob, not much definition. Of filter not much help, maybe worse

58	M79	1/20/2017	21:05	Herchies, BE		Globular cluster	Lepus	8.0	Danubia 200	Baader Hyp 10mm		Faint but clear. Stars just on the edge of individual resolving. looking above a roof top, some heat affecting the air quality.
59	M53	4/4/2017	21:43	Herchies, BE		Globular cluster	Coma Berenices	7.7	SW 120	Celestron 25mm		10 or so central stars, not much central definition, lots of light pollution. Star-hopped from Arcturus
60	M60	5/26/2017	23:55	Herchies, BE		Elliptical galaxy	Virgo	8.8	C8	ES 82/18mm, Baader Hyp 10mm		Faint smudge @ 113x, easily visible. Larger smudge @ 203x, circular with not much definition
61	M59	5/27/2017	0:27	Herchies, BE		Elliptical galaxy	Virgo	9.8	C8	ES 82/18mm, Baader Hyp 10mm		Really faint @ 113x, no definition. Bigger smudge @203x, more definition with averted vision. Central core visible, slight outer banding maybe.
62	M58	5/27/2017	0:43	Herchies, BE		Spiral galaxy	Virgo	9.8	C8	ES 82/18mm, Baader Hyp 10mm		Located @113x, very faint @203x. Directly visible, dim central region. Not much more with averted gaze.
63	M87	5/27/2017	0:59	Herchies, BE	Virgo A	Elliptical galaxy	Virgo	8.6	C8	ES 82/18mm, Baader Hyp 10mm		Faint @113x, better at 203x. Not much definition just a dim smudge. Visible with direct vision, not much more with averted vision
64	M86	5/27/2017	1:07	Herchies, BE		Lenticular galaxy	Virgo	9.2	C8	ES 82/18mm, Baader Hyp 10mm		2 faint blobs @ 113x, no definition. Both resolve more @203x, not much detail but they were there, visible with direct vision.
65	M64	3/19/2018	20:48	Sussex, NJ	Blackeye galaxy	Spiral galaxy	Coma Berenices	8.5	CR-150 HD	ES 82/18mm		Very dim, averted vision. Faint central smudge.
66	M85	3/19/2018	20:56	Sussex, NJ		Lenticular galaxy	Coma Berenices	9.3	CR-150 HD	ES 82/18mm		Very dim pinpoint fuzzy smudge. No definition, hard to make out.
67	M100	3/19/2018	21:10	Sussex, NJ		Spiral galaxy	Coma Berenices	9.4	CR-150 HD	ES 82/18mm		Royal pain to find. Averted gaze, very small smudge. No real definition visible.
68	M99	3/19/2018	21:33	Sussex, NJ		Spiral galaxy	Coma Berenices	9.8	CR-150 HD	ES 82/18mm		Pinpoint of diffused light, fuzzy. No real definition, right on the edge of averted gaze.
69	M88	3/19/2018	21:42	Sussex, NJ		Spiral galaxy	Coma Berenices	9.5	CR-150 HD	ES 82/18mm		Two-fer with M91. Both very similar, small smudge of pinpoint light. Both fits in the FOV of the ES 82/18mm nicely. No definition
70	M91	3/19/2018	21:44	Sussex, NJ		Spiral galaxy	Coma Berenices	10.2	CR-150 HD	ES 82/18mm		Two-fer with M88. Both very similar, small smudge of pinpoint light. Both fits in the FOV of the ES 82/18mm nicely. No definition
71	M90	3/19/2018	21:50	Sussex, NJ		Spiral galaxy	Virgo	9.5	CR-150 HD	ES 82/18mm		Another little ball of not much. Just pinpoint of diffused light without any definition other than fuzzyness.
72	M98	3/19/2018	21:55	Sussex, NJ		Spiral galaxy	Coma Berenices	10.1	CR-150 HD	ES 82/18mm		Massive fast moving red & green variable stars. Nevermind, outbound flight from Newark. Small smudge, diffuse pinpoint. No definition, right on the edge of averted gaze.