

NGC 7000

9-7-80

11:00 pm EDT

Fair seeing, excellent transparency

4 1/4" Newtonian, 28x

Nebula stands out beautifully with nebula filter. Outline, especially Central America region, quite clear.

NGC 7006

8-4-88

1:56 am EDT

Fair seeing, very good transparency

8" f/9 Newtonian, 172x

Looks a great deal like NGC 6934 observed earlier this morning. Round, a little fainter than 6934, small brightening toward center.

NGC 7008

8-9-88

2:18 am EDT

Fair seeing, very good transparency

8" f/9 Newtonian, 85x, 105x

Easy planetary, nearly circular, appears slightly mottled at higher power.

NGC 7009

9-8-83

9:15 pm EDT

Poor seeing, very good transparency

10" f/9.5 Newtonian, 142x

Beautiful little planetary nebula. Very blue, oval, just a hint of "ears". Easy to find just 2 degrees W of Upsilon (υ) Aquarii.

NGC 7044

8-9-88

2:29 am EDT

Fair seeing, very good transparency

8" f/9 Newtonian, 56x

Small faint smudgy area only found by careful checks with star chart. A few stars visible including one in center but they may be foreground objects.

NGC 7062

9-7-88

10:10 pm EDT

Fair seeing, very good transparency

10" f/6 Newtonian, 48x, 90x

Small and faint but fairly rich open cluster. Slightly irregular, framed by 4 slightly brighter stars at N,S,E and W edges. W one brightest.

NGC 7086

9-7-88

10:25 pm EDT

Fair seeing, very good transparency

10" f/6 Newtonian, 48x, 90x

Fairly large (~ 1/6 diameter of low power field) open cluster. Fairly faint stars with a couple brighter near center. Very irregular with blank patches.

NGC 7128

9-7-88

10:40 pm EDT

Fair seeing, very good transparency

10" f/6 Newtonian, 48x, 73x
Very small open cluster. Brighter members form ring. Brightest one SE. Dim grouping.

NGC 7142
9-7-88
10:40 pm EDT
Fair seeing, very good transparency
10" f/6 Newtonian, 48x, 73x
Moderately large (~ 1/5 diameter of power field), loose, irregular open cluster of very faint stars.

NGC 7160
9-7-88
11:05 pm EDT
Fair seeing, very good transparency
10" f/6 Newtonian, 48x
Pretty open cluster. Spans about 1/8 of field. About 25 mixed bright and faint stars, 2 much brighter than the rest. 3 moderately bright in a small curve.

NGC 7209
9-7-88
11:20 pm EDT
Fair seeing, very good transparency
10" f/6 Newtonian, 48x
Very large, fairly bright, rich open cluster. About 70 stars counted. Spans about 1/2 of field.

NGC 7217
9-7-88
11:26 pm EDT
Fair seeing, very good transparency
10" f/6 Newtonian, 48x
Fairly small but easy galaxy appearing as small round glow brightening toward center.

NGC 7243
9-8-88
9:15 pm EDT
Poor seeing, good transparency
10" f/6 Newtonian, 48x
Bright, loose open cluster. Large - spans ~ 1/2 of field diameter. Very irregular. About 75 stars counted but difficult to say where cluster ends. Visible in 8 x 50 finder.

NGC 7296
9-8-88
9:40 pm EDT
Poor seeing, good transparency
10" f/6 Newtonian, 48x, 73x
This is an open cluster? Small, faint, sparse. Just a denser knot in the rich background of the Milky Way.

NGC 7331
9-3-80
10:30 pm EDT
Good seeing, very good transparency
6" f/8 Newtonian, 43x
Spindle shaped galaxy. Not very good. Perhaps some mottling.

NGC 7380
9-8-88
9:50 pm EDT
Poor seeing, good transparency

6" f.8 Newtonian, 48x, 73x
Fairly large and bright open cluster of mixed bright and faint stars. Loose, ~ 40 stars.

NGC 7448
9-8-88
10:10 pm EDT
Poor seeing, good transparency
10" f/6 Newtonian, 48x, 73x, 90x
Very small, faint galaxy. Elongated. Brightens very gradually toward center.

NGC 7479
9-8-88
10:20 pm EDT
Poor seeing, good transparency
10" f/6 Newtonian, 48x, 73x, 90x
Small, very faint galaxy. Almost rectangular looking! Brighter toward center.

NGC 7510
9-8-88
10:00 pm EDT
Poor seeing, good transparency
10" f/6 Newtonian, 48x, 90x
Very small, faint open cluster. Brighter members form curved V-shape sort of like the outline of a steer's horn.

NGC 7606
9-8-88
10:35 pm EDT
Poor seeing, good transparency
10" f/6 Newtonian, 48x, 73x, 90x
Moderate size galaxy with very low surface brightness. Elongated. A little brighter in center. Higher powers improve contrast.

NGC 7662
9-11-82
10:30 pm EDT
Fair seeing, good transparency
10" f/9.5 Newtonian, 232x
Planetary nebula. Bright, slightly oval, blue-green. Could sometimes detect darker area in center.

NGC 7686
9-8-88
11:05 pm EDT
Poor seeing, good transparency
10" f/6 Newtonian, 48x
About 30 stars of mixed brightness in a large and loose cluster. Bright yellow-orange star near center. Spans ~ 1/6 of field.

NGC 7723
9-8-88
10:45 pm EDT
Poor seeing, good transparency
10" f/6 Newtonian, 48x, 73x
Small, barely visible smudge of light. Improved contrast at 73x makes this galaxy slightly easier.

NGC 7727
9-8-88
10:50 pm EDT

Poor seeing, good transparency

10" f/6 Newtonian, 73x

Small, round, faint galaxy. Considerable brightening toward center. Easier than nearby NGC 7723.

NGC 7789

10-18-82

8:00 pm EDT

Fair seeing, good transparency

10" f/6 Newtonian, 48x

Very large, round star cluster. Very rich in faint stars, seems to be a ring of slightly fainter stars around center, ring incomplete to SE.

NGC 7790

10-14-88

10:20 pm EDT

Poor seeing, good transparency

10" f/6 Newtonian, 48x, 90x

Small open cluster. Several stars visible in nebulosity (unresolved stars?). Shares field with NGC 7788.

NGC 40

11-14-88

6:10 pm EST

Fair seeing, fair transparency

10" f/6 Newtonian, 48x, 73x, 90x

Small, faint, round planetary nebula with bright central star. As magnification increases star becomes more obvious and nebula less. Easy object.

NGC 129

11-14-88

6:25 pm EST

Fair seeing, fair transparency

10" f/6 Newtonian, 48x

Moderately rich open cluster of mostly faint stars. Brighter isosceles triangle of stars near center, brighter orange pair at E edge. 6th-mag star at S edge.

NGC 136

11-14-88

6:45 pm EST

Fair seeing, fair transparency

10" f/6 Newtonian, 73x, 90x, 117x

Very small and faint open cluster. Nebulous with only a hint of resolution. Orange 9th mag star close to SW.

NGC 157

11-14-88

7:05 pm EST

Fair seeing, fair transparency

10" f/6 Newtonian, 48x, 73x

Very faint, fairly large, slightly oval galaxy gradually brightening toward center. View hampered by crescent moon.

NGC 185

11-14-88

7:20 pm EST

Fair seeing, fair transparency

10" f/6 Newtonian, 48x

Fairly large, nearly circular, faint patch of light. Galaxy brightens a little toward center. Easy to find ~ 1 degree W of 22 Cas, Omicron(o).

NGC 205
11-14-88
7:25 pm EST
Fair seeing, fair transparency
10" f/6 Newtonian, 48x
Companion to M31. large, faint, elongated 2 for 1. Considerable brightening toward center. Also known as M110.

NGC 225
11-14-88
7:30 pm EST
Fair seeing, fair transparency
10" f/6 Newtonian, 48x
Coarse group of moderately bright stars. About 25 counted. Spans around 1/5 of the field of view.

NGC 246
11-14-88
7:50 pm EST
Fair seeing, fair transparency
10" f/6 Newtonian, 48x
Large, round, extremely faint planetary. Could not see without nebula filter. 3 stars visible in nebulosity, one could be central star?

NGC 247
11-14-88
8:05 pm EST
Fair seeing, fair transparency
10" f/6 Newtonian, 48x
With averted vision could occasionally image a large, very elongated blur running N-S. Star in S end.

NGC 253
11-14-88
8:20 pm EST
Fair seeing, fair transparency
10" f/6 Newtonian, 48x
Very large and elongated galaxy. Easy object. Gradually fades into background around the edges.

NGC 278
12-30-88
8:38 pm EST
Fair seeing, good transparency
10" f/6 Newtonian, 48x
Very small, faint galaxy. circular, easy to spot, almost looks like a planetary nebula.

NGC 288
11-14-88
8:25 pm EST
Fair seeing, fair transparency
10" f/6 Newtonian, 48x, 90x
Globular. Large, round, faint patch. Some mottling visible at higher power.

NGC 381
12-30-88
8:50 pm EST
Fair seeing, good transparency
10" f/6 Newtonian, 48x
Open cluster, ~ 10' diameter, about 25 stars, mostly faint, irregular in shape, halfway between 2 6th mag finder field stars.

NGC 404

12-7-82

7:00 pm EST

Fair seeing, fair transparency

10" f/6 ne. 38x, 90x

Very small, but obvious round patch close to northwest of Beta (β) Andromedae. Glare from Beta hinders view.

NGC 436

12-30-88

9:05 pm EST

Fair seeing, good transparency

10" f/6 Newtonian, 48x, 90x

Open cluster, ~ 5' in diameter, about 20 stars, very irregular, 7th mag field star just to W, not particularly bright but stands out well.

NGC 457

10-18-82

10:15 pm EST

Fair seeing, good transparency

10" f/6, 6" f/8 Newtonian, 48x, 43x

10": Large, irregular grouping of fairly bright stars. Scattered, fairly rich. Two bright stars on SE edge.

6": Looks like a bug with two big glowing eyes.

NGC 488

12-30-88

9:20 pm EST

Fair seeing, good transparency

10" f/6 Newtonian, 48x, 90x

Fairly faint, not quite round galaxy, brightens in center with stellar nucleus. Mars just a few degrees away.

NGC 524

12-30-88

9:30 pm EST

Fair seeing, good transparency

10" f/6 Newtonian, 48x, 90x

Round, small galaxy, considerable brightening toward center, small bright core. Nearby Zeta (ζ) Psc a nice double.

NGC 559

1-28-89

7:30 pm EST

Fair seeing, fair transparency

8" f/6 Newtonian, 51x

Open cluster, rich in faint stars fading to unresolved background. Irregular line of brighter stars across face.

NGC 584

1-28-89

7:00 pm EST

Fair seeing, fair transparency

8" f/6 Newtonian, 51x

Small, dim galaxy. Brighter in center. Perhaps slightly oval. In same field with NGC 596.

NGC 596

1-28-89

7:00 pm EST

Fair seeing, fair transparency
8" f/6 Newtonian, 51x
Small, round galaxy. Not as bright as NGC 584. Brighter toward center. Bright field star close to the east.

NGC 598
1-28-89
7:55 pm EST
Fair seeing, fair transparency
70mm binoculars, 10x
Very easy, large, oval hazy patch of light.

NGC 613
10-28-89
11:30 pm EDT
Fair seeing, good transparency
10" f/6 Newtonian, 90x
Fairly small, slightly oval, very faint galaxy with only slight brightening toward center. Star at NE edge.

NGC 615
1-28-89
7:10 pm EST
Fair seeing, fair transparency
8" f/6 Newtonian, 51x
Small, faint galaxy. Barely visible under these conditions. No discernable brightening toward center.

NGC 637
1-28-89
9:00 pm EST
Poor seeing, fair transparency
10" f/6 Newtonian, 48x
Loose, small open cluster. Faint with several brighter stars in a chain across the face.

NGC 651
1-28-89
11:55 pm EDT
Good seeing, very good transparency
8" f/8 Newtonian, 60x
Very faint nebula. Seems to be rectangular in shape.

NGC 654
10-18-82
9:30 pm EDT
Fair seeing, good transparency
10" f/6 Newtonian, 48x
Small, round, faint scattering of stars with one bright star along edge. Fits in same field with NGC 663.

NGC 659
10-18-82
9:30 pm EDT
Fair seeing, good transparency
10" f/6 Newtonian, 48x
Small star cluster. A bit smaller than NGC 654. Three bright stars SW. Fits in same field with NGC 663.

NGC 663
10-18-82
9:30 pm EDT
Fair seeing, good transparency
10" f/6 Newtonian, 48x

Large, rich and scattered cluster of mixed bright and faint stars. Irregular in shape, flanked by two smaller clusters - one NNW, one SSW.

NGC 720
10-28-89
10:59 pm EDT
Fair seeing, good transparency
10" f/6 Newtonian, 90x
Quite small, round, faint with a bright nucleus, unimpressive.

NGC 752
9-11-82
11:30 pm EDT
Fair seeing, good transparency
70mm binoculars, 10x
A large open cluster. Scattered grouping of fairly faint stars.

NGC 772
10-28-89
10:28 pm EDT
Fair seeing, good transparency
10" f/6 Newtonian, 90x
Small, slightly oval, faint galaxy. Slight brightening toward center, tiny bright nucleus.

NGC 779
10-28-89
10:44 pm EDT
Fair seeing, good transparency
10" f/6 Newtonian, 90x
Small, very elongated galaxy, faint but obvious, brightens toward center. Elongation NNW-SSE.

NGC 869
2-27-81
8:56 pm EST
Fair seeing, good transparency
6" f/8 Newtonian, 43x
Fairly rich open cluster of nearly equal magnitude stars. One bright star near center, one NNE. Very compact near center but still easily resolved. May be seen in same field with NGC 884. Naked-eye visible.

NGC 884
2-27-81
8:53 pm EDT
Fair seeing, good transparency
6" f/8 Newtonian, 43x
Fairly rich open cluster of stars having about the same magnitude. Brighter star in group to NW. Despite youth of group a couple of the stars appeared orangish. Can be seen in same field with NGC 869. May be seen with naked eye.

NGC 891
9-11-82
11:45 pm EDT
Fair seeing, good transparency
10" f/6 Newtonian, 48x
Very faint, very elongated hazy blur. This edge-on galaxy appeared fairly large but the surface brightness is quite low - the galaxy was barely visible under these conditions.

NGC 908
11-3-89

11:20 pm EST
Good seeing, good transparency
10" f/6 Newtonian, 73x, 90x
Thick, elongated galaxy. Very faint. Nearly equal brightness throughout. Width about 1/3 length.

NGC 936
10-29-89
12:10 am EDT
Fair seeing, good transparency
10" f/6 Newtonian, 90x
Fairly small, round, fairly faint galaxy with considerable brightening toward center. Elusive NGC 941 in same field, NGC 955 easier to east.

NGC 1022
11-3-89
11:40 pm EST
Good seeing, very good transparency
10" f/6 Newtonian, 90x
Small, round, faint but obvious galaxy with considerable brightening toward center. Looks like faint unresolved globular cluster.

NGC 1023
10-28-89
11:56 pm EDT
Fair seeing, good transparency
10" f/6 Newtonian, 90x
Very pretty, a miniature Andromeda galaxy with bright central region and nearly stellar nucleus; in pretty star field.

NGC 1027
6-30-89
12:15 am EDT
Poor seeing, very good transparency
8" f/6 Newtonian, 38x
Fairly large (~ 10'), loose open cluster. About 15 moderate to faint stars surrounding one of about 7th mag.

NGC 1052
11-3-89
11:50 pm EST
Good seeing, very good transparency
10" f/6 Newtonian, 48x, 90x
Very much like NGC 1022 but with bright stellar nucleus. Two much fainter patches in the same low power field - a large one SW and a smaller one WNW.

NGC 1055
11-4-89
12:10 am EST
Good seeing, very good transparency
10" f/6 Newtonian, 48x, 90x
Fairly long, very elongated, very faint galaxy, forms S point of equilateral triangle with two bright field stars. Faint star at N edge. M77 SE in low power field.

NGC 1084
11-4-89
12:05 am EST
Good seeing, very good transparency
10" f/6 Newtonian, 90x

Moderately bright, almost rectangular looking galaxy with gradual slight brightening toward center.

NGC 1245

2-25-89

7:50 pm EST

Fair seeing, very good transparency

13" f/4.5 Newtonian, 50x

Large open cluster, very rich in faint stars, diameter ~ 25', brighter star along SSE edge.

NGC 1342

11-4-89

12:45 am EST

Good seeing, good transparency

10" f/6 Newtonian, 48x

About 35 mixed bright and faint stars in an irregular cluster about 15' across. Brighter stars very roughly form an S-shape.

NGC 1407

11-4-89

12:30 am EST

Good seeing, good transparency

10" f/6 Newtonian, 90x

Small, round, fairly faint galaxy, brightening considerably toward center with stellar nucleus. Dimmer NGC 1400 visible to SW in same field.

NGC 1444

2-25-89

7:25 pm EST

Fair seeing, very good transparency

10" f/6 Newtonian, 48x, 90x

Very small open cluster, about one dozen very faint stars surrounding a bright double - primary white, secondary blue.

NGC 1501

2-10-83

8:15 pm EST

Fair seeing, good transparency

10" f/6 Newtonian, 48x, 90x

Planetary nebula. A little smaller than M57. Round, faint, even luminosity throughout. Bright star in field (ESE?).

NGC 1502

2-10-83

7:58 pm EST

Fair seeing, good transparency

10" f/6 Newtonian, 38x, 48x

Open cluster. About 15 obvious stars in an interesting shape: 3 arms. V-shape with brightest 2, crossbow with all 3.

NGC 1513

4-5-88

9:45 pm EDT

Poor seeing, good transparency

10" f/6 Newtonian, 48x

Small open cluster, faint stars. Blank in center with ring of stars around it.

NGC 1528

4-5-88

9:35 pm EDT

Poor seeing, good transparency

10" f/6 Newtonian, 48x

Large (~ 1/2 degree), loose, rich cluster of moderate (about 15) to faint (about 50) stars. Somewhat irregular (very roughly circular).

NGC 1535

2-25-89

7:40 pm EST

Fair seeing, very good transparency

10" f/6 Newtonian, 90x, 147x

Very tiny, bluish planetary, round, very faint, possible star in center.

NGC 1545

4-5-88

9:30 pm EDT

Poor seeing, good transparency

10" f/6 Newtonian, 48x

Sparse, loose open cluster about 1/3 degree in diameter. Two bright stars near center; one on N edge. Scattering of fainter stars in 6 arms.

NGC 1647

2-27-81

10:08 pm EST

Fair seeing, good transparency

6" f/8 Newtonian, 43x

Very loose open cluster of equal magnitude stars. Two double stars near center. Large, fairly round group of about 40 stars.

NGC 1664

2-27-81

10:00 pm EST

Fair seeing, good transparency

6" f/8 Newtonian, 43x

Fairly rich open cluster of faint stars of nearly equal magnitudes. Brighter star at southeast edge.

NGC 1788

2-25-89

8:00 pm EST

Fair seeing, very good transparency

8" f/11.5 APO, 73x

Very small diffuse nebula, field star to NNW edge, roughly circular, faint, faint stellar point within it.

NGC 1817

2-25-89

10:45 pm EST

Poor seeing, very good transparency

10" f/6 Newtonian, 48x

Large, rich group of very faint stars, ~ 20'. Description in Herschel booklet is for NGC 1807 nearby.

NGC 1750

2-25-89

8:10 pm EST

Fair seeing, very good transparency

10" f/6 Newtonian, 48x

Added as 400th object but plotted as NGC 1746 in Sky Atlas 2000.0. Very large open cluster, 45' in diameter, scattered, loose, mixed bright and faint stars, about 100 stars.

NGC 1857
2-25-89
8:25 pm EST
Fair seeing, very good transparency
10" f/6 Newtonian, 48x
Small open cluster ~ 9', poor, loose group of very faint stars surrounding a brighter yellow-orange star.

NGC 1907
2-27-81
10:16 pm EST
Fair seeing, good transparency
8" f/8 Newtonian, 58x
Compact, rich, small open cluster of faint stars. Two brighter stars off to one side of cluster.

NGC 1931
2-27-81
10:28 pm EST
Fair seeing, good transparency
8" f/8 Newtonian, 102x
Small round blob, brighter in center. Forms square with three nearby stars.

NGC 1961
2-25-89
9:20 pm EST
Poor seeing, very good transparency
10" f/6 Newtonian, 48x
Small, very faint but obvious blur, slightly elongated.

NGC 1964
2-25-89
9:35 pm EST
Poor seeing, very good transparency
10" f/6 Newtonian, 48x, 90x
Quite small, very faint galaxy with brighter center, slightly elongated, rather low in sky when observed.

NGC 1980
2-25-89
9:45 pm EST
Poor seeing, very good transparency
10" f/6 Newtonian, 48x
Faint, diffuse nebulosity around Iota (ι) Orionis, difficult to distinguish from glare around Iota.

NGC 1999
2-25-89
9:50 pm EST
Poor seeing, very good transparency
10" f/6 Newtonian, 48x
Small, round, faint diffuse nebula surrounding a faint star.

NGC 2022
2-25-89
1:00 pm EST
Poor seeing, very good transparency
10" f/6 Newtonian, 73x, 90x
Small, round, fairly faint planetary. Obvious and easy to find. No color noticed.

NGC 2024
2-25-89

10:05 pm EST
Poor seeing, very good transparency
10" f/6 Newtonian, 48x
Very large diffuse nebula about 20' in diameter with a large dark rift through it.

NGC 2126
2-25-89
11:00 pm EST
Poor seeing, very good transparency
10" f/6 Newtonian, 48x
Small, loose, poor group of faint stars ~ 7', next to a bright field star, about 20 stars in group.

NGC 2129
2-25-89
11:10 pm EST
Poor seeing, very good transparency
10" f/6 Newtonian, 48x
Small open cluster. Two bright stars surrounded by about a dozen faint stars.

NGC 2158
1-4-83
8:20 pm EST
Poor seeing, fair transparency
10" f/6 Newtonian, 38x
Visible as nebulous patch to the southwest of M35. Both in the same low power field.

NGC 2169
3-9-89
7:40 pm EST
Fair seeing, fair transparency
10" f/6 Newtonian, 48x
Bright, small, open cluster ~ 6', about 6 bright and 9 fainter stars in shape of upside down 7 and capital Sigma.

NGC 2185
3-9-89
8:01 pm EST
Fair seeing, fair transparency
10" f/6 Newtonian, 48x, 73x, 90x
Very faint, small, irregular fuzzy patch around a few very faint stars.

NGC 2186
3-9-89
8:22 pm EST
Fair seeing, fair transparency
10" f/6 Newtonian, 48x
Small open cluster of mixed bright and faint stars. Barely stands out from background Milky Way.

NGC 2194
3-9-89
8:28 pm EST
Fair seeing, good transparency
10" f/6 Newtonian, 48x
Pretty, little open cluster ~ 7'. Many faint pinpoints of light against a misty, unresolved background.

NGC 2204
3-9-89
8:48 pm EST

Poor seeing, good transparency
10" f/6 Newtonian, 48x
Scattered group of moderately bright stars just SSE of a brighter yellow field star. Not much of a cluster.

NGC 2215
3-9-89
8:53 pm EST
Poor seeing, good transparency
10" f/6 Newtonian, 48x
Pretty open cluster, about 20 fairly faint stars, ~ 8' in diameter, roughly circular.

NGC 2232
3-9-89
9:02 pm EST
Poor seeing, very good transparency
10" f/6 Newtonian, 38x
Very bright, large open cluster ~ 1/2 degree, loose, scattered, 4 very bright and many fainter stars of various brightnesses.

NGC 2244
3-9-89
9:08 pm EST
Poor seeing, very good transparency
10" f/6 Newtonian, 38x
Beautiful, large, bright open cluster ~ 40'. Rich in stars of widely varying magnitudes, loose, about 60 stars counted. Rosette visible around OC.

NGC 2251
3-9-89
9:14 pm EST
Poor seeing, very good transparency
10" f/6 Newtonian, 38x
Elongated group of moderate to faint stars. Two dozen stars in main group form mouth shape.

NGC 2264
3-9-89
9:21 pm EST
Poor seeing, very good transparency
10" f/6 Newtonian, 38x
Very large, bright, irregular open cluster ~ 1/2 degree. 20 bright stars, 30 fainter, one very bright blue-white star. Extremely faint nebulosity in cluster. Hubble's variable nebula seen nearby.

NGC 2266
3-9-89
9:45 pm EST
Poor seeing, very good transparency
10" f/6 Newtonian, 48x, 73x
Very pretty little open cluster ~ 6'. Rich in tiny faint stars against unresolved background. An arc of brighter stars goes across the face of the cluster.

NGC 2281
3-9-89
9:52 pm EST
Poor seeing, very good transparency
10" f/6 Newtonian, 48x
Pretty, bright open cluster ~ 20' with 40 moderately bright to faint stars. Rich and scattered, irregular in shape.

NGC 2286

3-9-89

10:08 pm EST

Poor seeing, very good transparency

10" f/6 Newtonian, 73x

Open cluster, rich in very faint stars, ~ 15' in diameter. Does not stand out well from background. Irregular.

NGC 2301

1-31-81

9:45 pm EST

Fair seeing, good transparency

6" f/8 Newtonian, 43x

Bright, very loose, sparse open cluster. Bright stars form Y-like pattern. In Milky Way, does not stand out well from background.

NGC 2304

3-10-89

8:54 pm EST

Poor seeing, good transparency

10" f/6 Newtonian, 73x

Small open cluster ~ 6'. Faint, round, minute stars fading into background. Rich in barely resolved stars.

NGC 2311

3-10-89

9:06 pm EST

Poor seeing, good transparency

10" f/6 Newtonian, 48x

Loose, irregular open cluster ~ 10'. 35 moderately bright to faint stars.

NGC 2324

3-10-89

9:26 pm EST

Poor seeing, good transparency

10" f/6 Newtonian, 48x

Open cluster. Dim dusting of faint stars ~ 8' in diameter.

NGC 2335

3-10-89

9:43 pm EST

Poor seeing, good transparency

10" f/6 Newtonian, 48x

Small open cluster ~ 10'. 25 fairly faint stars, one slightly brighter one in center. Loose grouping.

NGC 2343

3-10-89

9:46 pm EST

Poor seeing, good transparency

10" f/6 Newtonian, 48x

Little open cluster ~ 7' in diameter. 15 stars of widely different magnitudes counted.

NGC 2353

3-10-89

9:49 pm EST

Poor seeing, good transparency

10" f/6 Newtonian, 48x

Large, loose open cluster. Mixed brightnesses. About 60 stars counted. One bright blue-white star in S edge.

NGC 2354

3-10-89

10:04 pm EST

Poor seeing, good transparency

10" f/6 Newtonian, 48x

Large, loose, irregular grouping of moderate to faint stars ~ 20'. About 40 stars counted. Does not stand out well.

NGC 2355

4-5-88

10:00 pm EDT

Poor seeing, good transparency

10" f/6 Newtonian, 48x

Small, very rich open cluster. Tightly packed with faint stars, one brighter star in center. Round. Averted vision helps a lot.

NGC 2360

2-23-87

10:00 pm EST

Poor seeing, very good transparency

50mm binoculars, 7x

Small, faint but easy patch found while scanning from Sirius to M46 and M47, a little more than halfway along the line. Fairly bright field star close to west.

NGC 2362

3-10-89

10:09 pm EST

Poor seeing, good transparency

10" f/6 Newtonian, 48x

Pretty, fairly bright open cluster ~ 6'. 30 stars counted in a striking array around a very bright central star.

NGC 2371

1-4-83

9:30 pm EST

Poor seeing, fair transparency

10" f/9.5 Newtonian, 93x

Interesting planetary nebula. Has a double appearance, pinched in the middle, like a dumbbell. Quite faint.

NGC 2372

1-4-83

9:30 pm EST

Poor seeing, fair transparency

10" f/9.5 Newtonian, 93x

Same as NGC 2371.

NGC 2392

1-4-83

9:30 pm EST

Poor seeing, fair transparency

10" f/9.5 Newtonian, 93x, 186x Beautiful little planetary, bears magnification well. Bluish, round, central star easily visible. Blinking effect noticeable: planetary much more distinct when viewed with averted vision.

NGC 2395

4-5-88

10:10 pm EDT

Poor seeing, good transparency

10" f/6 Newtonian, 48x
About 1/5 degree, irregular, inconspicuous open cluster of about 25 moderate to faint stars in a loose grouping.

NGC 2403
2-10-83
8:45 pm EST
Fair seeing, good transparency
10" f/6 Newtonian, 48x

Spiral galaxy. Fairly large. Faint and roundish with brighter, large lens shaped area within. Two bright stars superimposed on opposite sides of the galaxy. Brighter one east, fainter one west. Another star superimposed on central area of the galaxy, closer to the fainter of the two mentioned above.

NGC 2419
1-27-90
10:45 pm EST
Fair seeing, good transparency
8" f/9 Newtonian, 56x, 112x
Small, round, dim globular in straight line with two bright field stars. Some slight brightening toward center.

NGC 2420
1-27-90
10:55 pm EST
Fair seeing, good transparency
8" f/9 Newtonian, 56x, 75x
About 15 faint stars in a loose irregular group against a misty, unresolved background. About 7' across.

NGC 2421
3-10-89
10:00 pm EST
Poor seeing, good transparency
10" f/6 Newtonian, 48x
Fairly rich open cluster ~ 10'. 35 faint stars of similar magnitudes in an irregular grouping.

NGC 2422
1-16-80
10:06 pm EST
Fair seeing, very good transparency
6" f/8 Newtonian, 43x
Very loose open cluster. About 15 bright stars and 20 fainter ones. Irregular in shape.

NGC 2423
2-23-87
10:10 pm EST
Poor seeing, very good transparency
50 mm binoculars, 7x
Small faint patch just north of M47.

NGC 2438
1-27-90
11:10 pm EST
Poor seeing, good transparency
8" f/9 Newtonian, 75x
Fairly large, moderately bright, round planetary in north edge of the large, rich open cluster M46.

NGC 2440
1-27-90

11:20 pm EST

Poor seeing, good transparency

8" f/9 Newtonian, 75x, 105x

Pretty planetary, blue-green, oval, central area seems brighter. A little smaller than 2438, fairly bright.

NGC 2479

1-27-90

11:30 pm EST

Poor seeing, good transparency

8" f/9 Newtonian, 75x

Loose, irregular group of about 40 faint stars in a cluster about 9' in diameter.

NGC 2482

4-25-89

9:23 pm EDT

Poor seeing, good transparency

10" f/6 Newtonian, 48x

Rich, irregular group of fairly faint stars scattered over about 15'. About 50 stars counted.

NGC 2489

4-25-89

9:30 pm EDT

Poor seeing, good transparency

10" f/6 Newtonian, 48x

Small, round, dim open cluster of very faint stars. About 7'. Not good this low in the sky, but easy to spot just north of bright field star.

NGC 2506

4-25-89

10:05 pm EDT

Poor seeing, good transparency

10" f/6 Newtonian, 48x, 73x

Very pretty open cluster, ~ 9'. Rich in faint stars with several slightly brighter in two knots. Nebulosity visible mostly near knots.

NGC 2509

4-25-89

9:40 pm EDT

Poor seeing, good transparency

10" f/6 Newtonian, 48x

Rich, compact, small cluster of dim stars. Circular, more compact toward center. Stands out well.

NGC 2527

4-25-89

9:50 pm EDT

Poor seeing, good transparency

10" f/6 Newtonian, 48x

About 40 moderately bright to dim stars in a large, loose, irregular scattered group. About 20'. Hard to tell where cluster ends.

NGC 2539

4-25-89

10:14 pm EDT

Poor seeing, good transparency

10" f/6 Newtonian, 48x, 73x

Very large, loose open cluster of moderately bright stars. Cluster vaguely triangular with 19 Pup at one edge. About 100 stars counted. About 20'.

NGC 2548
1-16-80
11:08 pm EST
Fair seeing, good transparency
6" f/8 Newtonian, 43x
Very loose open cluster of moderately bright stars. Fills field of view very nicely.

NGC 2567
1-31-90
11:05 pm EST
Poor seeing, good transparency
10" f/6 Newtonian, 90x
About 20 dim stars counted in a fairly loose group about 9' across. Additional dimmer stars pop in and out of view.

NGC 2571
1-31-90
10:50 pm EST
Poor seeing, good transparency
10" f/6 Newtonian, 48x, 90x
About 3 fairly bright stars and 25 dimmer ones in a loose, irregular cluster, counted at higher power. At lower X, group lies within right triangle of bright field stars.

NGC 2613
1-31-90
11:40 pm EST
Fair seeing, good transparency
10" f/6 Newtonian, 90x, 117x
Extremely dim, elongated blur. Slight brightening toward center. Oriented WNW-ESE.

NGC 2627
1-31-90
11:20 pm EST
Poor seeing, good transparency
10" f/6 Newtonian, 90x
About 30 very faint stars in an inconspicuous group about 7' in diameter. Near 5th mag Zeta (ζ) Pyx.

NGC 2655
4-26-89
9:58 pm EDT
Fair seeing, fair transparency
10" f/6 Newtonian, 48x, 90x
Very small, round, faint galaxy. Brighter in center. Stellar nucleus.

NGC 2681
4-26-89
10:15 pm EDT
Fair seeing, fair transparency
10" f/6 Newtonian, 48x
Small, round, faint galaxy. A little brighter in central area. Stellar nucleus with averted vision.

NGC 2683
3-13-83
10:10 pm EST
Poor seeing, good transparency
6" f/8 Newtonian, 38x, 72x
Very pretty, very elongated spindle of light. Fairly bright and easy. Oriented NE to SW. Isosceles triangle of stars S. Bright field stars WSW in low power field.

NGC 2742

4-26-89

10:48 pm EDT

Fair seeing, fair transparency

10" f/6 Newtonian, 48x

Extremely faint, round, small smudge of a galaxy near fairly bright field star. Fits in same field with easier NGC 2768.

NGC 2768

4-26-89

10:40 pm EDT

Fair seeing, fair transparency

10" f/6 Newtonian, 48x

Nice little elongated galaxy. Brighter toward center.

NGC 2775

2-18-82

9:00 pm EST

Fair seeing, fair to good transparency

10" f/6 Newtonian, 48x

Small, faint spiral galaxy. Appears as roundish nebulous patch.

NGC 2782

4-30-89

10:31 pm EDT

Poor seeing, fair transparency

10" f/6 Newtonian, 48x

Very small, extremely faint smudge best seen with averted vision. Round.

NGC 2787

5-3-81

11:40 pm EDT

Poor seeing, good transparency

8" f/8 Newtonian, 58x

Very faint patch, a little brighter toward center. Shape difficult to discern, roughly circular. Two fairly bright stars in field.

NGC 2811

4-30-89

11:01 pm EDT

Poor seeing, fair transparency

10" f/6 Newtonian, 48x

Very small, extremely faint smudge. Barely noticeable under these conditions. Only spotted with help of Uranometria.

NGC 2841

3-13-83

9:25 pm EST

Poor seeing, good transparency

6" f/8 Newtonian, 38x, 72x

Elongated galaxy, fairly bright toward center. Easily visible and located about 1 degree S and 2 degrees W of Theta (θ) UMa. Faint star at NW edge of galaxy. Matched white pair can fit in same low power field to SSE.

NGC 2859

3-13-83

9:55 pm EST

Poor seeing, good transparency

6" f/8 Newtonian, 38x, 72x

Round, faint, fairly small galaxy. Brighter toward center. Not conspicuous for a 6" under these conditions. At 72x two fairly bright stars share field - one S, one WNW.

NGC 2903

5-4-89

9:30 pm EDT

Fair seeing, good transparency

10" f/6 Newtonian, 48x

Fairly large, long streak of light gradually brightening toward center. Easy object, due S of Lambda (λ) Leonis.

NGC 2950

5-4-89

9:55 pm EDT

Fair seeing, good transparency

10" f/6 Newtonian, 48x

Faint, round galaxy. Very small. Looks like a star surrounded by a fuzzy glow. Interference from aurora in north.

NGC 2964

5-4-89

9:40 pm EDT

Fair seeing, good transparency

10" f/6 Newtonian, 48x

Fairly faint, slightly elongated galaxy. Could just glimpse NGC 2968 as a dim smudge close to the NE.

NGC 2974

2-1-90

10:10 am EST

Good seeing, good transparency

10" f/6 Newtonian, 117x

Little furball right next to a 9th mag star. Brighter toward center. Supposed to be elongated but looks round to me.

NGC 2976

5-3-81

11:50 pm EDT

Poor seeing, good transparency

8" f/8 Newtonian, 58x

Nice ghostly patch of light. Fairly large, somewhat elongated. Uniform surface brightness. Field stars all faint.

NGC 2985

5-3-81

11:58 pm EDT

Poor seeing, good transparency

8" f/8 Newtonian, 58x

Very faint, round patch. Somewhat brighter toward center. Field stars faint - lies midway between two of equal brightness.

NGC 3034

5-20-85

11:00 pm EDT

Fair seeing, very good transparency

36" f/10 classical Cassegrain, 229x

Very nice, bright spindle. A couple of bright condensations near center. One dark lane near center obvious, some other dark mottlings visible.

NGC 3077

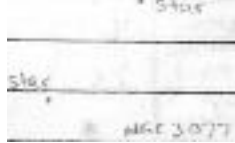
5-3-81

11:30 pm EDT

Poor seeing, good transparency

8" f/8 Newtonian, 58x

Roundish fuzzy patch. Not too bright. Uniform brightness across surface.



NGC 3079

5-4-89

10:40 pm EDT

Fair seeing, good transparency

10" f/6 Newtonian, 48x

Very long and thin needle of light. Quite pretty. Juts into small isosceles triangle of fairly bright field stars.

NGC 3115

5-4-89

10:55 pm EDT

Fair seeing, good transparency

10" f/6 Newtonian, 48x, 73x, 90x

Moderate sized, elongated galaxy. Considerable brightening toward center. Small, bright, round core.

NGC 3147

5-4-89

11:05 pm EDT

Fair seeing, good transparency

10" f/6 Newtonian, 48x, 73x

Moderate sized, round, easy galaxy. Small bright speck in center. Just north of a bright field star.

NGC 3166

5-4-89

11:15 pm EDT

Fair seeing, good transparency

10" f/6 Newtonian, 73x

Moderate sized galaxy in same field with NGC 3169. Slightly brighter of the two. Not quite circular, brightening considerably toward center.

NGC 3169

5-4-89

11:15 pm EDT

Fair seeing, good transparency

10" f/6 Newtonian, 73x

Moderate sized galaxy. A little more elongated than NGC 3166. Brightening toward center not as pronounced as in 3166.

NGC 3184

3-13-83

10:25 pm EST

Poor seeing, good transparency

6" f/8 Newtonian, 38x

Fairly large but quite faint galaxy. Circular, with no distinct nucleus. Easy to locate about 3/4 degree west

of Mu (μ) UMa. Very faint star superimposed on N side of galaxy. Fairly bright field stars WNW and WSW. Close to WNW star.

NGC 3190

2-17-90

11:30 pm EST

Fair seeing, good transparency

10" f/6 Newtonian, 48x, 90x

Forms pretty galaxy trio with 3193 and 3185. Elongated WNW to ESE with nearly stellar nucleus. Longer and brighter than 3193.

NGC 3193

2-17-90

11:30 pm EST

Fair seeing, good transparency

10" f/6 Newtonian, 48x, 90x

Forms pretty galaxy trio with 3193 and 3185. Small, round, some brightening toward center.

NGC 3198

2-17-90

8:35 pm EST

Fair seeing, good transparency

10" f/6 Newtonian, 48x

Long, dim, elongated blur oriented NNE to SSW.

NGC 3226

2-17-90

11:10 pm EST

Fair seeing, good transparency

10" f/6 Newtonian, 48x

Forms nice galaxy pair with 3227. Round, dim, smaller and less distinct than its companion. Slight brightening toward center.

NGC 3227

2-17-90

11:10 pm EST

Fair seeing, good transparency

10" f/6 Newtonian, 48x

Forms nice galaxy pair with 3226 to N. Larger and brighter of the two. Round with a very faint stellar nucleus.

NGC 3242

2-18-90

12:55 am EST

Fair seeing, good transparency

10" f/6 Newtonian, 90x, 117x, 147x

Beautiful, round, quite bright fairly large planetary nebula. Distinctly robin's-egg blue in color.

NGC 3245

2-17-90

11:40 pm EST

Fair seeing, good transparency

10" f/6 Newtonian, 48x

Small, round, faint galaxy. Considerable brightening toward center. Curve of field stars leads to bright double due E of galaxy.

NGC 3277

2-17-90

11:45 pm EST

Fair seeing, good transparency

10" f/6 Newtonian, 48x, 90x

Very small, very faint, round galaxy gradually brightening toward center. Is E of bright double mentioned for 3245.

NGC 3294

2-17-90

8:50 pm EST

Fair seeing, good transparency

10" f/6 Newtonian, 48x

Very dim galaxy, elongated ~ E-W. Easy to find about one degree N of 35 LMi.

NGC 3310

3-13-83

10:40 pm EST

Poor seeing, good transparency

6" f/8 Newtonian, 38x

Small, faint, round, inconspicuous galaxy. Small, brighter nucleus. Fairly bright field star NNE.

NGC 3344

2-17-90

10:05 pm EST

Fair seeing, good transparency

10" f/6 Newtonian, 90x, 147x

Small, round, faint galaxy with hint of stellar nucleus. Two field stars at outer edge - dimmer one superimposed.

NGC 3377

2-18-90

12:24 am EST

Fair seeing, good transparency

10" f/6 Newtonian, 48x, 90x

Small, fairly bright galaxy. Considerable brightening toward center with bright nucleus. Perhaps slightly oval. Makes a nice triangle with the galaxy 3367 and 52 Leonis at low power.

NGC 3379

3-13-80

12:09 am EST

Fair seeing, very good transparency

10" f/5 Newtonian, 45x

Small, roundish, hazy patch. Nearly stellar in appearance with similar object nearby (NGC 3384).

NGC 3384

3-13-80

12:09 am EST

Fair seeing, very good transparency

10" f/5 Newtonian, 45x

Small, roundish hazy patch. Nearly stellar in appearance. A little smaller and fainter than NGC 3379.

NGC 3395

2-17-90

9:25 pm EST

Fair seeing, good transparency

10" f/6 Newtonian, 90x

Small, nearly round, very dim galaxy with an even fainter round companion galaxy nearly touching to NE.

NGC 3412

2-18-90

12:34 am EST

Fair seeing, good transparency

10" f/6 Newtonian, 48x, 90x

Small faint galaxy with a bright nucleus. Perhaps slightly oval. SW of two bright field stars in same low-power field.

NGC 3414

2-17-90

9:40 pm EST

Fair seeing, good transparency

10" f/6 Newtonian, 48x

Small, round, dim galaxy with small, bright, nearly stellar nucleus. 44 LMi to west in same field of view.

NGC 3432

2-17-90

9:15 pm EST

Fair seeing, good transparency

10" f/6 Newtonian, 48x

Dim, elongated galaxy oriented NE-SW. Located between 2 faint field stars. One very faint field star superimposed on galaxy.

NGC 3486

2-17-90

9:50 pm EST

Fair seeing, good transparency

10" f/6 Newtonian, 48x

Small, round, faint galaxy with gradual brightening toward center.

NGC 3489

2-18-90

12:10 am EST

Fair seeing, good transparency

10" f/6 Newtonian, 90x

Fairly bright galaxy, elongated NE-SW, has a bright nucleus.

NGC 3504

2-17-90

9:45 pm EST

Fair seeing, good transparency

10" f/6 Newtonian, 48x

Small, faint, round, fuzzy galaxy. Considerable brightening toward center, stellar nucleus.

NGC 3521

2-18-90

12:40 am EST

Fair seeing, good transparency

10" f/6 Newtonian, 90x

Fairly bright spindle shaped galaxy with a bright nucleus. Oriented almost N-S. Located near 62 Leonis.

NGC 3556

2-27-81

11:51 pm EST

Fair seeing, good transparency

8" f/8 Newtonian, 58x

Spindle shaped glow. There seems to be a faint star superimposed on the galaxy, especially with averted vision.



NGC 3593

5-3-81

11:05 pm EDT

Poor seeing, good transparency

10" f/6 Newtonian, 48x

Small, faint elongated blur. Forms a right triangle with the two brightest field stars to E and SE. M65, M66 and NGC 3628 lie ~ one field of view away.

NGC 3607

5-3-81

11:15 pm EDT

Poor seeing, good transparency

10" f/6 Newtonian, 48x

Very small, round, inconspicuous fuzzy patch between Theta (θ) and Delta (δ) Leonis.

NGC 3608

5-3-81

11:15 pm EDT

Poor seeing, good transparency

10" f/6 Newtonian, 48x

Very close to north of NGC 3607. Very small round fuzzy patch even fainter than NGC 3607.

NGC 3610

3-18-90

10:31 pm EST

Poor seeing, variable transparency

10" f/6 Newtonian, 73x

Small, round, faint galaxy with a nearly stellar nucleus. About the same brightness as 3613 just to the south.

NGC 3613

3-18-90

10:28 pm EST

Poor seeing, variable transparency

10" f/6 Newtonian, 73x

A little brighter than 3619 to S in same field. Small, faint oval with a brighter core.

NGC 3619

3-18-90

10:28 pm EST

Poor seeing, variable transparency

10" f/6 Newtonian, 73x

Small, faint, round with a dim star-like nucleus. Shares the field with 3613.

NGC 3621

3-4-90

1:15 am EST

Poor seeing, fair transparency

10" f/6 Newtonian, 90x

Fairly large, slightly oval, barely discernable smudge. Not a northern U.S. object. Needed precise positioning with Uranometria to find this one.

NGC 3626
3-19-90
12:18 am EST
Poor seeing, variable transparency
10" f/6 Newtonian, 48x
Very small, round, faint galaxy with a bright nucleus.

NGC 3628
4-7-81
11:00 pm EST
Good seeing, excellent transparency
10" f/6 Newtonian, 48x
Large, fairly bright. Brightest field star indicated.



NGC 3631
3-18-90
10:59 pm EST
Poor seeing, variable transparency
10" f/6 Newtonian, 73x
Fairly large and faint, round galaxy gradually brightening toward center with a small, brighter nucleus.

NGC 3640
3-19-90
12:22 am EST
Poor seeing, variable transparency
10" f/6 Newtonian, 48x
Very small, round, faint galaxy with a brighter nucleus.

NGC 3655
3-19-90
12:04 am EST
Poor seeing, variable transparency
10" f/6 Newtonian, 48x
Very small, faint round smudge of a galaxy with slight brightening toward center. (In Leo, not UMa).

NGC 3665
3-18-90
11:43 pm EST
Poor seeing, variable transparency
10" f/6 Newtonian, 73x
Small, round, very faint galaxy with some brightening toward center and a stellar nucleus.

NGC 3675
3-18-90
11:36 pm EST
Poor seeing, variable transparency
10" f/6 Newtonian, 73x
Moderate sized, elongated galaxy oriented ~ N-S. Faint with considerable brightening toward center.

NGC 3686
3-19-90
12:10 am EST

Poor seeing, variable transparency
10" f/6 Newtonian, 48x
Small, faint galaxy with even illumination. Perhaps slightly oval. Brightest of three galaxies in a row (3686, 3684, 3681). Fourth companion (3691) barely visible.

NGC 3726
3-18-90
11:25 pm EST
Poor seeing, variable transparency
10" f/6 Newtonian, 73x
Fairly large and evenly illuminated low surface brightness galaxy. Oval with a faint star superimposed on N edge.

NGC 3729
3-18-90
10:53 pm EST
Poor seeing, variable transparency
10" f/6 Newtonian, 73x
Small, oval, dim galaxy with gradual brightening toward center. Field star superimposed S of nucleus. Shares field with larger, rounder, dimmer 3718.

NGC 3810
4-7-81
11:15 pm EST
Good seeing, excellent transparency
10" f/6 Newtonian, 48x
Small, faint, oval patch of light. Brighter toward center. Distinctive triangle of stars at edge of field in 8x50 finder.

NGC 3813
3-18-90
11:50 pm EST
Poor seeing, variable transparency
10" f/6 Newtonian, 73x
Small, very faint, elongated galaxy with even illumination. Elongated E-W.

NGC 3877
3-18-90
11:08 pm EST
Poor seeing, variable transparency
10" f/6 Newtonian, 90x
Pretty, very elongated galaxy with moderate uniform brightness. W edge seems to end more abruptly than E. Helps to keep Chi (χ) UMa out of field.

NGC 3893
3-18-90
11:18 pm EST
Poor seeing, variable transparency
10" f/6 Newtonian, 73x
Moderate sized, round, moderate to faint galaxy. Some brightening toward center. Faint superimposed star on NW edge.

NGC 3898
3-18-90
10:40 pm EST
Poor seeing, variable transparency
10" f/6 Newtonian, 73x

Moderate sized, round galaxy. Faint, with a fair amount of brightening toward center, indistinct stellar nucleus. (In UMa, not Leo).

NGC 3900

3-22-90

12:18 am EST

Very good seeing, good transparency

10" f/6 Newtonian, 73x

Small, round, faint galaxy with some brightening toward the center.

NGC 3912

3-22-90

12:20 am EST

Very good seeing, good transparency

10" f/6 Newtonian, 73x

Very small, very dim, round galaxy with only slight brightening toward center.

NGC 3938

3-21-90

10:35 pm EST

Very good seeing, good transparency

10" f/6 Newtonian, 73x

Very faint, fairly large elongated galaxy with a bright stellar nucleus. Elongation NE-SW.

NGC 3941

3-21-90

11:31 pm EST

Very good seeing, good transparency

10" f/6 Newtonian, 48x

Very small, round, faint galaxy with bright central core.

NGC 3945

3-21-90

8:45 pm EST

Very good seeing, good transparency

10" f/6 Newtonian, 90x

Moderate sized, fairly dim galaxy. Considerable brightening toward center with nearly stellar nucleus.

Faint star at SW edge.

NGC 3949

3-21-90

10:20 pm EST

Very good seeing, good transparency

10" f/6 Newtonian, 73x

Small, slightly oval, faint galaxy with a very faint, barely glimpsed stellar nucleus.

NGC 3953

3-21-90

9:14 pm EST

Very good seeing, good transparency

10" f/6 Newtonian, 73x

Fairly large, oval, pretty galaxy with a slightly brighter central core.

NGC 3962

3-22-90

12:35 am EST

Good seeing, fair transparency

10" f/6 Newtonian, 73x

Very small, round, faint galaxy with bright stellar nucleus.

NGC 3982

3-21-90

8:58 pm EST

Very good seeing, good transparency

10" f/6 Newtonian, 73x

Round, faint with very little brightening toward center. In same field with 3998. Also, 3972 barely visible in same field.

NGC 3992

5-24-88

12:55 am PDT

Fair seeing, excellent transparency

36" f/10 classical Cassegrain, 229x

Barred spiral, bar faintly visible as well as spiral arms. Small, circular, brighter nucleus.

NGC 3998

3-21-90

Very good seeing, good transparency

10" f/6 Newtonian, 73x

Very small, round bright patch with a larger extremely faint fuzz around it. Shares field with 3982 and 3972.

NGC 4026

3-21-90

9:25 pm EST

Very good seeing, good transparency

10" f/6 Newtonian, 73x

Small, faint, very elongated galaxy brightening toward center with a bright nucleus. Fairly bright field star to SSE.

NGC 4027

3-22-90

12:40 am EST

Good seeing, fair transparency

10" f/6 Newtonian, 73x

Moderate sized, slightly oval, dim galaxy with nearly uniform brightness. About 1/2 degree NW of 31 Crt.

NGC 4030

3-22-90

12:40 am EST

Good seeing, good transparency

10" f/6 Newtonian, 73x

Moderate sized, perhaps slightly oval, faint galaxy gradually brightening inward. Flanked by two faint field stars of nearly equal magnitude.

NGC 4036

3-21-90

8:30 pm EST

Very good seeing, good transparency

10" f/6 Newtonian, 73x

A little brighter than 4041 in the same field. Small oval galaxy with a bright central area.

NGC 4038

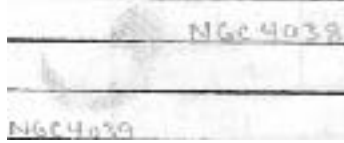
5-24-85

1:05 am, PDT

Fair seeing, excellent transparency

36" f/10 classical Cassegrain, 229x

Very unusual galaxy.



NGC 4039
See entry for 4038.

NGC 4041
3-21-90
8:30 pm EST
Very good seeing, good transparency
10" f/6 Newtonian, 73x
Small, round, faint with considerable brightening toward center. Perhaps slightly oval. In same field with 4036.

NGC 4051
3-21-90
11:11 pm EST
Very good seeing, good transparency
10" f/6 Newtonian, 73x
Large, slightly oval, faint galaxy. Fairly even brightness with brighter stellar nucleus.

NGC 4085
3-21-90
9:35 pm EST
Very good seeing, good transparency
10" f/6 Newtonian, 73x
Interesting galaxy, paired with 4088. This one is small and narrow with fairly even brightness. Faint, oriented E-W. Three bright stars in a Y-shape lie just to the south of the galaxy pair.

NGC 4088
3-21-90
9:35 pm EST
Very good seeing, good transparency
10" f/6 Newtonian, 73x
Fairly large and bright galaxy. Elongated with uniform brightness. Oriented NE-SW.

NGC 4102
3-21-90
9:11 pm EST
Very good seeing, good transparency
10" f/6 Newtonian, 73x
Small, round, faint galaxy with some brightening toward center and a nearly stellar nucleus. There is a faint star at the WSW edge.

NGC 4111
3-21-90
10:48 pm EST
Very good seeing, good transparency
10" f/6 Newtonian, 73x
Small, dim, elongated galaxy with bright core. Oriented NNW-SSE. Bright field star close to the east.

NGC 4143
3-21-90
10:55 pm EST

Very good seeing, good transparency

10" f/6 Newtonian, 73x

Small, round, faint galaxy brightening toward center with a faint stellar nucleus. Bright, nearby field star to SW.

NGC 4147

3-22-90

1:10 am EST

Very good seeing, good transparency

10" f/6 Newtonian, 117x

Small, moderately bright globular cluster. Fades off toward edges. No resolution but perhaps a hint of mottling.

NGC 4150

3-21-90

11:50 pm EST

Very good seeing, good transparency

10" f/6 Newtonian, 48x

Very small, very faint, round galaxy with a stellar nucleus. Fairly bright field star close to W. Larger, low-surface-brightness galaxy 4136 in same field to SSW.

NGC 4151

3-21-90

11:19 pm EST

Very good seeing, good transparency

10" f/6 Newtonian, 48x

Small, round, faint galaxy with bright core. Situated in a field of bright stars.

NGC 4179

3-22-90

12:50 am EST

Good seeing, good transparency

10" f/6 Newtonian, 73x

Small, very faint, very elongated galaxy with a brighter central core.

NGC 4203

3-21-90

11:41 pm EST

Very good seeing, good transparency

10" f/6 Newtonian, 48x

Small, round, faint galaxy with bright nearly stellar nucleus. Very bright field star to ESE.

NGC 4214

3-21-90

11:35 pm EST

Very good seeing, good transparency 10" f/6 Newtonian, 48x Fairly large and bright oval galaxy with fairly uniform brightness.

NGC 4216

3-22-90

1:00 am EST

Very good seeing, good transparency

10" f/6 Newtonian, 48x

Fairly large, fairly bright, very elongated galaxy brightening toward center with bright sub-stellar nucleus. Elongated NE-SW.

NGC 4245

3-23-90

11:07 pm EST

Very good seeing, good transparency

10" f/6 Newtonian, 73x

Small, round, very faint galaxy with a small, slightly brighter central area. At the western end of a curving line of faint field stars.

NGC 4251

3-23-90

11:00 pm EST

Very good seeing, good transparency

10" f/6 Newtonian, 73x

Small, fairly faint elongated galaxy with a brighter central core and occasional glimpses of a bright stellar nucleus. Bright field star 1/2 degree to E.

NGC 4258

5-24-85

12:48 am PDT

Fair seeing, excellent transparency

36" f/10 classical Cassegrain, 229x

Very large and bright, oval, much spiral structure faintly visible. Bright, small, elongated nucleus.

NGC 4261

3-25-90

11:00 pm EST

Poor seeing, good transparency

10" f/6 Newtonian, 90x

Small, fairly bright, round galaxy with much dimmer galaxy (4264) close to NE and a slightly dimmer galaxy (4260).

NGC 4273

3-25-90

10:50 pm EST

Poor seeing, good transparency

10" f/6 Newtonian, 90x

Small, oval, faint galaxy brightening toward center. Shares field with three more galaxies (4281, 4268 and 4270).

NGC 4274

3-23-90

11:14 pm EST

Very good seeing, good transparency

10" f/6 Newtonian, 73x

Fairly large elongated galaxy with gradual brightening toward center and a small brighter nucleus. Oriented WNW-ESE.

NGC 4278

3-23-90

11:20 pm EST

Very good seeing, good transparency

10" f/6 Newtonian, 90x

Small, round, fairly bright galaxy with a bright nucleus. Much dimmer galaxy (4283) just to E in same field.

NGC 4281

3-25-90

10:50 pm EST

Poor seeing, good transparency

10" f/6 Newtonian, 90x

Small, dim, round galaxy with stellar nucleus. Makes pretty galaxy quadruplet with 4273, 4270 and 4268.

NGC 4293
3-13-90
9:15 pm EDT
Good seeing, good transparency
10" f/6 Newtonian, 73x
Fairly large, elongated, faint galaxy. Slightly mottled. Oriented ~ WSW-ENE.

NGC 4303
5-16-80
11:00 pm EDT
Fair seeing, very good transparency
6" f/8 Newtonian, 43x
Faint, round, unimpressive hazy blob of light, fairly bright star to north, slightly fainter one preceding.

NGC 4314
3-23-90
11:30 pm EST
Very good seeing, good transparency
10" f/6 Newtonian, 90x
Fairly large, moderately bright, slightly elongated galaxy oriented NW-SE. Gradually brightens toward center with a slightly brighter nucleus.

NGC 4346
3-23-90
10:27 pm EST
Very good seeing, good transparency
10" f/6 Newtonian, 48x
Small, faint elongated galaxy with a bright central core. Bright star to NW in same field. Located near M106.

NGC 4350
4-13-90
9:33 pm EDT
Good seeing, good transparency
10" f/6 Newtonian, 73x
Small, elongated, faint galaxy brightening toward center with brighter nearly stellar nucleus. Slightly fainter 4340 in field close to WNW.

NGC 4361
3-24-90
12:10 am EST
Good seeing, fair transparency
10" f/6 Newtonian, 73x
Fairly large, round, faint planetary nebula, no color noted. Occasionally glimpsed central star.

NGC 4365
3-25-90
11:40 pm EST
Poor seeing, good transparency
10" f/6 Newtonian, 48x
Fairly small, moderately bright, round galaxy brighter in central area with a nearly stellar nucleus.

NGC 4371
4-12-90
10:36 pm EDT
Good seeing, good transparency
10" f/6 Newtonian, 73x

Moderate size, fairly faint, oval galaxy with a brighter, nearly stellar nucleus.

NGC 4394

4-13-90

9:18 pm EDT

Good seeing, good transparency

10" f/6 Newtonian, 73x

Small, round, faint galaxy with a brighter core. Located just east of M85 - in same field.

NGC 4414

3-23-90

11:44 pm EST

Very good seeing, good transparency

10" f/6 Newtonian, 73x

Fairly large, fairly bright, elongated galaxy oriented NNW-SSE. Considerable brightening toward center and a star-like nucleus.

NGC 4419

4-13-90

9:51 pm EDT

Good seeing, fair transparency

10" f/6 Newtonian, 73x

Moderate size, fairly faint, elongated galaxy. Elongated SE-NW. Gradual brightening toward center with a brighter nearly stellar nucleus.

NGC 4429

4-12-90

10:29 pm EDT

Good seeing, good transparency

10" f/6 Newtonian, 73x

Moderately bright, very elongated galaxy with considerable brightening toward center. Oriented ESE-WNW. Located in a meandering line of moderately bright field stars.

NGC 4435

4-13-90

10:26 pm EDT

Good seeing, fair transparency

10" f/6 Newtonian, 73x

Small, round, fairly bright galaxy with a bright sub-stellar nucleus. Forms pretty pair with 4438 close to S.

NGC 4438

4-13-90

10:26 pm EDT

Good seeing, fair transparency

10" f/6 Newtonian, 73x

Fairly large, fairly bright, elongated galaxy oriented NE-SW, brightens slightly toward center. Forms pretty pair with 4435 close to N.

NGC 4442

4-12-90

10:23 pm EDT

Good seeing, good transparency

10" f/6 Newtonian, 73x

Small, fairly faint, oval galaxy with a stellar nucleus. In a star-poor field.

NGC 4448

3-22-90

10:44 pm EST

Very good seeing, good transparency

10" f/6 Newtonian, 73x

Fairly faint elongated galaxy near Gamma (γ) Com. Slight brightening toward center with a small brighter nucleus.

NGC 4449

3-23-90

10:20 pm EST

Very good seeing, good transparency

10" f/6 Newtonian, 73x

Fairly large, fairly bright elongated galaxy. Elongation NNE - SSW. Gradual brightening toward center.

NGC 4450

4-13-90

9:25 pm EST

Good seeing, good transparency

10" f/6 Newtonian, 73x

Fairly large, moderately bright, slightly oval galaxy with slight brightening toward center and a bright stellar nucleus. A 9th mag. field star lies close to the SW.

NGC 4459

4-13-90

10:13 pm EDT

Good seeing, fair transparency

10" f/6 Newtonian, 73x

Small, round, fairly bright galaxy with a stellar nucleus. 8th mag field star close to SE. Galaxy 4474 in same field to ENE.

NGC 4473

4-13-90

10:20 pm EDT

Good seeing, fair transparency

10" f/6 Newtonian, 73x

Small, slightly oval galaxy with quite bright sub-stellar nucleus. Fades gradually outward from center. Makes ~ right triangle with 4477 and 4479.

NGC 4477

4-13-90

10:20 pm EDT

Good seeing, fair transparency

10" f/6 Newtonian, 73x

Small, round, fairly bright galaxy. Stellar nucleus. Fades rapidly outward from center. Makes a right triangle with 4473 and extremely dim 4479 in same field.

NGC 4478

4-12-90

10:45 pm EDT

Good seeing, good transparency

10" f/6 Newtonian, 90x

Very small, round, fairly faint galaxy with a star-like nucleus. Shares field with M87.

NGC 4485

5-24-85

12:35 am PDT

Fair seeing, excellent transparency

36" f/10 classical Cassegrain, 229x

Companion galaxy to NGC 4490, smaller, oval, an easy object.

NGC 4490

5-24-85

12:35 pm PDT

Fair seeing, excellent transparency

36" f/10 classical Cassegrain, 229x

Large, elongated, mottled galaxy. Fatter at SE end, brighter toward center, hook curving off toward companion (NGC 4485) at NW end.

NGC 4494

6-16-84

10:42 pm EDT

Fair seeing, fair transparency

10" f/6 Newtonian, 48x, 64x, 90x

Small, round, faint galaxy. Bright spot off-center. Galaxy SSW of bright field star. Easy to find 1/2 degree E of 17 Coma Berenices.

NGC 4526

4-12-90

9:22 pm EDT

Good seeing, good transparency

10" f/6 Newtonian, 73x

Fairly faint, moderately large, elongated galaxy oriented SE-NW. Has brighter central core and faint stellar nucleus. Situated halfway between two 7th mag field stars.

NGC 4527

3-25-90

10:34 pm EST

Poor seeing, good transparency

10" f/6 Newtonian, 73x

Moderately large and bright elongated galaxy with a fair amount of brightening toward center. Oriented ENE-WSW. ~ 1/2 degree N of 4536.

NGC 4535

4-12-90

9:42 pm EDT

Good seeing, good transparency

10" f/6 Newtonian, 73x

Large, very faint, elusive, low surface brightness galaxy with fairly uniform brightness.

NGC 4536

3-25-90

10:28 pm EST

Poor seeing, good transparency

10" f/6 Newtonian, 73x

Large, faint, elongated galaxy oriented NW-SE. Slight brightening toward center. Bright field star to E.

NGC 4546

3-24-90

12:40 am EST

Good seeing, fair transparency

10" f/6 Newtonian, 48x, 73x

Small, slightly oval, moderately bright galaxy with a slightly brighter nucleus. At 48x framed on three sides by some moderately bright field stars.

NGC 4548

4-13-90

10:05 pm EDT

Good seeing, fair transparency

10" f/6 Newtonian, 73x
Moderate size, fairly faint, round galaxy gradually brightening toward center with a small stellar nucleus.

NGC 4550
4-12-90
10:50 pm EDT
Good seeing, good transparency
10" f/6 Newtonian, 73x
Very dim elongated streak with a brighter central area. Elongated N-S. Located south of M89 in same field.

NGC 4559
3-23-90
10:50 pm EST
Very good seeing, fair transparency
10" f/6 Newtonian, 73x
Fairly large, fairly bright, elongated galaxy oriented NW-SE. Three faint field stars outlining SE edge. Overall brightness fairly uniform.

NGC 4565
6-16-84
10:30 pm EDT
Fair seeing, fair transparency
10" f/6 Newtonian, 48x, 64x, 90x
Beautiful edge-on spiral. Quite large, very long and thin. Hint of dark lane through center. Very easy to find ~ 1 1/2 degrees E of 17 Comae.

NGC 4570
4-12-90
9:35 pm EDT
Good seeing, good transparency
10" f/6 Newtonian, 90x
Small, faint, elongated, unimpressive galaxy oriented SSE-NNW. Has a brighter sub-stellar nucleus.

NGC 4594
5-10-80
10:55 pm EDT
Poor seeing, good transparency
6" f/8 Newtonian, 43x
Very elongated, fairly bright galaxy. Perhaps a hint of a dark lane. Three bright stars near edge of field pointing to object.

NGC 4596
4-12-90
9:55 pm EDT
Good seeing, good transparency
10" f/6 Newtonian, 73x
Slightly oval, fairly small and faint galaxy. Gradual brightening toward center with stellar nucleus. In same field with 4608 which is smaller, fainter and rounder. Both share field with 5th mag Rho (ρ) Vir.

NGC 4618
3-23-90
10:10 pm EST
Very good seeing, good transparency
10" f/6 Newtonian, 73x
Fairly large, slightly oval, faint galaxy with slight brightening toward center. Shares field with dimmer companion galaxy (4625) to NE.

NGC 4631

5-24-85

12:18 am PDT

Fair seeing, excellent transparency

36" f/10 classical Cassegrain, 229x

Large, bright, extremely mottled galaxy. Very elongated. Very bright condensation E of center. Small oval companion galaxy NW of center.

NGC 4636

6-1-81

10:26 pm EDT

Fair seeing, fair transparency

10" f/6 Newtonian, 48x

Circular patch of light, brighter in center. Pretty lines of field stars nearby. In same field with NGC 4643 but bigger and brighter.

NGC 4643

6-1-81

10:20 pm EDT

Fair seeing, fair transparency

10" f/6 Newtonian, 48x

Small, round fuzzy patch, brighter toward center. Easy to find from NGC 4666.

NGC 4654

4-13-90

10:58 pm EDT

Fair seeing, fair transparency

10" f/6 Newtonian, 73x

Fairly large, moderately bright, elongated galaxy with slight brightening toward center. Oriented SE-NW. Fainter 4639 to WNW, can fit in the same field.

NGC 4656

5-24-85

12:14 am PDT

Fair seeing, excellent transparency

36" f/10 classical Cassegrain

Large, unusual galaxy with large bend at NE end. Brighter at ends than center. Mottled looking. Bent end has two separate brightenings.

NGC 4660

4-12-90

10:08 pm EDT

Good seeing, good transparency

10" f/6 Newtonian, 73x

Very small, round, faint galaxy with a brighter sub-stellar core. Can share field with M60.

NGC 4665

5-24-85

12:25 am PDT

Fair seeing, excellent transparency

36" f/10 classical Cassegrain

Barred spiral, bar running ~ NNW to SSE.

Arms faint and very loosely wound. Brighter area in nucleus.

NGC 4666

6-1-81

10:11 pm EDT

Fair seeing, fair transparency

10" f/6 Newtonian, 48x
Faint, very elongated blur. Faint apparent double nearby to southeast. Easy to find working from Gamma (γ) Virginis.

NGC 4689
4-13-90
10:53 pm EDT
Fair seeing, fair transparency
10" f/6 Newtonian, 73x
Moderate size, fairly faint, round galaxy with even surface brightness. Forms isosceles triangle with two bright field stars to south.

NGC 4697
6-1-81
10:50 pm EDT
Fair seeing, fair transparency
10" f/6 Newtonian, 48x
Fairly bright oval patch of light. Fairly bright star fits in same field slightly to the west of south.

NGC 4698
4-12-90
9:49 pm EDT
Good seeing, good transparency
10" f/6 Newtonian, 73x
Small, slightly oval, faint galaxy with gradual brightening toward center. Located midway along one leg of a right triangle formed by two faint and one bright field stars

NGC 4699
6-1-81
10:58 pm EDT
Fair seeing, fair transparency
10" f/6 Newtonian, 48x
Fairly easy, slightly oval patch of light. Bright star to south. Bright double to southwest.

NGC 4725
3-23-90
11:55 pm EST
Very good seeing, good transparency
10" f/6 Newtonian, 73x
Large, quite bright, oval galaxy oriented SW-NE with gradual brightening toward center and a bright, nearly stellar nucleus.

NGC 4753
3-24-90
12:33 am EST
Very good seeing, good transparency
10" f/6 Newtonian, 48x
Oval galaxy of moderate size and brightness with a slightly brighter nucleus. Makes a right triangle with two moderately bright field stars of nearly equal magnitudes.

NGC 4754
4-12-90
10:11 pm EDT
Good seeing, good transparency
10" f/6 Newtonian, 73x
Round galaxy, a little brighter than 4762 in same field. Brighter sub-stellar nucleus. Galaxy pair is among a scattering of pretty field stars.

NGC 4762

4-12-90

10:11 pm EDT

Good seeing, good transparency

10" f/6 Newtonian, 73x

Fairly large, very elongated galaxy with some brightening toward center and a nearly stellar nucleus. Oriented NE-SW. Fairly faint, in field with 4754.

NGC 4781

5-24-85

12:30 am PDT

Fair seeing, excellent transparency

36 f/10 classical Cassegrain, 229x

Fairly large, oval galaxy. Faint with gradual brightening toward center.

NGC 4800

3-23-90

10:33 pm EST

Very good seeing, good transparency

10" f/6 Newtonian, 48x, 73x

Small, faint, round galaxy with some brightening toward center and a just glimpsed faint stellar nucleus, very faint field star on W edge, shares field with several bright stars at lower power.

NGC 4845

3-25-90

10:20 pm EST

Poor seeing, good transparency

10" f/6 Newtonian, 73x

Fairly large, very faint, elongated galaxy with uniform brightness. Bright field star to SW.

NGC 4856

3-24-90

12:20 am EST

Good seeing, fair transparency

10" f/6 Newtonian, 48x

Very faint, small, oval galaxy with a brighter nucleus.

NGC 4866

4-13-90

10:42 pm EDT

Fair seeing, fair transparency

10" f/6 Newtonian, 90x

Fairly large, fairly faint elongated galaxy with a brighter central core. Oriented E-W. Bright point of light in western arms.

NGC 4900

5-23-85

11:30 pm PDT

Fair seeing, excellent transparency

36" f/10 classical Cassegrain, 229x

Faint spiral, fairly large, small brighter nucleus. Bright foreground star over SE edge. Hint of spiral structure (arms start out SE, NW).

NGC 4958

5-23-85

11:45 pm PDT

Fair seeing, excellent transparency

36" f/10 classical Cassegrain, 229x

Very elongated, fairly bright and large galaxy. Brightening toward center with bright nucleus.

NGC 4995

5-23-85

11:55 pm PDT

Fair seeing, excellent transparency

36" f/10 classical Cassegrain, 229x

Fairly large and bright, some faint structure implying spiral nature. Stellar looking nucleus. Bright orange field star NNW.

NGC 5005

5-24-85

12:08 am PDT

Fair seeing, excellent transparency

36" f/10 classical Cassegrain, 229x

Large galaxy, fairly elongated. Brighter & brighter toward center with nearly stellar nucleus.

NGC 5033

5-24-85

12:05 am PDT

Fair seeing, excellent transparency

36" f/10 classical Cassegrain, 229x

Elongated N-S running galaxy with bright central bulge to E. Abrupt edge along W side with possible fuzz beyond.

NGC 5054

9-24-90

12:25 am EST

Good seeing, fair transparency

10" f/6 Newtonian, 48x

Very faint, moderate size galaxy with fairly uniform brightness. Couldn't decide whether it was round or slightly oval.

NGC 5195

7-15-87

10:53 pm EDT

Fair seeing, fair transparency

10" f/6 Newtonian, 48x

Companion to M51. About 1/5 diameter of M51. Round, fairly bright with small, bright nucleus. Only a hint of arm reaching from 51 to 5195.

NGC 5248

5-23-85

11:20 pm PDT

Fair seeing, excellent transparency

36" f/10 classical Cassegrain, 229x

Large, faint spiral galaxy (possibly barred?). Brighter oval nucleus. Faint field star over arms to NW. Spiral arms show nicely but are quite faint.

NGC 5273

6-28-89

10:33 pm EDT

Fair seeing, good transparency

10" f/6 Newtonian, 48x, 90x

Quite small, round, faint galaxy with bright core. 8th-magnitude field star following at ~ 1/4 degree.

NGC 5322

6-28-89

10:45 pm EDT
Fair seeing, good transparency
10" f/6 Newtonian, 48x, 90x
Small, round, fairly bright galaxy. Brightness increasing considerably toward center with bright substellar point at center.

NGC 5363
5-23-85
11:00 pm PDT
Fair seeing, excellent transparency
36" f/10 classical Cassegrain, 229x
Oval galaxy, brighter toward center, faint foreground star over galaxy. Bright, close double in field.

NGC 5364
5-23-85
11:10 pm PDT
Fair seeing, excellent transparency
36" f/10 classical Cassegrain, 229x
Very faint, elongated galaxy, a little brighter toward center. Some hint of spiral structure.

NGC 5466
6-23-81
11:00 pm EDT
Good seeing, very good transparency
10" f/6 Newtonian, 48x, 54x
Globular, Large round faint patch. Stars not apparent. Bright field star to SSE. Three stars in a row to NE.

NGC 5473
6-28-89
11:02 pm EDT
Fair seeing, good transparency
10" f/6 Newtonian, 48x
Small, round, faint galaxy. Some brightening toward center. About 3/4 degree NNE of M101 in same field. 5484 to E is brighter.

NGC 5474
6-28-89
11:10 pm EDT
Fair seeing, good transparency
10" f/6 Newtonian, 48x, 90x
Fairly large, slightly oval, low surface brightness galaxy. Seems slightly brighter along edge facing M101 ~ 3/4 degree to NNE in same low X field.

NGC 5557
6-29-89
12:18 am EDT
Fair seeing, good transparency
10" f/6 Newtonian, 48x, 90x
Very small, dim galaxy with brighter nucleus. Round, about one degree north and slightly east of Alpha (α) Boötis.

NGC 5566
6-28-89
11:40 pm EDT
Fair seeing, good transparency
10" f/6 Newtonian, 48x, 90x, 117x
Galaxy - slightly larger and brighter than 5576 in same low X field. Bright nucleus. Despite description this guy looks nearly round to me.

NGC 5576

6-28-89

11:40 pm EDT

Fair seeing, good transparency

10" f/6 Newtonian, 48x, 90x

Small, round, faint galaxy. Brightening slightly toward center with brighter, stellar nucleus. In same low power field with 5566.

NGC 5631

6-28-89

11:25 pm EDT

Fair seeing, good transparency

10" f/6 Newtonian, 48x, 90x, 117x

Very small, round, faint galaxy with bright, nearly stellar core in star poor field.

NGC 5634

6-29-89

12:08 am EDT

Fair seeing, good transparency

10" f/6 Newtonian, 147x, 206x

Fairly bright and small globular cluster. Some mottling but no resolution. 8th mag star just off ESE edge.

NGC 5676

6-29-89

12:30 am EDT

Fair seeing, good transparency

10" f/6 Newtonian, 48x

Moderate sized, fairly elongated, easy galaxy ~ 1/3 degree WNW of 6th magnitude field star.

NGC 5689

6-29-89

12:30 am EDT

Fair seeing, good transparency

10" f/6 Newtonian, 48x, 90x

Small, slightly elongated, dim galaxy with brighter nucleus. Just fits in same low-power field with NGC 5676.

NGC 5694

7-6-89

10:45 pm EDT

10" f/6 Newtonian, 73x, 90x

Small, round, faint smudge. Considerable brightening toward center with hint of a small bright nucleus.

NGC 5746

6-28-89

11:54 pm EDT

Fair seeing, good transparency

10" f/6 Newtonian, 32x, 90x, 117x

Very pretty, fairly large, very elongated (N-S) spindle-shaped galaxy ~ 1/3 degree W of 109 Vir. Some mottling noted in brighter central area at higher powers.

NGC 5846

7-2-89

10:27 pm EDT

Poor seeing, good transparency

8" f/6 Newtonian, 38x, 72x

Small, round, faint galaxy fading outward from center with tiny bright central point.

NGC 5866

3-15-80

10:55 pm EST

Fair seeing, good transparency

6" f/8 Newtonian, 43x

Very faint hazy patch, small, somewhat elongated. Brighter in large part of central area. Star near edge.

NGC 5897

7-6-89

10:55 pm EDT

Poor seeing, good transparency

10" f/6 Newtonian, 73x

Large, very dim globular cluster. Only slightly brighter toward center. A hint of resolution.

NGC 5907

6-29-89

11:30 pm EDT

Poor seeing, very good transparency

6" f/8 Newtonian, 30x, 58x

Long, thin, faint, needle-like galaxy oriented ~ NE-SW.

NGC 5982

6-29-89

11:56 pm EDT

Poor seeing, very good transparency

8" f/6 Newtonian, 38x

Small, round, faint galaxy with stellar nucleus. Larger oval, lower surface brightness NGC 5985 close to east.

NGC 6118

7-2-89

10:50 pm EDT

Poor seeing, good transparency

8" f/6 Newtonian, 58x, 72x

Extremely dim, fairly large, oval galaxy about 1/3 degree southwest of a 6th magnitude star.

NGC 6144

6-4-89

12:56 am CDT

Poor seeing, very good transparency

4.3" f/6 APO, 21x

Small, round, faint fuzzy patch in same field with Antares and M4. Brighter toward center.

NGC 6171

7-18-78

11:40 pm EDT

Very good seeing, good transparency

10" f/5 Newtonian, 160x

Faint globular cluster. Barely resolved at edges.

NGC 6207

8-25-81

9:58 pm EDT

Fair seeing, good transparency

10" f/6 Newtonian, 48x, 147x

Very faint object. North and a little east of M13 in same low power field of view. Appears as a somewhat elongated, small hazy patch.

NGC 6217
10-14-88
9:15 pm EDT
Poor seeing, good transparency
10" f/6 Newtonian, 48x, 90x
Small, very faint galaxy. Slightly elongated. Some brightening toward center. Faint stellar nucleus glimpsed with averted vision.

NGC 6229
6-23-81
11:24 pm EDT
Good seeing, very good transparency
10" f/6 Newtonian, 43x, 85x, 192x
Small bright globular. Bright center, dimmer fringes. Forms triangle with field stars to west and southwest.

NGC 6235
6-4-89
1:29 am CDT
Poor seeing, very good transparency
4.3" f/6 APO, 21x
Very small, very faint, round smudge of light.

NGC 6284
6-4-89
1:40 am CDT
Poor seeing, very good transparency
4.3" f/6 APO, 21x
Very small, round, obvious patch of light, brightening toward center. Fits in same field with M19.

NGC 6287
6-4-89
1:49 am CDT
Poor seeing, very good transparency
4.3" f/6 APO, 21x, 52x
Small, round, fairly easy globular. Slightly brighter toward center. A hint of resolution at the higher power.

NGC 6293
7-6-80
10:30 pm EDT
Poor seeing, very good transparency
6" f/8 Newtonian, 43x
Small round blob found while sweeping east from M19. Fairly bright for Herschel object, brighter in center.

NGC 6304
6-4-89
2:00 am CDT
Poor seeing, very good transparency
4.3" f/6 APO, 21x, 52x
Small, fairly bright globular. Fits in same field with NGC 6316 at lower power. Slightly brighter than 6316.

NGC 6316
6-4-89
2:00 am CDT
Poor seeing, very good transparency
4.3" f/6 APO 21x, 52x
Small, fairly bright globular. Mottled at higher power. Faint foreground star superimposed on one side.

NGC 6342
6-4-89
2:15 am CDT
Poor seeing, very good transparency
4.3" f/6 APO 21x, 52x
Very small, extremely dim, round globular. Very slightly brighter toward center.

NGC 6355
6-4-89
2:25 am CDT
Poor seeing, very good transparency
4.3" f/6 APO, 52x
Very small, extremely dim, hazy patch of light. Probably would have missed this without distinctive stars nearby.

NGC 6356
6-6-83
12:50 am EDT
Poor seeing, fair transparency
10" f/6 Newtonian, 90x
Very small globular about 1 degree NE of M9, fairly bright star to the south. No resolution.

NGC 6369
6-4-89
2:40 am CDT
Poor seeing, very good transparency
4.3" f/6 APO, 52x
Small planetary. Dim, round, stands out better with O III filter.

NGC 6401
7-2-89
11:25 pm EDT
Poor seeing, very good transparency
8" f/6, ne 58x, 94x
Small, dim globular cluster. No resolution noted. Small bright central area. Round.

NGC 6426
7-2-89
11:35 pm EDT
Poor seeing, very good transparency
8" f/6 Newtonian, 58x, 72x
Small, round, dim globular. Slight brightening toward center. No resolution.

NGC 6440
7-2-89
11:50 pm EDT
Poor seeing, very good transparency
8" f/6 Newtonian, 30x, 94x
Small but easy globular in same low power field with NGC 6445. Some mottling at higher power but no resolution.

NGC 6445
7-2-89
11:50 pm EDT
Poor seeing, very good transparency
8" f/6 Newtonian, 30x, 94x
Nice planetary. Fairly large and bright. Slightly oval. Stands out better with O III filter. See 6440.

NGC 6451

6-4-89

2:45 am CDT

Poor seeing, very good transparency

4.3" f/6 APO, 21x

Moderate-sized open cluster. Sort of triangular with about 15 moderately bright stars and many fainter fading into unresolved background.

NGC 6514

6-18-80

12:20 am EDT

Good seeing, very good transparency

8" f/8 Newtonian, 58x

Nebulosity around bright double obvious though not impressive. Nebulosity around bright star to north with averted vision.

NGC 6517

7-6-89

11:15 pm EDT

Poor seeing, good transparency

10" f/6 Newtonian, 72x, 90x

Small, dim, round globular cluster brightening toward center with brighter central point. Easy to find ~ 1 degree NE of Upsilon (υ) Oph.

NGC 6520

6-4-89

2:55 am CDT

Poor seeing, very good transparency

4.3" f/6 APO, 21x, 52x

Small, bright open cluster. Several fairly bright stars against an unresolved background.

NGC 6522

6-4-89

3:10 am CDT

Poor seeing, very good transparency

4.3" f/6 APO, 65x, 91x

Fairly bright, small globular forming pretty pair with NGC 6528. Hint of resolution.

NGC 6528

6-4-89

3:10 am CDT

Poor seeing, very good transparency

4.3" f/6 APO, 65x, 91x

Small globular in pair with NGC 6522. Considerably fainter than 6522 but still easy.

NGC 6540

6-4-89

2:55 am CDT

Poor seeing, very good transparency

4.3" f/6 APO, 21x, 52x, 65x

Very small, round, dim smudge. Fits in all three fields with NGC 6520.

NGC 6543

8-25-81

10:53 pm EDT

Fair seeing, good transparency

10" f/6 Newtonian, 147x

Bright fairly large planetary. Oval, greenish, featureless (uniform brightness across face). Occasionally thought I could detect central star.

NGC 6544

7-6-89

11:40 pm EDT

Poor seeing, good transparency

10" f/6 Newtonian, 48x, 90x, 117x

Moderate size, fairly bright globular cluster with bright stellar core. Some resolution possible at highest power.

NGC 6553

7-6-89

11:30 pm EDT

Poor seeing, good transparency

10" f/6 Newtonian, 48x, 90x, 117x

Fairly large, fairly bright globular cluster with faint foreground star in NW edge. Some resolution possible.

NGC 6568

7-7-89

12:35 am EDT

Poor seeing, good transparency

10" f/6 Newtonian, 48x

Large (approx. 1/2 degree diameter), very loose open cluster of about 50 moderate to faint stars.

NGC 6569

7-7-89

12:35 am EDT

Poor seeing, good transparency

10" f/6 Newtonian, 73x

Round globular of moderate size and brightness. Brightness fairly uniform. No resolution. 7th mag field star to S.

NGC 6583

7-7-89

12:10 am EDT

Poor seeing, good transparency

10" f/6 Newtonian, 48x, 90x, 117x

Small, round, dim, elusive open cluster. Looks like globular at low power. Some resolution at higher powers.

NGC 6624

7-7-89

12:40 am EDT

Poor seeing, good transparency

10" f/6 Newtonian, 90x, 117x

Nice globular. Fairly large and bright. Considerable brightening toward center. Perhaps some mottling.

NGC 6629

7-7-89

12:20 am EDT

Poor seeing, good transparency

10" f/6 Newtonian, 117x, 147x

Small, round planetary. Stands out much better with O III filter. Possible central star with averted vision.

NGC 6633

11-14-87

6:39 pm EST

Fair seeing, very good transparency

10" f/6 Newtonian, 38x, 48x

Very large, bright open cluster with ill-defined edges. Apparent members spread out over a degree. One bright reddish star to N of main body of stars. Comet Bradfield 1987S passing right through brightest part of cluster.

NGC 6638

7-7-89

12:50 am EDT

Poor seeing, good transparency

10" f/6 Newtonian, 90x

Round globular cluster of moderate size and brightness. Brightness fairly uniform. No resolution.

NGC 6642

7-7-89

12:56 am EDT

Poor seeing, good transparency

10" f/6 Newtonian, 90x

Small, round, faint globular. Some brightening toward center. Possible bright point within, maybe off-center.

NGC 6645

7-7-89

1:05 am EDT

Poor seeing, good transparency

10" f/6 Newtonian, 48x, 73x

Over 50 moderate to faint stars in a rich, irregular open cluster with a diameter of about 8' .

NGC 6664

7-7-89

1:15 am EDT

Poor seeing, good transparency

10" f/6 Newtonian, 48x

Large (approx. 15') loose open cluster of about 25 moderately bright stars scattered in a very irregular grouping.

NGC 6712

8-11-82

10:00 pm EDT

Fair seeing, fair transparency

10" f/6 Newtonian, 48x

Found while looking for M26. Located ~ 2 degrees SE of Epsilon (ϵ) Scuti. Nice globular, circular, fairly large.

NGC 6755

9-6-88

9:58 pm EDT

Poor seeing, excellent transparency

10" f/6 Newtonian, 48x

Fairly large open cluster about 1/5 field diameter. Irregular dusting of very faint stars in a loose, rich grouping.

NGC 6756

9-6-88

9:58 pm EDT

Poor seeing, excellent transparency

10" f/6 Newtonian, 48x, 90x

Small, round, faint open cluster ~ 1/2 diameter

of NGC 6755 and in same field at lower power. Brighter toward center, compact, stars very faint.

NGC 6781

9-6-88

10:24 pm EDT

Fair seeing, excellent transparency

10" f/6 Newtonian, 48x, 73x

Fairly large, moderately faint, round planetary. Easy object but no central star. Hint of central darker areas with averted vision.

NGC 6802

8-25-81

11:15 pm EDT

Fair seeing, fair-good transparency

10" f/6 Newtonian, 48x

Faint, small cluster; appears nebular. Located just off eastern edge of the crossbar of the Coathanger (Collinder 399).

NGC 6818

9-6-88

10:52 pm EDT

Poor seeing, excellent transparency

10" f/6 Newtonian, 73x

Small, round, fairly bright planetary. Distinctly blue.

NGC 6823

8-25-81

11:45 pm EDT

Fair seeing, fair transparency

10" f/6 Newtonian, 48x

Small open cluster. Fairly bright, loose. West and a little north of NGC 6830.

NGC 6826

9-3-80

9:00 pm EDT

Good seeing, very good transparency

6" f/8 Newtonian, 68x, 98x

Very bright, pretty large planetary. Easy object, slightly oval. Central star not visible.

NGC 6830

8-25-81

11:38 pm EDT

Fair seeing, fair transparency

10" f/6 Newtonian, 48x

Small, loose open cluster. Fairly bright, irregular. West and slightly north of M27.

NGC 6834

8-9-88

1:43 am EDT

Fair seeing, very good transparency

8" f/9 Newtonian, 56x

Rich dusting of faint stars around one brighter. Nearly circular with a line of slightly brighter stars through the center. Doesn't sound much like description in book but I'm sure I've got the object marked 6834 in Tirion.

NGC 6866

8-9-88

1:29 am EDT

Fair seeing, very good transparency
8" f/9 Newtonian, 56x
Beautiful, rich open cluster of moderate to faint stars. Fairly large. Main pattern reminds me of spiral galaxy symbol.

NGC 6882

8-9-88

1:15 am EDT

Fair seeing, very good transparency

8" f/9 Newtonian, 56x

According to Uranometria 6882 is the large group of stars surrounding 20 Vul (see below) while 6885 only includes the brighter stars close to 20. Herschel book gives stars around 19 Vul as 6882 but that doesn't really look much like a cluster.

NGC 6885

8-9-88

1:05 am EDT

Fair seeing, very good transparency

8" f/9 Newtonian, 56x

About 50 moderate to faint stars surrounding the brighter star 20 Vul in a loose grouping. Apparent zone of avoidance near 20 Vul.

NGC 6905

8-9-88

12:51 am EDT

Fair seeing, very good transparency

8" f/9 Newtonian, 105x

Pretty little planetary, not quite round easy. Along one side of small triangle of faint field stars. A little brighter in center.

NGC 6910

8-9-88

12:19 am EDT

Fair seeing, very good transparency

8" f/9 Newtonian, 56x

Condensation of stars in rich area of Milky Way. Fits in field with Gamma (γ) Cygni. 4 bright stars, about a dozen moderate, many faint.

NGC 6934

8-9-88

12:34 am EDT

Fair seeing, very good transparency

8" f/9 Newtonian, 172x

Globular. Small, round, considerable brightening toward center. Moderately bright field star to west. No resolution but hint of mottling around edges.

NGC 6939

9-6-88

11:11 pm EDT

Poor seeing, excellent transparency

10" f/6 Newtonian, 48x

Very pretty open cluster. Rich in faint stars. Very roughly circular. Spans about 1/7 field diameter.

NGC 6940

9-8-83

9:45 pm EDT

Poor seeing, very good transparency

10" f/6 Newtonian, 38x

Very large, irregular open cluster. Most stars moderately bright but a large variation in magnitude exists within the cluster. Half a dozen brighter stars, one orangish near center. Nearly 100 stars in all. Located about 2 degrees SSE of 41 Cygni.

NGC 6946

9-6-88

11:17 pm EDT

Poor seeing, excellent transparency

10" f/6 Newtonian, 48x

Large, low surface brightness galaxy. A wide oval nebulous patch with hint of spiral structure imagined. Fits in field with 6939.