

Thursday January 15, 2015

Went to 3RF near Crowell, TX to observe for 4 days using their 20" f/5 and 30" f/4.5 telescopes. Arrived before noon and spent the after setting up the 20" scopes and an 18" scope for John Figoski. Bruce Heath and myself will use the 20" scopes.

There was rabbit damage on the Sky Command encoder cables that wrap around the corner of the rocker box base. The wires were chewed clean thru. According to Ron Parks, the scopes were left out for a few days and the rabbits had opportunity to eat the wires. The damage resembled the engine wires of the motorhome after the rabbits got thru with them.

Bruce and I spliced the cable, for we couldn't find the other cable I left there last March. It worked.

Clear and calm at sunset. 55 degrees. Using the 20" tonight. 17mm eyepiece is 149x.

Venus	6:31 PM	17mm – Almost full and near the western horizon.
Mercury	6:31 PM	17mm – To the right of Venus. Maybe a bit greater than ½ disc and a gibbous phase. It is boiling good in the west.
Comet 15P/Finley	7:03 PM	17mm – A brighter, pale white nucleus and a tiny bit of dim coma around it.
NGC 6949	7:14 PM	17mm – A small, round, very faint, uniformly lit glow.
Comet Lovejoy	7:25 PM	18" 22mm – 94x – Nice. Bright blue green coma. Small core. Faint tail, fan shaped near coma and spikes farther out. Goes 1 ½ FOV long.
NGC 625	7:29 PM	17mm – A dim, long, thin uniformly lit glow. Cigar shaped. Just above southern horizon yet easy to see.
PGC 11197	7:32 PM	17mm – A larger, <u>very</u> faint, fat tilted oval that is uniformly lit.
NGC 1487	7:37 PM	17mm – A larger, round to fat oval, <u>very</u> dim, uniformly lit glow. Sits above and in between two stars forming an equilateral triangle. Very low above southern horizon.

40 degrees. Seeing and transparency OK low in south.

NGC 698	7:41 PM	17mm – A small, thin glow with small, hare brighter core. <u>Very</u> faint.
MGC 06-07-001	7:55 PM	17mm – An <u>extremely faint</u> , large oval smudge of light. Move FOV around and my eye follows it. Almost not there.
PGC 10016	7:59 PM	17mm – An <u>extremely faint</u> , small, round, smudge of light.
PGC 10093	8:01 PM	17mm – A very small, brighter star core with tiny bit of extremely faint halo around it.
NGC 1049	8:04 PM	17mm – A small, <u>very</u> dim oval glow. Has a larger, hare brighter core.
PGC 13186	8:28 PM	17mm – To lower right and touching a bright field star is this <u>extremely faint</u> , small, oval, uniformly lit glow.
NGC 1365	8:31 PM	17mm – A large, dim, barred spiral with large, bright core and <u>very</u> dim arms on right hand side of bar tapers up and on left hand side of bar tapers down.
NGC 1427 NGC 1427A	8:36 PM	17mm – A small, dim, fat oval with bright, small core in center of dim halo glow. Then below and to right and a bit away is N1427A, a much smaller, dim oval glow with brighter core and tiny bit of halo around it.
NGC 1381 PGC 13343	8:39 PM	17mm – A small, thin edge on with tiny tapered arms and bigger, dim core. To right and below and a bit away is P13343, a round, <u>very</u> faint, uniformly lit glow.
NGC 1374 NGC 1375	8:42 PM	17mm – Near each other. N1374 on lower left. Both small, dim, fat oval glows with brighter cores. Upper right's (N1375) core brighter than lower left's core.
NGC 1373	8:44 PM	17mm – A larger, dim, tilted oval with small, brighter core.
NGC 1437A	8:47 PM	17mm – A small, <u>very</u> faint oval with hare brighter, small core.

NGC 1437	8:51 PM	17mm – A medium sized fat oval. <u>Very</u> faint. Uniformly lit.
NGC 1460	8:57 PM	17mm – A small, round, dim, uniformly lit glow.
NGC 1437B	9:00 PM	17mm – A larger, fat oval, <u>very</u> dim, uniformly lit glow.
NGC 1800	9:02 PM	17mm – A small, thin oval. Dim. Uniformly lit. To left of and near a brighter field star.

35 degrees. Seeing and transparency OK low in the south.

NGC 1827	9:19 PM	17mm – Centered on a bright field star is a <u>very</u> dim, thin edge on. The field star might be a bright core and <u>very</u> dim, thin tapered arms.
PGC 17027	9:36 PM	17mm – A small, <u>extremely faint</u> round glow. Has 2 <u>very</u> faint field stars close together on glow a bit below center.
PGC 16790	9:41 PM	17mm – This was very hard to find. A small, round, <u>very</u> faint glow under a brighter field star.
NGC 1744 PGC 16592	9:44 PM	17mm – A larger, <u>very</u> faint, long, fat, tapered oval. Uniformly lit. Has 2 very faint field stars on lower center part of glow.
NGC 2179	9:47 PM	17mm – A small, round, dim glow with larger, brighter core that brightens slowly to center.

32 degrees, Seeing and transparency good higher up in the sky.

NGC 1889	9:52 PM	17mm – A small, thin edge on with a nice dust lane bisecting it. Has a faint field star above and to right and bit below center and touching that makes this look like a flying saucer. Galaxy goes 11:30 – 5:30 oc.
NGC 1784	9:57 PM	17mm – A medium sized, long, fat oval. Has a hare brighter center, long, thin oval core and once in a while, see this is surrounded by this <u>extremely faint</u> , extended, larger oval.

NGC 1253	10:28 PM	17mm – A small, <u>very</u> dim, round, uniformly lit glow.
NGC 1723 NGC 1728 NGC 1725 NGC 1721	10:37 PM	17mm – A small, dim, thin oval with hare brighter core. Then above are 3 galaxies in an arc. All same. Small, dim ovals with brighter cores. N1721 is on left, N1725 is in center and N1728 is on right.
NGC 1726 NGC 1720	10:46 PM	17mm – A <u>small</u> , dim oval glow with brighter, small core. Then near and above and to left is N1720, a small, fat, uniformly lit, <u>dim</u> oval glow.
NGC 1667	10:49 PM	17mm – A small, dim, thin oval with hare brighter core.
NGC 1699	10:52 PM	17mm – A small, round, <u>very</u> dim glow with small, brighter core.
NGC 1625 NGC 1622	10:58 PM	17mm – A <u>small</u> , dim, round glow with small, hare brighter core. Then below and to right is N1622, a tiny, round, extremely faint smudge of light.
28 degrees.		
NGC 1293	12:20 AM	17mm – A small oval, uniformly lit glow. Move FOV around and my eye follows it. <u>Extremely faint</u> .
NGC 2774	12:37 AM	17mm – A small, <u>extremely faint</u> , thin oval, uniformly lit glow.

The Sky Commander is too cold. It keeps restarting itself. 29 degrees. A bit of frost and my notes are a bit damp for it is hard to write the last 2 entries on it.

Friday January 16, 2015

Clear. Light breeze from southwest near sunset.

Cleaned the 20" mirror with a mild soap spray and light rubbing. It was dirty. Rinsed with distilled water. As a post note, this step DID improve what I saw tonight and my greatly enhanced my viewing enjoyment.

Clear, calmer wind, light now at sunset.

Venus and Mercury boiling in the west. Venus a bit higher above Mercury tonight than last night.

50 degrees. Clear. Calm at 6:46 PM.

NGC 6949	7:06 PM	17mm – A small, round, uniformly lit, <u>very</u> dim glow.
NGC 7707	7:10 PM	17mm – A 15 th mag Herschel. A very small, thin oval. <u>Very</u> faint. Has tiny, hare brighter core.
MGC 06-07-001 NGC 1049	7:14 PM	17mm – Relook at this. A long, thin, <u>very</u> faint glow. Approx. 2.5 FOVs long and ¾ FOV wide. See a contrast as I pan thru area. On lower right is a linear, small, thin glow of N1049. Has 2 field stars on glow.
NGC 1079	7:17 PM	17mm – A small tilted oval. Dim halo and has larger, brighter core that brightens slowly to a small, brighter center.
NGC 1097	7:21 PM	17mm – A larger, bright, long, thin galaxy with large, brighter core.
NGC 1097A	7:21 PM	17mm – Then below N1097 and off lower arm (N1097 is vertical in eyepiece) is a very small, roundish, dim glow. Has hint of a tiny, bright core.
NGC 1292	7:23 PM	17mm – A small, thin edge on, uniformly lit, very dim.
NGC 1302	7:25 PM	17mm – A small, thin oval. Very dim halo around a larger, uniformly lit. Bright core.

NGC 1373 NGC 1374 NGC 1375	7:30 PM	17mm – 3 galaxies in FOV. Top (N1375) is a small, linear, dim glow with a tiny core. Center (N1374) is a round, dim glow with hare brighter core. Lower left (N1373) is a very small, roundish, uniformly lit, <u>very</u> dim glow.
NGC 556 NGC 555 NGC 554	7:40 PM	17mm – N556 is a very small, thin, <u>very</u> faint edge on with hare brighter core. Below and near is N554, a very small, round, <u>very</u> faint, uniformly lit glow. Then below and a bit farther away than first 2 are close is an extremely faint, small, smudge of light of N554.
H11 MGC-04-04-009 MGC-04-04-010	7:46 PM	17mm – MGC4-4-9 is a medium sized, very faint long fat oval. Has hint of a small core. Then above it and near is M4-4-10, a <u>very</u> small, round, smudge of light.
H4 MGC-04-02-018 MGC-04-02-019	7:50 PM	17mm – M4-2-18 is a very small, thin oval with a small brighter core. <u>Very</u> faint. Then to right and near is M4-2-19, a tiny smudge of light that pops into view once in a while.
NGC 144 NGC 142 NGC 143	7:52 PM	17mm – N144 is top left galaxy and is a very small, thin, <u>very</u> faint, uniformly lit glow. To right and below is N142, a very small, round, uniformly lit, <u>very</u> faint glow. Then below and to left is N143, a <u>very faint</u> , uniformly lit, roundish glow.
NGC 235 NGC 232	7:54 PM	17mm – 2 galaxies close together. Lower right is N235, a thin, very faint edge on with small, brighter core. Upper left is N232, a very small, round, very faint (same magnitude as N235) glow with hare brighter core.

41 degrees. Seeing and Transparency very good.

NGC 191 NGC 191A	7:58 PM	17mm – 2 galaxies very close together. Upper right (N191A) is a tiny, thin, <u>very</u> faint glow with hare brighter, tiny core. Lower left (N191) is a very small, round, with hit of a tiny, hare brighter core.
H6 PGC 2353 PGC 2350 PGC 2351	8:01 PM	17mm – A hint of an <u>extremely faint</u> , ghostly, tiny glow in area where this is supposed to be.
H3 PGC 2045	8:04 PM	13mm – 195x – Pan around area and see an extremely faint, ghostly, small oval glow that my eye follows as I move FOV around.
NGC 329 NGC 327	8:07 PM	17mm – 2 galaxies very close together. Both are the same. Small, thin, <u>very</u> dim, uniformly lit, linear glows. N329 is on the right.
NGC 426 NGC 429 NGC 430	8:10 PM	17mm – Top galaxy (N430) is a <u>very</u> small, <u>very</u> faint, linear, thin glow with hare brighter stellar core. Lower left (N429) is a <u>very</u> small oval, <u>very</u> faint with hare brighter stellar core. Lower right (N426) is a round, <u>very</u> small, <u>very</u> faint with brighter stellar core.
NGC 275 NGC 274 NGC 273	8:13 PM	17mm – N273 is a small, thin, linear, uniformly lit glow. Has brighter field star on left hand side of glow. Then below and to left is N274, a <u>very</u> dim oval, uniformly lit glow. Then below and to left is N275, an <u>extremely faint</u> , tiny, round smudge of light.
NGC 145	8:15 PM	17mm – A small, round, very dim, uniformly lit glow.
NGC 1084	8:18 PM	17mm – A lens shaped, medium sized, brighter, uniformly lit glow. Has ears off each side.
NGC 1110	8:20 PM	17mm – A small, thin, <u>extremely faint</u> ghostly glow.

NGC 1108	8:22 PM	17mm – A <u>very</u> small, round, <u>extremely faint</u> glow.
NGC 309	8:24 PM	17mm – A larger, round, <u>very</u> faint, uniformly lit glow.
NGC 178	8:26 PM	17mm – A small, thin oval. <u>Very</u> dim. Uniformly lit.
NGC 237	8:28 PM	17mm – A very small, <u>very</u> faint, thin edge on with little brighter, larger core.
NGC 907	8:30 PM	17mm – A small, thin, cigar shaped, dim, uniformly lit glow.
NGC 947	8:32 PM	17mm – A small, <u>very</u> faint, round, uniformly lit glow.
NGC 1048 NGC 1048A NGC 1042 NGC 1035	8:34 PM	17mm – A large, round, <u>very</u> dim, uniformly lit glow. To right and near is N1042, a brighter, dim, lens shaped oval with large, brighter core. Above large round galaxy is a tiny, round glow, <u>extremely faint</u> , uniformly lit glow of N1048A. Then below and away is N1035, a small, dim, thin, linear, uniformly lit glow with dim field star on upper part of glow.
NGC 1069	8:41 PM	17mm – A <u>very</u> small, thin oval. <u>Very</u> faint.
NGC 988	8:43 PM	17mm – A <u>very</u> bright field star sits on top of a larger, <u>very</u> faint lens shape galaxy. Field star just a bit below center. Goes 8 – 2 oc.
NGC 985	8:46 PM	17mm – A very small, round, <u>very</u> faint glow with bright, stellar core in center.
NGC 755	8:49 PM	17mm – A small, <u>very</u> faint edge on. Larger, central bulge and short tapered, uniformly lit arms.
NGC 624	8:53 PM	17mm – A very small oval, <u>very</u> faint, uniformly lit glow. Has 2 faint field stars on top and bottom of glow.

NGC 1015	8:56 PM	17mm – A very small, dim, fat oval. Has large, brighter core and tiny bit of halo around it.
Seeing and Transparency very good. 46 degrees. Light wind from southeast.		
NGC 1016	8:59 PM	17mm – A very small, <u>very</u> faint halo around a larger, brighter, extended, linear core.
NGC 599	9:02 PM	17mm – A small, <u>very</u> faint, round glow with tiny, hare brighter core.
Eridanus Cluster	9:10 PM	13mm – John printed a picture of cluster for me. Midway in between 2 field stars is this tiny knot of 5-6 very faint stars seen with AV and a combined glow with DV. Nice.
NGC 1640	9:13 PM	17mm – A small, dim, tilted oval with larger, bright core that dims slowly to halo glow.
NGC 1521	9:18 PM	17mm – A small, dim, tilted oval with large, bright core that dims quickly to very dim, extended halo glow.
NGC 1518	9:18 PM	17mm – About 1 FOV to left of N1521 is a brighter, uniformly lit, thick, boxy glow. An edge on with a slight fatter central bulge above linear, boxy glow.
NGC 1179	9:22 PM	17mm – A larger, <u>extremely faint</u> , round, uniformly lit glow.
NGC 1482	9:24 PM	17mm – To upper left and near 2 brighter field stars is this very small oval, <u>very</u> dim glow with hare brighter, small core.
H26 PGC 12614 MGC-02-09-035	9:27 PM	17mm – A very small linear, <u>extremely faint</u> glow with 2 star like cores on glow.
H28 PGC 15136 PCG 15141	9:31 PM	17mm – P15136 is a dim oval, uniformly lit. Then above it and near is a tiny, round smudge of light of P15141.
NGC 1337	9:34 PM	17mm – A larger, long, fat, <u>very</u> dim edge on. Uniformly lit.

IC 347	9:36 PM	17mm – A very small tilted oval. Very dim. Has small, brighter core.
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NGC 1603 NGC 1606	9:39 PM	17mm – A very small, round, <u>very</u> dim glow with brighter, small core. The above and to right and near and in amongst 3 brighter field stars is N1606, a tiny, <u>very</u> faint, round glow.
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NGC 1329	9:43 PM	17mm – A small, <u>very</u> faint, fat oval to circular glow that has a tiny, hare brighter core.
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Seeing and transparency still very good. Light breeze from southeast. 48 degrees.

NGC 1301	9:47 PM	17mm – A <u>very</u> faint, linear, thin, uniformly lit glow. Small in size.
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PGC 13821	9:50 PM	17mm – A small, thin, dim edge on with larger, detailed core and tiny tapered arms off top and bottom.
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Comet Lovejoy in 8x50 nice coma and see a very faint, short tail with AV.

NGC 1394 NGC 1391 NGC 1393 NGC 1383	9:57 PM	17mm – N1391 is a very small, tilted oval, <u>very</u> dim with larger, brighter core. Then above and to right is N1393, a very small, <u>very</u> faint oval with hare brighter core. Below and to right and near is N1394, a <u>very</u> small, circular, <u>very</u> faint glow. Below and to right is N1383, a bigger, <u>very</u> faint, round, uniformly lit glow.
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NGC 1352 NGC 1359	10:01 PM	17mm – N1359 is a larger, round, brighter glow with large, bright core. Then near and above and to left is N1352, a bit smaller, round, brighter glow with large, bright core.
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NGC 1442 NGC 1458	10:09 PM	17mm – 2 galaxies on top of each other. Bottom fatter than top. Very small. 13mm shows maybe 2 hare brighter cores together with bit of separation. Definitely not round or oval in shape, but more tear dropped.
NGC 1455	10:13 PM	17mm – A very small tilted oval. Thin. Very dim with larger, brighter core.
NGC 1362	10:15 PM	17mm – A very small, <u>very</u> faint, circular glow with small, hare brighter core.
NGC 1370	10:17 PM	17mm – In between 2 dim field stars is this very small, very faint lens shaped, uniformly lit glow.
NGC 1482 NGC 1481	10:21 PM	17mm – N1482 is a <u>very</u> small, uniformly lit, <u>very</u> faint glow. Then below and to left is N1481, a tiny, round, extremely faint, uniformly lit glow.

45 degrees. Light wind from southeast. Seeing and Transparency very good.

NGC 1422	10:23 PM	17mm – A very small, <u>extremely faint</u> , thin, linear, uniformly lit glow.
PGC 13590	10:26 PM	17mm – To upper right of a bright field star and touching is a very small, very faint oval glow with small, brighter stellar core.
NGC 1377	10:28 PM	17mm – A very small, very dim, fat oval, uniformly lit glow.
IC 1953	10:30 PM	17mm – Below a bright field star is this small, circular, uniformly lit, very dim glow.
NGC 1331	10:33 PM	17mm – A dim, small, thin tilted oval with larger, bright core.
NGC 1325A	10:33 PM	17mm – Then right off tip of N1331 and near is this tiny, vertical oval, very faint, uniformly lit glow.
MGC-04-09-006	10:33 PM	17mm – Then above and to right and a bit away from N1331 is this tiny, round, <u>very</u> faint glow with a hare brighter core.

NGC 1319 NGC 1315 NGC 1325	10:38 PM	17mm – N1319 is touching a dim field star. It is a small, thin oval. Small. Uniformly lit, very dim. To upper right is N1325, a very faint, round, very small glow. A bit away to lower left is N1315, a tiny, <u>very</u> faint round glow.
NGC 1258 NGC 1226	10:43 PM	17mm – N1226 is a very small, <u>very</u> faint oval, uniformly lit glow. Then on the other side of a dim field star is N1258, a tiny, round, extremely faint, uniformly lit glow.
NGC 1403	10:47 PM	17mm – A small, dim, tilted oval with larger, brighter core.
NGC1416	10:49 PM	17mm – A small, very dim, thin oval with larger, bit brighter core.
NGC 1438	10:52 PM	17mm – A small, very dim thin oval, maybe edge on, with fatter middle. Has hare brighter core.
NGC 2641 NGC 2629	10:56 PM	17mm – N2629 is a <u>very</u> small, round, very faint glow. Then above and to right is N?2641, a very small, round, very faint glow that has a tiny, hare brighter core.
NGC 3653	11:36 PM	17mm – A very small, <u>very</u> faint oval with hare brighter core area.
NGC 2840	11:42 PM	17mm – A <u>very</u> small, extremely faint oval glow. Maybe hint of a tiny, hare brighter core.
NGC 2830 NGC 2832	11:46 PM	17mm – N2832 is a very small, round, very faint glow with hare brighter core. Then below and to right is N2830, a <u>very</u> small, thin sliver of extremely faint light.

NGC 3074	11:49 PM	17mm – A small, round, uniformly lit, <u>very</u> faint glow.
NGC 3099A NGC 3099B	11:52 PM	17mm – A small, round or fat oval, <u>extremely faint</u> , uniformly lit glow. Then above and to right and near is N3099B, a <u>very</u> small oval, <u>very</u> faint glow with brighter, linear core.
NGC 3068	11:54 PM	17mm – A very small, <u>very</u> faint, thin oval with hint of a core area.
NGC 3196	11:58 PM	17mm – A very small, <u>extremely faint</u> , ghostly oval glow.
Seeing and Transparency very good. 45 degrees. Light breeze from south.		
NGC 3216	12:01 AM	17mm – A small, <u>extremely faint</u> , round or fat oval, uniformly lit glow.
NGC 3088	12:03 AM	17mm – A very small, thin oval, extremely faint that has a hare brighter, larger core area.
NGC 3303	12:05 AM	17mm – An <u>extremely faint</u> , uniformly lit, thin oval glow. Very small.
NGC 3473	12:08 AM	17mm – A <u>very</u> small, round or fat oval, <u>extremely faint</u> , uniformly lit glow.
NGC 3649	12:11 AM	17mm – A large, fat oval. <u>Very</u> faint. Has small, bit brighter core on a uniformly lit halo glow.
NGC 3493 NGC 3504	12:14 AM	17mm – A small, round, <u>very</u> faint glow with tiny core. Then below and near is N3504, a small, thin, tilted oval, faint with larger, brighter core.
NGC 3527 NGC 3536	12:17 AM	17mm – A very small, round, <u>very faint</u> , uniformly lit glow. To right and near is a small, extremely faint, thin, linear, uniformly lit glow of N3536.

NGC 3552	12:19 AM	17mm – A <u>very</u> small, <u>extremely faint</u> , round glow with tiny, bit brighter core in center.
NGC 4025	12:26 AM	17mm – A larger, long, fat oval, <u>extremely faint</u> , ghostly glow.
NGC 3298	12:30 AM	17mm – A <u>very</u> small, <u>extremely faint</u> , round or fat oval, uniformly lit glow.
NGC 3188	12:35 AM	17mm – A small, <u>extremely faint</u> , round, ghostly glow.
NGC 3288	12:37 AM	17mm – A small fat oval, extremely faint, uniformly lit.
NGC 3392	12:39 AM	17mm – A small, fat, longer oval, <u>very</u> faint. Uniformly lit.
NGC 2641 NGC 2649	12:42 AM	17mm – A <u>very</u> small, <u>very faint</u> round, uniformly lit glow. Then above and to right is N2649, a thin edge on, very dim with larger, brighter core.
NGC 3543	12:46 AM	17mm – A <u>very</u> small, thin oval, <u>extremely faint</u> , uniformly lit, ghostly glow.
NGC 3589	12:52 AM	17mm – An <u>extremely faint</u> , round, small, ghostly smudge of light.
NGC 3671	12:55 AM	17mm – A <u>very</u> small, <u>extremely faint</u> , thin oval glow. Has a <u>very faint</u> stellar core and a bit brighter field star on glow to left of core.
NGC 3407	1:03 AM	17mm – A <u>very</u> small, very dim oval glow with tiny, hare brighter core.
NGC 3594	1:06 AM	17mm – A <u>very</u> small, thin oval, <u>extremely faint</u> , uniformly lit.
NGC 3794	1:08 AM	17mm – A small, <u>very</u> faint fat oval, uniformly lit. Has brighter field star on right hand side of glow at edge of glow.

NGC 3916	1:12 AM	17mm – A small, thin sliver of <u>extremely faint</u> light.
NGC 3913		To right and below is N3913, a <u>very</u> small oval, very faint with brighter, larger core.

NGC 3824	1:17 AM	17mm – N3824 is a <u>very</u> small, <u>very faint</u> thin oval that has a brighter, linear core that brightens in 2 places. To left and a bit away is N3829, a very small, round, <u>extremely faint</u> , uniformly lit ghostly glow.
NGC 3829		

NGC 3931	1:22 AM	17mm – N931 is a very small, round, extremely faint, uniformly lit glow. Then below and to left and near is N3917, this large, lens shape galaxy, very dim, uniformly lit glow.
NGC 3917		

NGC 3924	1:25 AM	17mm – A very small, lens shaped, <u>very faint</u> glow. Has <u>very</u> faint core and a bit brighter field star is to right and in line with center of galaxy and near.
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NGC 3577	1:28 AM	17mm – A <u>very</u> small, roundish, <u>extremely faint</u> smudge of light. To upper right and near is N3583, a small, dim round glow with larger, uniformly lit core.
NGC 3583		

43 degrees. Seeing and Transparency good. Light wind from southwest.

NGC 4054	1:32 AM	17mm – A <u>very</u> small, <u>extremely faint</u> , thin oval with a hint of a core.
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NGC 4362	1:39 AM	17mm – A <u>very</u> small, <u>extremely faint</u> little oval with a hint of a tiny core. Then to right and near is N4364, a very small, faint glow with a small, brighter core.
NGC 4364		

NGC 3740	1:42 AM	17mm – A <u>very</u> small, extremely faint, uniformly lit oval glow.
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NGC 3978	1:49 AM	17mm – A very small, very faint oval glow. Has a tiny star core in center that pops into view once in a while.
NGC 4195	1:52 AM	17mm – A very small fat oval, <u>very faint</u> . Has a hare brighter, tiny core.
NGC 4199	1:56 AM	17mm – A <u>very</u> small, <u>extremely faint</u> , fat oval, uniformly lit, smudge of light.

NGC 4549 NGC 4547	1:58 AM	17mm – N4549 is a <u>very</u> small, thin, cigar shaped oval, uniformly lit, <u>extremely faint</u> . Then to right and near is N4547, an <u>extremely faint</u> , tiny, round ghostly smudge of light.
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Seeing OK to Poor low in south. Stars are fat.

NGC 3108	2:03 AM	17mm – A very small, faint oval with larger, brighter core.
NGC 3118	2:05 AM	17mm – A medium sized, long fat oval, <u>very faint</u> , uniformly lit.
PGC 29531	2:08 AM	17mm – A very small oval, faint, uniformly lit glow. Just above the horizon where seeing is poor.
PGC 29529	2:12 AM	17mm – A small, long, thin, uniformly lit, very dim glow.
PGC 31414	2:15 AM	17mm – A very small oval, uniformly lit faint glow.
PGC 31557	2:17 AM	17mm – A small, faint oval. Has a larger, brighter core and a bit brighter field star on right hand side of glow.

Seeing and Transparency OK.

NGC 3911	2:23 AM	17mm – A small, round, <u>extremely faint</u> ghostly smudge of light.
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2:30 AM. A brisk wind from south has started. Galaxies have disappeared. Bruce cannot find his brighter ones either. A great night. Time for bed.

Saturday January 17, 2015

Clear. Brisk wind from northeast. 68 degrees near sunset.

At sunset, light wind. Thin clouds high in south.

NGC 6949	7:19 PM	17mm – A small, round, very faint, uniformly lit glow.
NGC 7432	7:23 PM	17mm – A small, ghostly round smudge of light.
NGC 7659	7:27 PM	17mm – An <u>extremely faint</u> , round, ghostly smudge of light with a <u>very faint</u> , tiny core seen only with AV.
NGC 7647	7:32 PM	17mm – An <u>extremely faint</u> oval smudge of light. Barely there.
NGC 1367	7:37 PM	17mm – A round, dim glow. Larger center area brighter and tiny bit of dimmer halo to right (an arm). See a little comma shaped dust lane to left of arm. Hint of a stellar core. Halo above and to left also.
NGC 1459	7:39 PM	17mm – A small, tilted oval, very dim, uniformly lit.
MGC-04-09-050 PGC 13561	7:42 PM	17mm – A small lens shaped, <u>very</u> dim, uniformly lit glow. Then near and to right and above is P13561, a contrast that might be part of the galaxy.
NGC 1412	7:49 PM	17mm – A very small edge on. Dim. Has bright core in central bulge. Tiny dust lane bisects this. Goes 12-6 oc.

Seeing and transparency good. 52 degrees.

MGC-05-10-004	7:54 PM	17mm – An <u>extremely faint</u> lens shaped, uniformly lit, ghostly glow seen once in a while.
NGC 1292	7:57 PM	17mm – A medium sized, lens shaped edge on. Very dim. Pretty uniformly lit except see a hint of a larger core below center. Central bulge big on this one.

NGC 1302	8:00 PM	17mm – A medium sized tilted oval. Dim. Has large, brighter core that dims slowly. Above and below see <u>very faint</u> halo extending off core a bit. Nice.
NGC 1255	8:03 PM	17mm – A larger tilted oval. Dim. Has a hare brighter, larger core centered in a <u>very faint</u> , linear core. Nice.
NGC 1306	8:07 PM	17mm – A very small thin oval. Very dim. Has brighter, small core that makes it hard to see halo. Maybe a hint of a dust lane above core.
MGC-04-08-051 PGC 11924 PGC 11930	8:15 PM	17mm – A small, thin sliver of long and thin, <u>very faint</u> , and uniformly lit. Then above and near are 2 thin slivers of light, P11930 on left and P11924 on right, that are near each other and <u>extremely faint</u> .
NGC 1210 PGC 11538	8:22 PM	17mm - A very small, <u>very</u> dim, fat oval. Has larger, hare brighter core area with some details on core. Then above and a bit away is P11538, a larger, round, <u>extremely faint</u> , uniformly lit glow.
NGC 1288 IC 1892	8:30 PM	17mm – A <u>very</u> small, round, <u>very faint</u> glow. Has a hare brighter stellar core in center. Then above and to left of a faint field star is IC 1892, a smaller, round, <u>extremely faint</u> , uniformly lit glow.
MGC-04-08-056 PGC 12194	8:33 PM	17mm – A very small, thin, very dim oval. Has 2 distinct cores, <u>very</u> close together but separate. The cores are <u>very faint</u> .
IC 335	8:40 PM	17mm – A very small, thin edge on. Very dim. Has hare brighter core.
NGC 1419	8:51 PM	17mm – A <u>very</u> small thin oval. <u>Very faint</u> . Has brighter, linear core.
NGC 1291	8:54 PM	17mm – A larger tilted oval, brighter. Has larger, round bright core. Has field star on lower part of glow. Goes 12 – 6 oc.

NGC 1636 NGC 1614 MGC-02-12-057 PGC 15828	8:59 PM	17mm – N1636 is a <u>very</u> small, thin oval. Very faint. Has brighter, linear core. Then to right and near is P15828, a tiny, round, <u>very faint</u> glow with tiny, hare brighter core. Both just above a very bright field star. To left is N1614, an <u>extremely faint</u> , round, small smudge of light. Then below and new N1636 is M2-12-57, a very small, round, <u>very</u> faint, uniformly lit glow.
NGC 1625 NGC 1622 NGC 1618	9:06 PM	17mm - 3 galaxies form an arc about a bright field star. N1625 is the top galaxy, a thin, small, uniformly lit, very dim sliver. Has a dim field star on lower part of glow. Then below and to right is N1622, a very small, thin oval, very faint with small, hare brighter core. Then below and to left is N1618, a <u>very</u> small, <u>very faint</u> , round, uniformly lit glow.
H12 MGC-01-04-052 PGC 5439 PGC 5445	9:15 PM	17mm – Parts a, c and d are 3 <u>extremely faint</u> ghostly glows that form a triangle in center of FOV.
H13 MGC-01-05-002 NGC 600 NGC 615	9:21 PM	17mm – MGC-1-5-2 is a thin, tilted oval with a larger, brighter core. Then 1 FOV above and to right is N600, a larger, round, extremely faint, uniformly lit glow. Then to right and 1 more FOV away is N615, another dim, edge on with larger, brighter core.
H14 MGC-01-06-020 (a) MGC-01-06-022 (b) MGC-01-06-017 (d)	9:27 PM	17mm – (a) is a very dim, vertical, <u>very</u> small sliver of very faint light. In same FOV and on right is (b), a fat oval, very small, very faint with hare brighter core. Then above this one and to right and a bit away is (d), a <u>very</u> small, round, <u>extremely faint</u> glow.
PGC 16790	9:39 PM	17mm – A long, thin, <u>extremely faint</u> , small in size, ghostly diffused glow. Has hare brighter core. Just above a dim field star.
NGC 1294	9:50 PM	17mm – A very small, thin oval. <u>Very faint</u> . Has a brighter field star on right had side of glow and maybe a tiny star core to left of field star.

Seeing and Transparency OK. 38 degrees.

NGC 1235	9:53 PM	17mm – A <u>very</u> small, very faint edge on or thin tilted oval. Has a tiny, hare brighter core.
NGC 1167 MGC-06-07-023	9:59 PM	17mm – N1167 is a small, tilted fat oval. Very dim. Has larger, hare brighter core. Then below and to right is M6-7-23, a small, round, <u>extremely faint</u> , diffused ghostly glow.
NGC 1138	10:04 PM	17mm – A tiny fat oval, with a brighter core and <u>very faint</u> halo around it.
NGC 1171	10:11 PM	17mm – A very small, thin oval. Very dim. Uniformly lit.
NGC 1177	10:13 PM	17mm – A very small, thin edge on. Very faint. Has hare brighter core on center of tiny tapered arms, 2:30 – 7:30 oc.
NGC 1160 NGC 1161	10:16 PM	17mm – A <u>very</u> small fat oval. Very dim. Has tiny, hare brighter core. Then below and to left is N1161, a small, thin, uniformly lit, very dim lens shaped smudge of light.
NGC 1250 PGC 12038 PGC 12152 PGC 12171 PGC 12185	10:20 PM	17mm – A <u>very</u> small, fat oval, <u>very faint</u> . Has a hare brighter core. Then above is P12038, a <u>very</u> small, edge on, <u>very faint</u> . Has hare brighter core. Then below and to right and close are 3 tiny, thin slivers of <u>very faint</u> light. All 3 look the same. P12152 is on left, P12171 is in middle and P12185 is on right.
Abell 426 NGC 1281 NGC 1277 NGC 1275 NGC 1271 NGC 1260	10:25 PM NGC 1283 NGC 1282 NGC 1272 NGC 1264 NGC 1259	17mm – N1271 is a <u>very</u> small oval, very dim glow. N1281, 1277, 1275, 1283, 1260 are small ovals, <u>very</u> dim. N1271 is brighter and has brighter, small core. N1282, 1259, 1264 are <u>very</u> faint, uniformly lit smudges of light.

NGC 2661	10:50 PM	17mm – A small, round, <u>extremely faint</u> ghostly smudge of light.
NGC 2802 NGC 2803	10:56 PM	17mm – 2 <u>very</u> small, round, extremely faint glows, very close together but not touching. Both have tiny star cores.
NGC 2843	11:01 PM	17mm – An <u>extremely faint</u> , small, thin cigar shaped, uniformly lit ghostly glow that popped into view once.

Seeing and Transparency is OK to Poor. 33 degrees.

NGC 2329 UGC 3696 MGC+08-13-072	11:43 PM	17mm – A very small, fat oval, dim. Has brighter core. To lower left and near is U3696, a very small, roundish, dim, uniformly lit glow. M8-13-72 is an extremely faint, stellar dot for a core. No halo seen.
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NGC 3122 NGC 3110	11:56 PM	17mm – A small, dim, tilted oval. Has brighter field star on lower part, just off galaxy. Has hint of a hare brighter, linear core in center. Then to lower left and on center line of galaxy is N3110, a tiny, round, extremely faint, uniformly lit glow.
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The 30" f/4.5 is now available. Using the 17mm (202x) eyepiece the rest of the night.

NGC 2628	12:41 AM	17mm – A small, fat oval, dim, uniformly lit glow.
NGC 2743	12:44 AM	17mm – A small tilted oval, very dim, uniformly lit.
NGC 2796	12:46 AM	17mm – A <u>very</u> small, round, very faint glow with a larger, brighter core.
NGC 2679	12:50 AM	17mm – A very small, fat oval has brighter, knotted, linear core. Faint.

NGC 2554	12:52 AM	17mm – Small, fat oval, very dim. Has larger, brighter core.
NGC 2512	12:55 AM	17mm – A small, <u>very</u> faint, fat oval with 2-3 dots forming a linear core.
NGC 2595	12:58 AM	17mm – A tiny oval, very faint. Has brighter, tiny core. Above and to right of bright field star.
NGC 2582 PGC 23630	1:03 AM	17mm – A small, very faint fat oval with tiny, brighter core. Maybe a second linear galaxy (P23630) at top and almost touching. Very faint, long, thin.
NGC 2558	1:06 AM	17mm – A very small, thin oval with a larger, brighter core.
NGC 2530	1:09 AM	17mm – A <u>very</u> small, roundish, <u>extremely faint</u> , uniformly lit glow.
NGC 2843	1:20 AM	17mm – An <u>extremely faint</u> , fat, long ghostly glow with tiny, faint star core. Need to thump scope to reveal it.
NGC 3983	1:25 AM	17mm – A very small, thin oval, very dim. Has brighter linear core.
NGC 4003 NGC 4002	1:25 AM	17mm – A very small, very faint oval. Has tiny, hare brighter core. Then below and to left is N4002, a very small, thin edge on with thin arms and hare brighter central core.
NGC 3875 NGC 3873 PGC 3886 PGC 3862	1:32 AM	17mm – N3873 is a very small, thin oval, <u>very faint</u> with a hare brighter core. Then to right is P3886, a tiny, thin, uniformly lit, <u>extremely faint</u> sliver of light. Then above is P3862, a tiny, extremely faint ghostly, round, smudge of light. Below is N3875, a small, round, uniformly lit, <u>extremely faint</u> ghostly glow.

NGC 3645	1:41 AM	17mm – A medium sized, fat oval, with tapered arms, extremely faint ghostly glow, uniformly lit. Only see it if thump scope. Then below it is N3644, a small, fat, long oval. Extremely faint ghostly glow. Again revealed with thumps.
NGC 3644		

NGC 3679	1:45 AM	17mm – An <u>extremely faint</u> , medium sized, thin, longer oval, uniformly lit. Has stellar core. Thumps reveals it.
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NGC 4675	1:50 AM	17mm – A thin, tilted oval, small, very dim. Has brighter, linear core. Then above and to left is N4669, a very faint, small, long, thin edge on with hare brighter core.
NGC 4669		

Seeing and Transparency Fair.

NGC 4695	1:56 AM	17mm – An <u>extremely faint</u> , small, thin oval, uniformly lit. Then to right is N4686, a thin tilted oval, dim, small. Has larger, brighter core. Then on left and above is P4675, an <u>extremely faint</u> , thin ghostly sliver of light.
NGC 4686		
PGC 4675		

NGC 4801	2:09 AM	17mm – A medium sized, fat, long oval, <u>extremely faint</u> . Only see it appear with thumps. Uniformly lit. Then to right is P44641, a dim star and when thump scope, see very faint halo around it a tiny bit.
PGC 44641		

NGC 4732	2:17 AM	17mm – A small, round, <u>extremely faint</u> glow, uniformly lit. Seen when thump and it pops into view.
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NGC 4967	2:23 AM	17mm – Bottom (N4973) is small, round, <u>very faint</u> , uniformly lit glow. Middle (N4967) bit larger, round, uniformly lit, very faint. Left (P45255) is small oval, very faint with hare brighter core. P45277 is a round, <u>extremely faint</u> halo with tiny, hare brighter core in center. P45281, P45299 and P45228 are tiny smudges of light.
NGC 4973		
PGC 45255	PGC 45281	
PGC 45277	PGC 45228	
PGC 45299		

NGC 5163	2:32 AM	17mm – A tiny oval, uniformly lit, <u>very faint</u> . To 4 oc of and very near a dim field star.
NGC 5113 PGC 46263 NGC 5109	2:35 AM	17mm – N5109 is a small, very faint, tilted oval with faint, small core. Then above is P46263, an extremely faint, small, thin sliver of light. Then below and to left is N5113, a very small, round uniformly lit smudge of light.
NGC 5164 MGC+09-22-074	2:41 AM	17mm – A small, round, very faint, uniformly lit glow that pops in when thump scope. Then below and to right is M9-22-74, a very faint, fat oval, uniformly lit, see when thump.
NGC 5294 PGC 48880 PGC 48801	2:46 AM	17mm – P48801 is a very small, round, uniformly lit, <u>extremely faint</u> glow. Then to upper right are 2 galaxies together but not touching. Upper (N5294) is a tiny, round, very faint with hare brighter core and bottom (P48880) is a bit bigger, round, with hare brighter core. Faint also.
NGC 5255	2:52 AM	17mm – An extremely faint, small, round, uniformly lit glow. With thumps it pops into view.
NGC 5540 MGC+10-20-088 MGC+10-20-089 PGC 50884	2:56 AM	17mm – M10-20-89 is a very small, round, <u>extremely faint</u> , uniformly lit glow. To upper left is N5540, is a tiny, round smudge of light. Then above this and to left is P50884, a tiny, thin, <u>extremely faint</u> , sliver of light. Then to upper right of this is M10-20-88, a tiny, round, uniformly lit, <u>very faint</u> glow.
NGC 5484	3:00 AM	17mm – An <u>extremely faint</u> , medium sized, fat oval, elongated. Constant thump reveals it.
NGC 4025	3:06 AM	17mm – An <u>extremely faint</u> , thin, round glow. See with thump and it pops in.

NGC 3662	3:12 AM	17mm – A tiny, dim galaxy with bright, larger core and 2 tiny ears off 1 and 7 oc side. Looks like an out of focus star.
NGC 3509 PGC 33461 PGC 33569	3:17 AM	17mm – P33461 is a <u>very</u> dim, thin oval, uniformly lit, medium sized. Then above and to left and at an angle with the first is N3509, a small, thin, very faint. Looks like a star ship together. Then near and to lower left of these two is a very thin needle, <u>extremely faint</u> glow of P33569.
NGC 3535 PGC 33777	3:24 AM	17mm – P33777 is a small, thin, tilted oval with pointed ends. Then to upper right and near is N3535, a <u>very faint</u> , round glow. Has larger, brighter core.
NGC 3567 PGC 34013	3:29 AM	17mm – A long, thin, very faint, small glow. Has 2-3 stars on glow, one to upper left and two to lower right. Could be another galaxy (P34013) on top of this one for it looks a bit weird.
NGC 3425 NGC 3388	3:34 AM	17mm – A small, fat, boxy, uniformly lit, <u>very faint</u> glow. Best seen with AV. Then to left is N3388, a very small, tilted, thin (edge on?) oval with small, brighter core. 1 st galaxy has faint field star on lower left of glow and right near edge at 8 oc.
NGC 3342	3:40 AM	17mm – An <u>extremely faint</u> ghostly, uniformly lit, fat oval. Revealed with thumping. Has dim field star at 5 oc on glow. Looks like crab nebula.
NGC 3345	3:45 AM	17mm – A large, dim, tilted oval with larger, round brighter core. Looks like a Messier object, yet it is in the 30”.
Seeing and Transparency OK.		
NGC 2948	3:55 AM	17mm – An <u>extremely faint</u> , very small, uniformly lit oval glow. Seen with thumping.

NGC 2939	4:01 AM	17mm – A small, long, thin, <u>extremely faint</u> , cigar shaped, uniformly lit glow. Seen with thumping.
NGC 2984	4:06 AM	17mm – A small, fat oval, <u>extremely faint</u> , uniformly lit. Seen with thumping.
NGC 3080 IC 585	4:10 AM	17mm – A large, fat, tilted oval. <u>Extremely faint</u> . Seen with thumping. Has small, brighter core and uniformly lit halo around it. Then to right is IC 585, a very small, fat oval, uniformly lit, <u>extremely faint</u> .
NGC 3060	4:16 AM	17mm – A small, very dim, tilted oval. Has small, bright core.
NGC 3248 PGC 30818	4:22 AM	17mm – A very small, <u>very faint</u> , thin oval. Hint of a hare brighter core. Then above and to left and near is P30818, an <u>extremely faint</u> , thin, uniformly lit oval.
NGC 3270	4:26 AM	17mm – An <u>extremely faint</u> , small, boxy, uniformly lit glow. Seen with thumping.

33 degrees. Seeing and Transparency OK.

NGC 3327 PGC 31917 PGC 32065	4:33 AM	17mm – A small, fat oval. <u>Extremely faint</u> . Seen with thumping. Uniformly lit. Seen with AV. Then below and to right and near is a very small, round, faint, uniformly lit glow of P31917. Then below this and to right and very near is P32065, another very small, round, faint, uniformly lit glow.
NGC 3475	4:43 AM	17mm – An <u>extremely faint</u> , small, oval, uniformly lit glow. Seen with thumping and AV.
NGC 6158	4:48 AM	17mm – Nice thin oval. <u>Extremely faint</u> , small, uniformly lit. Seen with DV and better with thumping and AV.

Swung the 30" to see:

M13 Awesome in 30.

M51 Awesome, lots of spiral arm details. Never seen it better.

M63 Nice. Large. Bright.

M104 Incredible. Nice dust land. Spans $\frac{3}{4}$ FOV. Nice.

Was an incredible night. Spent it with Doug Tebo from Arlington, TX. His sharp eyes helped me find many of the galaxies in the FOV that I was having trouble first seeing. The 30" is a nice scope. Can see faint objects even though the sky might not be all that favorable. Was in bed by 6:05 AM.

Sunday January 18, 2015

62 degrees at sunset. Calm to light breeze from southwest. Thin clouds overhead but weather loop says they will be gone by 9 PM.

Used the 30" tonight with 17mm eyepiece yielding 202x.

Comet Lovejoy	7:04 PM	In Bruce's 20". Nice, large coma. Fills FOV of 20", 20mm eyepiece (127x). Tail goes off at 10 oc and is approx. 5 FOV long. See thicker part near coma and tail streams farther away. Nucleus very small, oblong and bright.
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NGC 7342	7:43 PM	17mm – A <u>very</u> small, thin, <u>extremely faint</u> oval. To lower right of a dim field star. Hint of a tiny, hare brighter core.
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52 degrees. Seeing and transparency OK. Clearing with some patchy clouds.

NGC 7432	7:47 PM	17mm – A <u>very</u> small, round, <u>extremely faint</u> glow. Has tiny, brighter core. Faint field star just below it and almost touching making it hard to see core.
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NGC 7659	7:49 PM	17mm – A very small, thin oval. Very faint. Has brighter, linear core.
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NGC 7647	7:51 PM	17mm – A <u>very</u> small, <u>extremely faint</u> , round ghostly, uniformly lit smudge of light.
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NGC 7681	7:53 PM	17mm – A very small, very faint, tilted oval. Has larger, brighter core.
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NGC 7685	7:57 PM	17mm – A medium sized, long, fat oval, uniformly lit, <u>extremely faint</u> . Seen with thumping. It is a smudge of light.
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NGC 7797	8:01 PM	17mm – A <u>very</u> small, edge on with bright stellar core. See very short arms off 10 – 4 oc.
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NGC 12	8:05 PM	17mm – A small, fat oval, almost round. <u>Extremely faint</u> , uniformly lit glow. Maybe hint of a tiny, hare brighter core in center of glow.
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NGC 36	8:06 PM	17mm – A <u>very faint</u> , medium sized, tilted oval with larger, bit brighter core.
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NGC 213	8:10 PM	17mm – A small, thin oval. Has a small, bit brighter core. Very dim. Has brighter field star to right of core and on halo glow.
NGC 459	8:14 PM	17mm – A larger, thin, long, uniformly lit, <u>extremely faint</u> sliver of light. Almost not there.
NGC 296 NGC 295	8:17 PM	17mm – N295 is a small, thin, uniformly lit, <u>extremely faint</u> oval. Then below it and to left is N296, a bit smaller, thin oval, uniformly lit, <u>extremely faint</u> smudge of light.
NGC 7760	8:19 PM	17mm – An <u>extremely faint</u> , almost not there, medium sized, long, thin, uniformly lit sliver of light.
NGC 7773	8:22 PM	17mm – A <u>very</u> small, round or fat oval, uniformly lit, extremely faint.
NGC 7805 NGC 7806	8:23 PM	17mm – 2 galaxies very close. Upper left (N7805) is a bit bigger. A very faint, round glow with bit brighter core. Then below and to right is N7806, a bit smaller, round, very faint glow and it too has a tiny, hare brighter core.
NGC 13	8:26 PM	17mm – A very small edge on. Faint. Has larger, brighter core and tiny arms at 11:30 – 4:30 oc.
NGC 29	8:28 PM	17mm – A small, very dim, tilted oval, uniformly lit. Has <u>very</u> faint field star on left hand side of glow.
NGC 39	8:30 PM	17mm – A small, dim, tilted oval with larger, brighter core that is complex because I see some details of varying brightness in core.
NGC 7436	8:32 PM	17mm – A small, very dim fat oval. Has bit brighter, small core.
NGC 7321	8:34 PM	17mm – Looking into part of roll off wall. A small, uniformly lit, very dim tilted oval.

NGC 7454	8:41 PM	17mm – A small, very faint tilted oval with small, hare brighter core.
NGC 7711	8:44 PM	17mm – A fat oval or round, very faint glow with larger, brighter core.
NGC 7691	8:47 PM	17mm – A <u>very</u> small, <u>very faint</u> , thin oval glow with brighter field star on lower part of glow. Goes 10-4 oc.
NGC 7794	8:48 PM	17mm – A very small, <u>very faint</u> tilted oval.
NGC 7778 NGC 7779 NGC 7780 NGC 7782	8:52 PM	17mm – 4 galaxies. Bottom (N7780) is a small, thin oval, very faint with a hint of a small, hare brighter core. Upper right (N7782) is a very small, round, uniformly lit, <u>very faint</u> glow. To left and above and near is N7779, a fat oval, very faint, with small, bit brighter core. To left and above and near is N7778, a <u>very</u> small, round, extremely faint, uniformly lit glow.
NGC 7816	8:55 PM	17mm – A medium sized tilted oval. Long. Uniformly lit. <u>Extremely faint</u> .
NGC 137	9:03 PM	17mm – A small, very faint, fat oval with larger, hare brighter core.
NGC 180	9:06 PM	17mm – A small tilted oval, very faint. See speckling on glow of something here. Brighter field star on left hand side of glow.
NGC 257	9:09 PM	17mm – A medium sized tilted oval. Very dim. Has larger, brighter core that dims slowly into halo glow.
48 degrees. Seeing and Transparency OK. These galaxies are right in the zodiacal light which I can see in the FOV and destroys any contrast in this part of the sky.		
NGC 532	9:12 PM	17mm – A larger, long, thin edge on with small, brighter core in center. <u>Very faint</u> .
NGC 251	9:15 PM	17mm – A small, round, uniformly lit, very dim glow.

NGC 52	9:16 PM	17mm – A small, thin, long, extremely faint, uniformly lit glow.
NGC 280	9:19 PM	17mm – A small, very dim oval. Has hint of a core and brighter field star on right hand side of glow.
NGC 233	9:21 PM	17mm – A small, round, dim glow. Seems textured on glow. There is a hint of an <u>extremely faint</u> , larger halo off 2 oc to right. Then this is the core area of galaxy which is large. Nice.
NGC 794	9:25 PM	17mm – A dim, fat oval or round. Has larger, bright core complex. Very small.
NGC 695	9:28 PM	17mm – A larger, ½ FOV long edge on with large, dim core that dims slowly to very dim, long halo arms. Arm to right (goes 9-3 oc) dims quickly but goes on for a bit of <u>extremely faint</u> glow.
NGC 924	9:31 PM	17mm – A very small, dim, thin tilted oval with larger, brighter core.
NGC 932 NGC 938	9:32 PM	17mm – N938 is a very small, round, dim glow with larger, brighter core. Then to left and a bit away is N932, a <u>very</u> small tilted oval, very dim. Has hare brighter small core.
NGC 1030	9:36 PM	17mm – A medium sized, thin tilted oval, uniformly lit, <u>very faint</u> .
NGC 1024 NGC 1029	9:38 PM	17mm – N1029 is top right is a very small, dim oval with bright core. Lower left is N1024, a very small, dim tilted oval with small, bright core.
NGC 990	9:40 PM	17mm – A very small, dim oval with small, brighter core.
NGC 781	9:44 PM	17mm – A very small, thin edge on. Dim. Has larger, hare brighter core and thin tapered arms 11:30 – 4:30 oc.

NGC 774	9:53 PM	17mm - A very small oval. Very faint glow with hint of a core.
NGC 780	9:54 PM	17mm – A very small, <u>very faint</u> oval, uniformly lit glow. Has 2 very faint field stars to right, 1 below and 1 above and very near glow.
NGC 807	9:57 PM	17mm – A <u>very</u> small, fat oval or round, very dim glow. Has larger, brighter core. Most of what is seen is core. It dims slowly to halo.
NGC 735	9:59 PM	17mm – A very small, thin sliver of uniformly lit, very faint light. A faint field star on left hand side of glow beacons my eye to it. Uniformly lit overall.
NGC 614 NGC 608	10:02 PM	17mm – A very small, round, very faint glow with hint of a stellar core. Then above and to left is N608, a <u>very</u> small, <u>very</u> faint, thin oval glow with tiny, hare brighter core.
NGC 515	10:04 PM	17mm – A very small, very dim oval. With AV, see a brighter, linear core on glow.
NGC 515 NGC 496	10:06 PM	17mm – Upper right is N515, a very small, very faint round glow with small, brighter core. Then to lower left if N496, a <u>very</u> small, very faint oval with hint of a hare brighter core area.
NGC 407 NGC 410 NGC 414	10:10 PM	17mm – N410 is a very small, fat oval or round, very faint. Has hare brighter small core. To right is N407, a <u>very</u> small, round, uniformly lit, extremely faint smudge of light. To upper left is N414, a <u>very</u> small, thin oval with tiny, hare brighter core that is extremely faint.
NGC 898	10:20 PM	17mm – A <u>very</u> small, thin oval. <u>Very faint</u> . Has a small, hare brighter core that pops into view once in a while.
NGC 477	10:22 PM	17mm – A very small, <u>very faint</u> tilted oval with tiny, hare brighter core.

47 degrees. Nice night. Great trip to 3RF. 4 nights of observing.

Swung 30" around to see M31, M32, M110, M33 and several of its HII regions in arms. A 30" sure makes these big and easy to see.

10:35 PM HII Regions seen in M33

NGC 604 is nice and bright.

NGC 595 is a small, brighter glow in arm.

NGC 592 is a dim glow

NGC 588 is a small, dim glow in arm.

Then Bruce and I looked at M81, M82, M97 and M107.

To align Argo Navis and setup 30":

- Roll off roof and chain 1 wheel to rain to keep it from closing if wind kicks up.
- Plug in cables to controller (black is connector on far right as looking at AN from front) and power on.
- Site Polaris and center in eyepiece and hit ENTER for Ref Align... choice.
- Pick an ALIGN STAR in NW, center and hit ENTER.
- Pick a second ALIGN STAR in SE and hit ENTER.
- Select MODE CATALOG, Select Messier, NGC, etc and hit ENTER.
- Use Dial to enter NGC # and hit ENTER.
- How to move scope appears.
- After seeing object, hit EXIT and hit ENTER for MODE CATALOG.
- Select NGC and hit ENTER.
- Then repeat Use Dial...