Globular Clusters

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(includes all known globulars in the Milky Way above declination of -50°)

by Alvin Huey

www.faintfuzzies.com

Last updated: March 31, 2009

Other books by Alvin H. Huey

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The Abell Planetary Observer's Guide

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All Maps by MegaStar™ v5

All DSS images (Digital Sky Survey) http://archive.stsci.edu/dss/acknowledging.html

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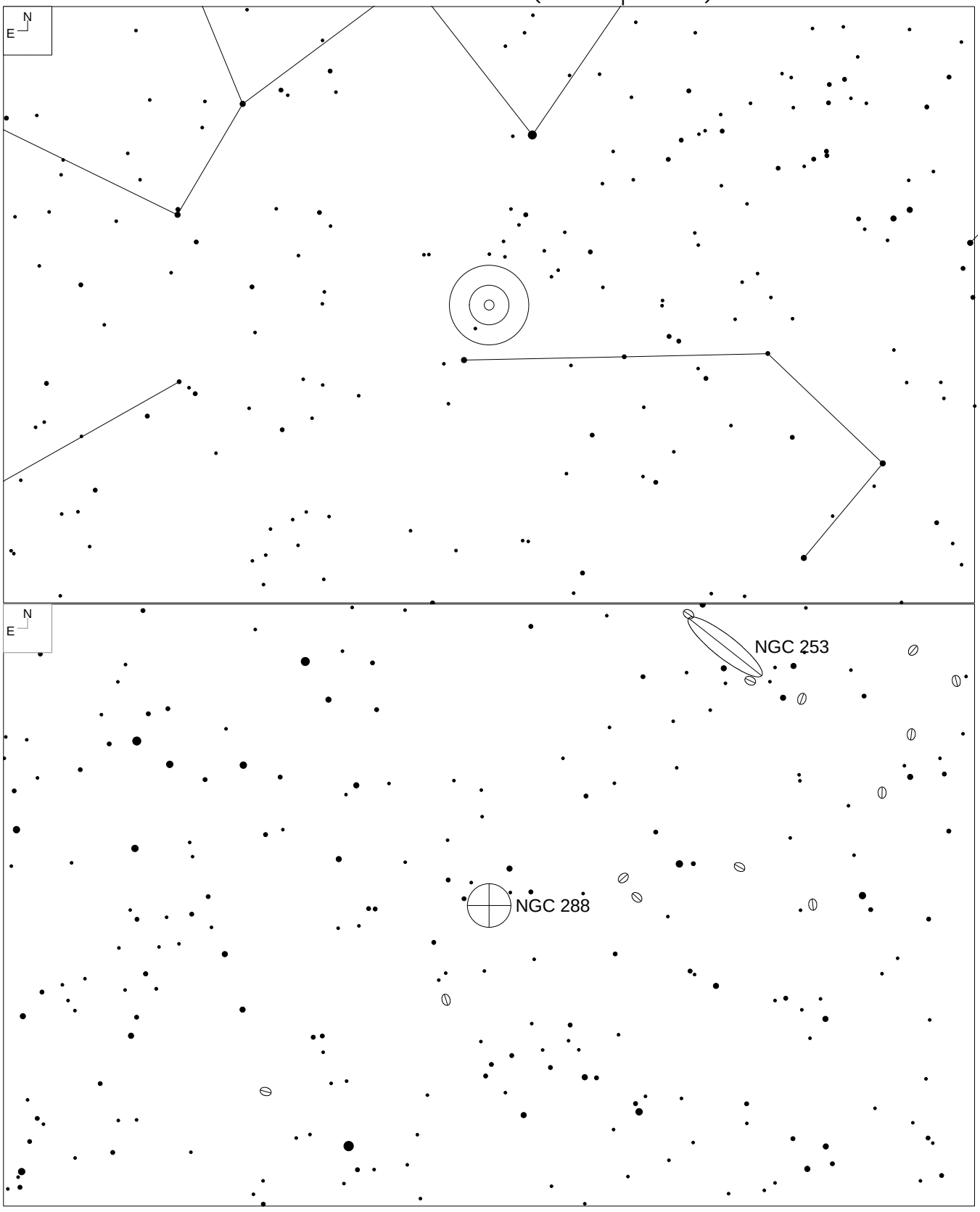
Atlas of the Milky Way's Globular Clusters above Dec -50°

Some notes of the charts:

1. Finder field is generally 4.8º x 3.0º, otherwise noted
2. Limiting Stellar magnitude is set to 11.0
3. Circles are 1 degree in diameter, if provided
4. Squares designate the DSS image, if provided
5. Palomar and Terzan clusters are towards the end, pages 75 to 97.
6. Four Planetary nebulae of globular clusters are provided at the very end, pages 98 to 101
7. Index is provided at the end by page number and by object name, pages 102 to 109.
8. The table provided at the end of the page contains the following data;
   RA and **Dec** – coordinates in 2000 coordinates
   V_{mag} – Visual magnitude
   HB_{mag} – V magnitude of the horizontal branch of the globular cluster. This is the magnitude where large number of stars become visible, indicates being resolved.
   $Bt*_{mag}$ – V magnitude of the brightest star
   SB – Surface brightness in V magnitude per square arc-minute
   Size – in arc-minutes

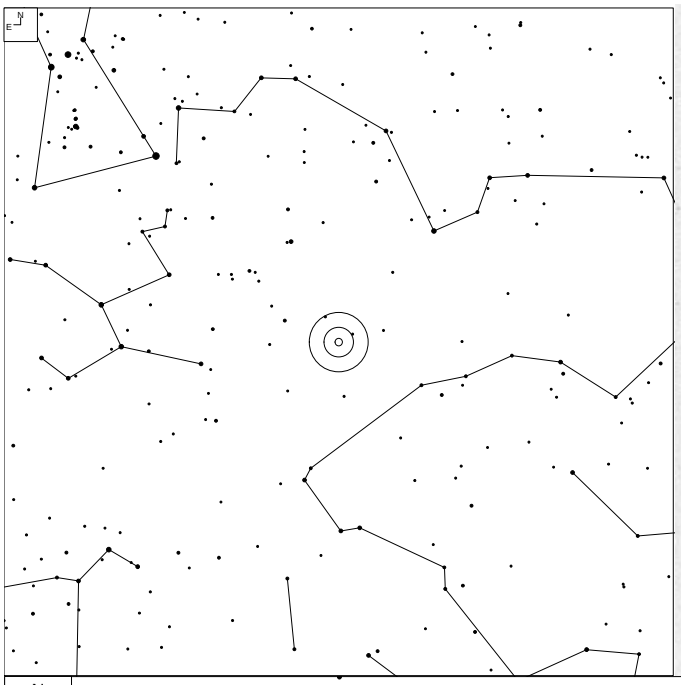
   Source data is from Archinal and Hynes

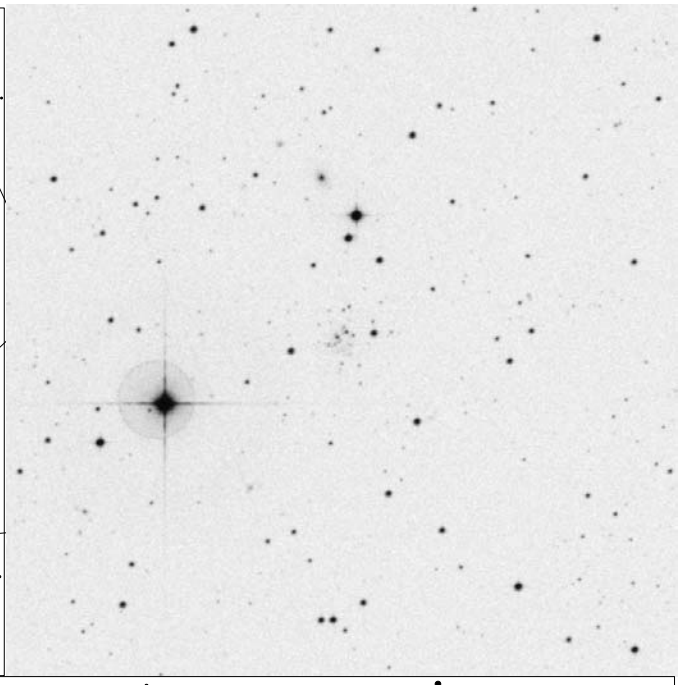
NGC 288 (Sculptor)

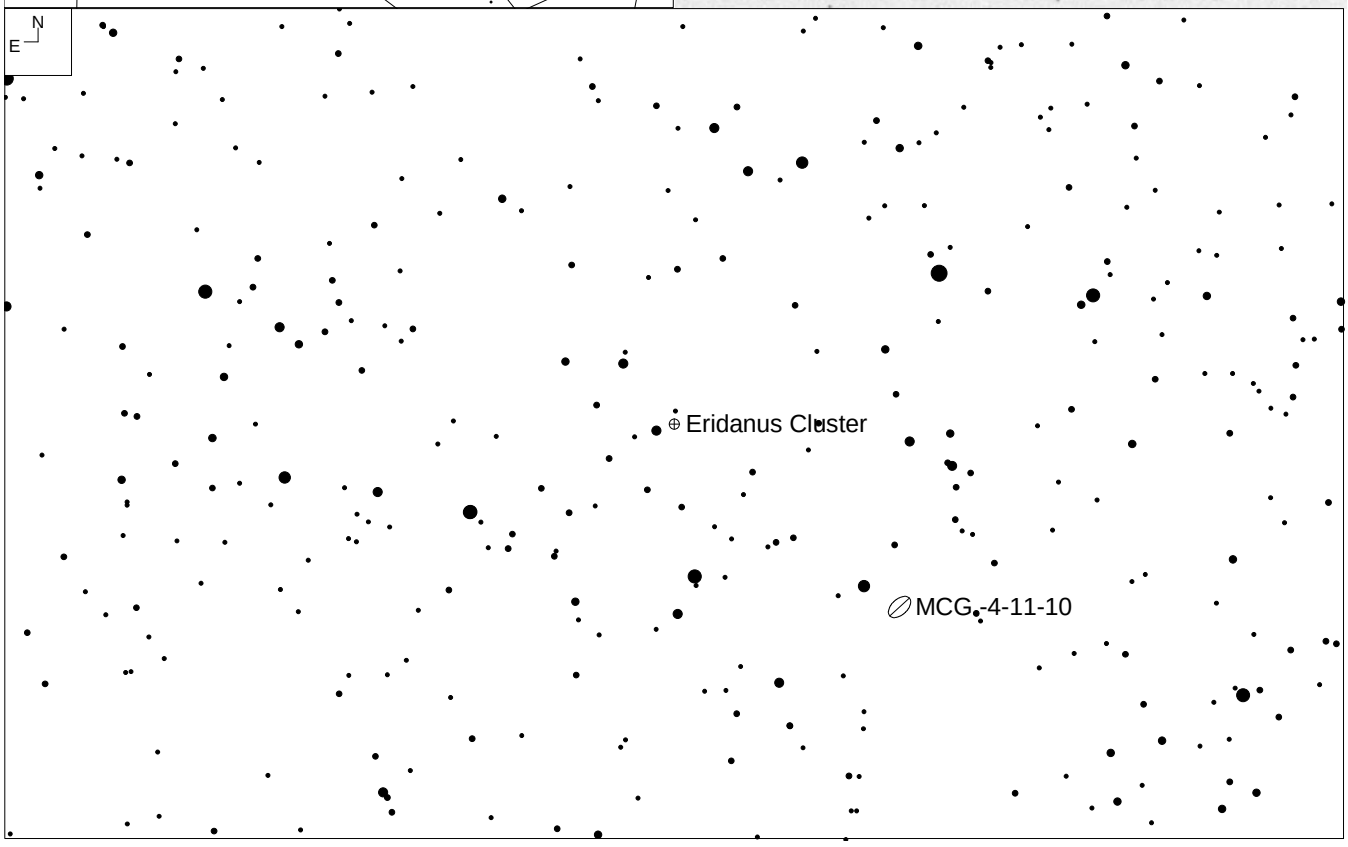


RA	Dec	V_{mag}	HB_{Mag}	$Bt*_{Mag}$	SB	Size (‘)
00 52 45.5	-26 34 51	8.1	15.3	12.6	13.7	13

Eridanus Cluster

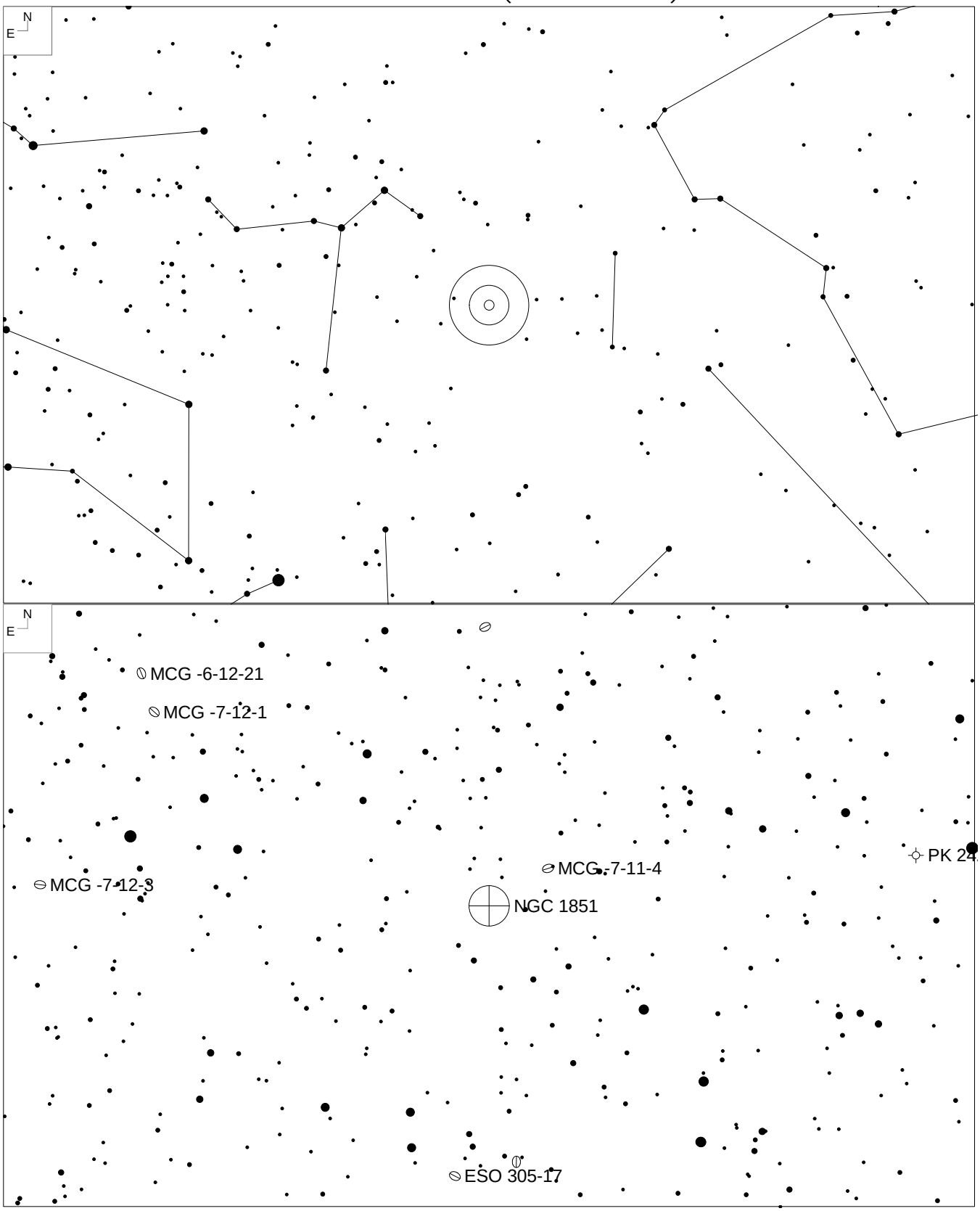






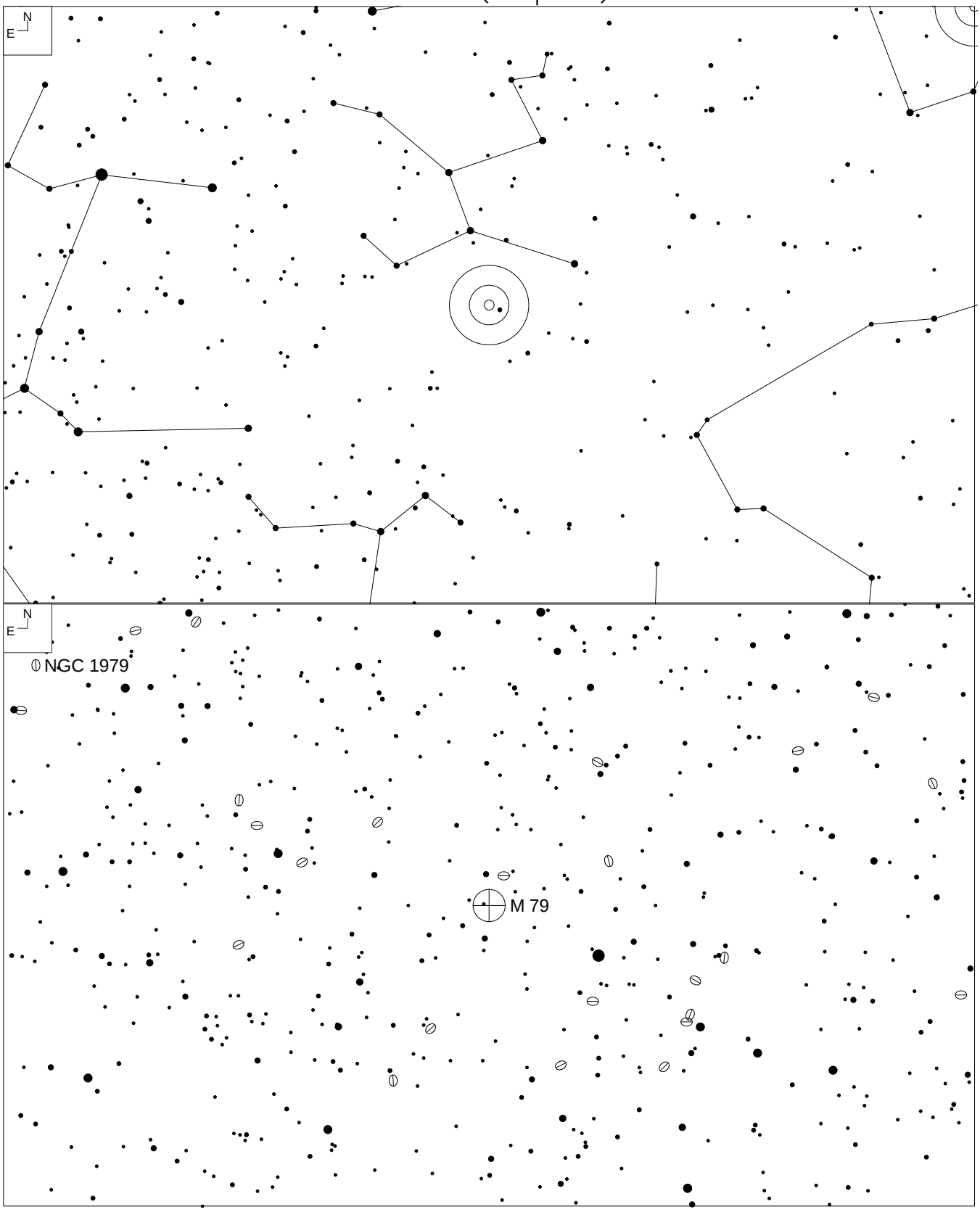
RA	Dec	V_{mag}	HB_{Mag}	Bt^*_{Mag}	SB	Size (‘)
04 24 44.5	-21 11 13	14.7	20.4	17.6	-	-

NGC 1851 (Columba)



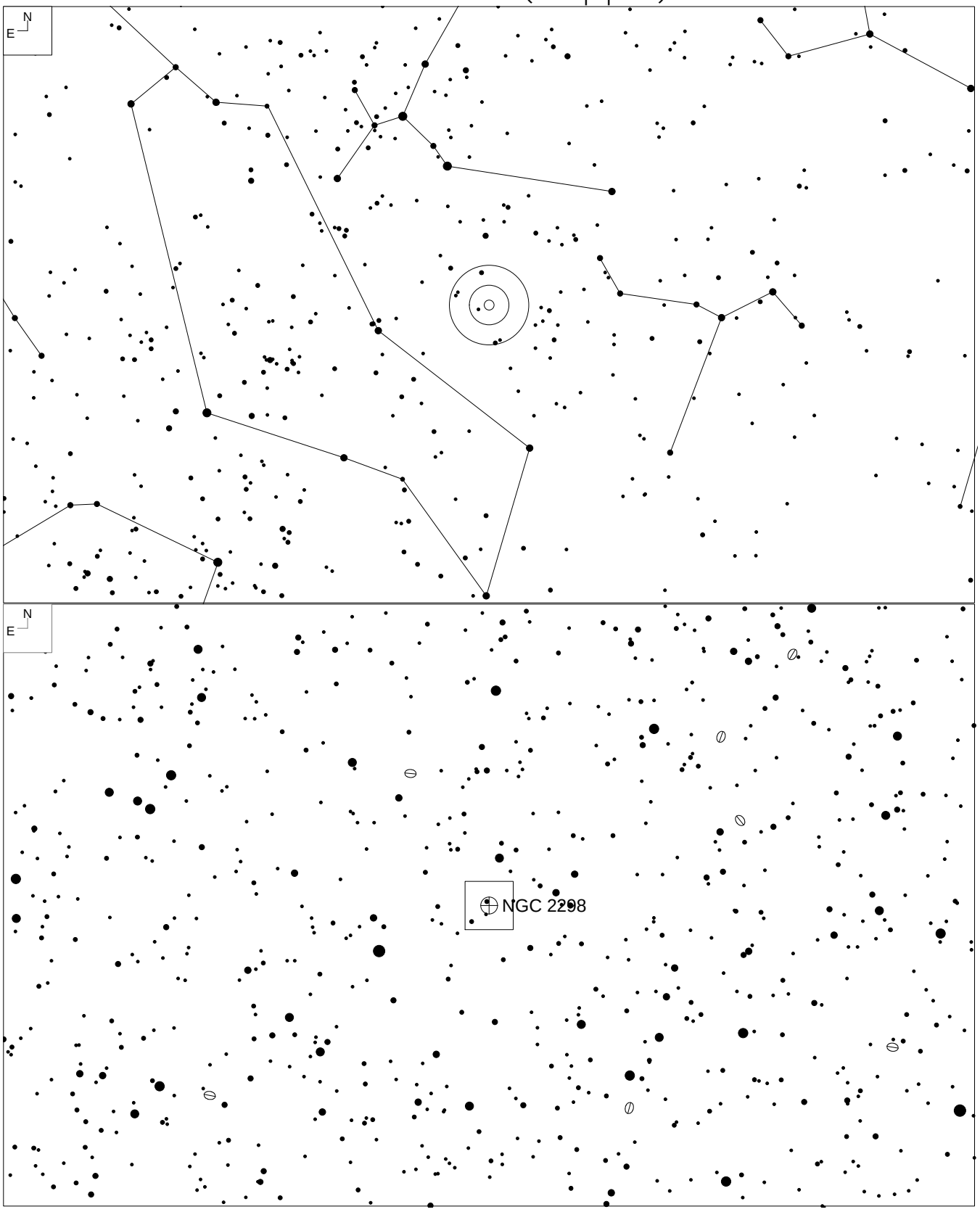
RA	Dec	V_{mag}	HB_{Mag}	Bt^*_{Mag}	SB	Size (‘)
05 14 06.3	-40 02 50	7.1	16.1	13.2	12.5	12

M79 (Lepus)



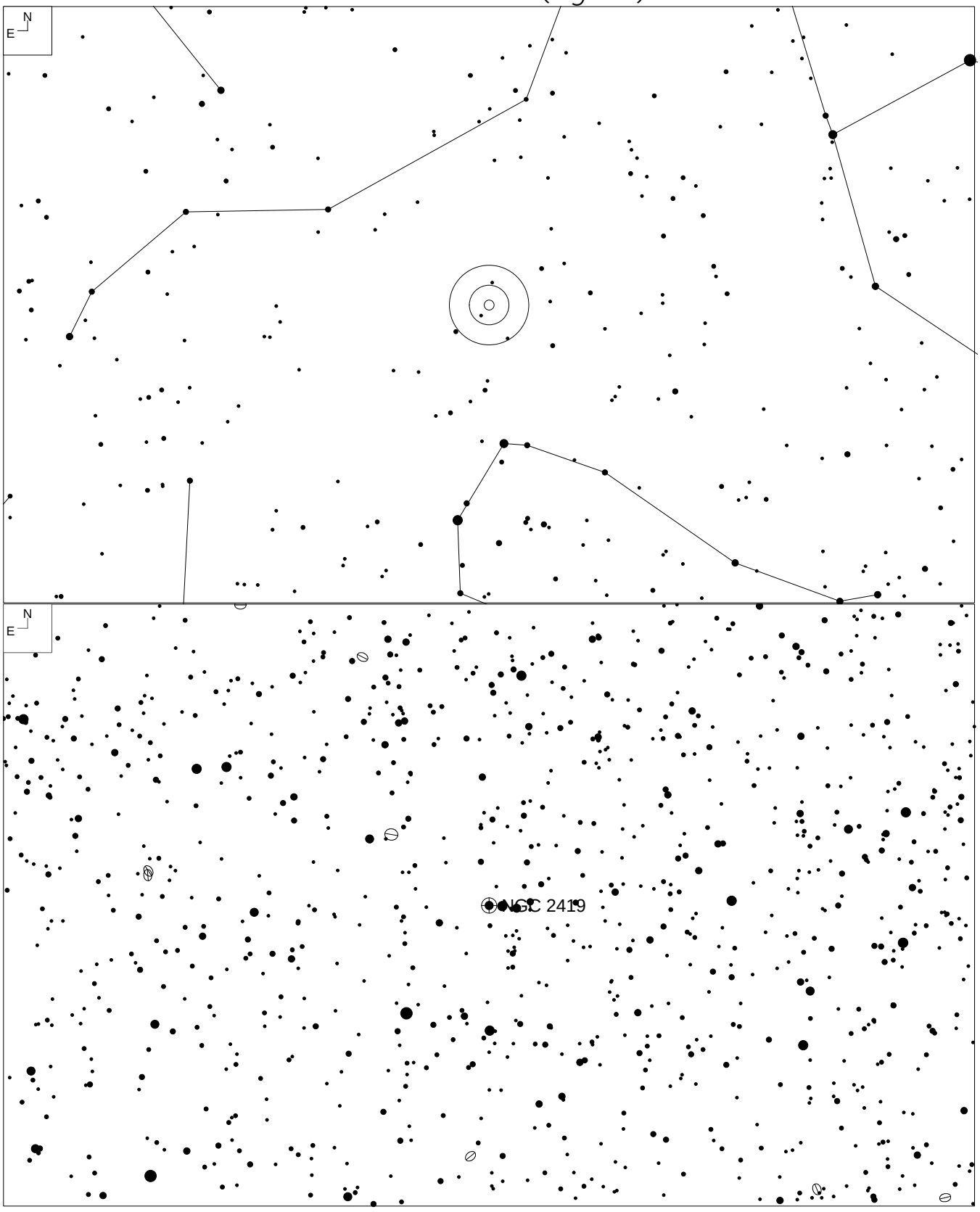
RA	Dec	V_{mag}	HB_{Mag}	Bt^*_{Mag}	SB	Size (‘)
05 24 10.6	-24 31 27	7.7	16.2	13.1	12.6	9.6

NGC 2298 (Puppis)



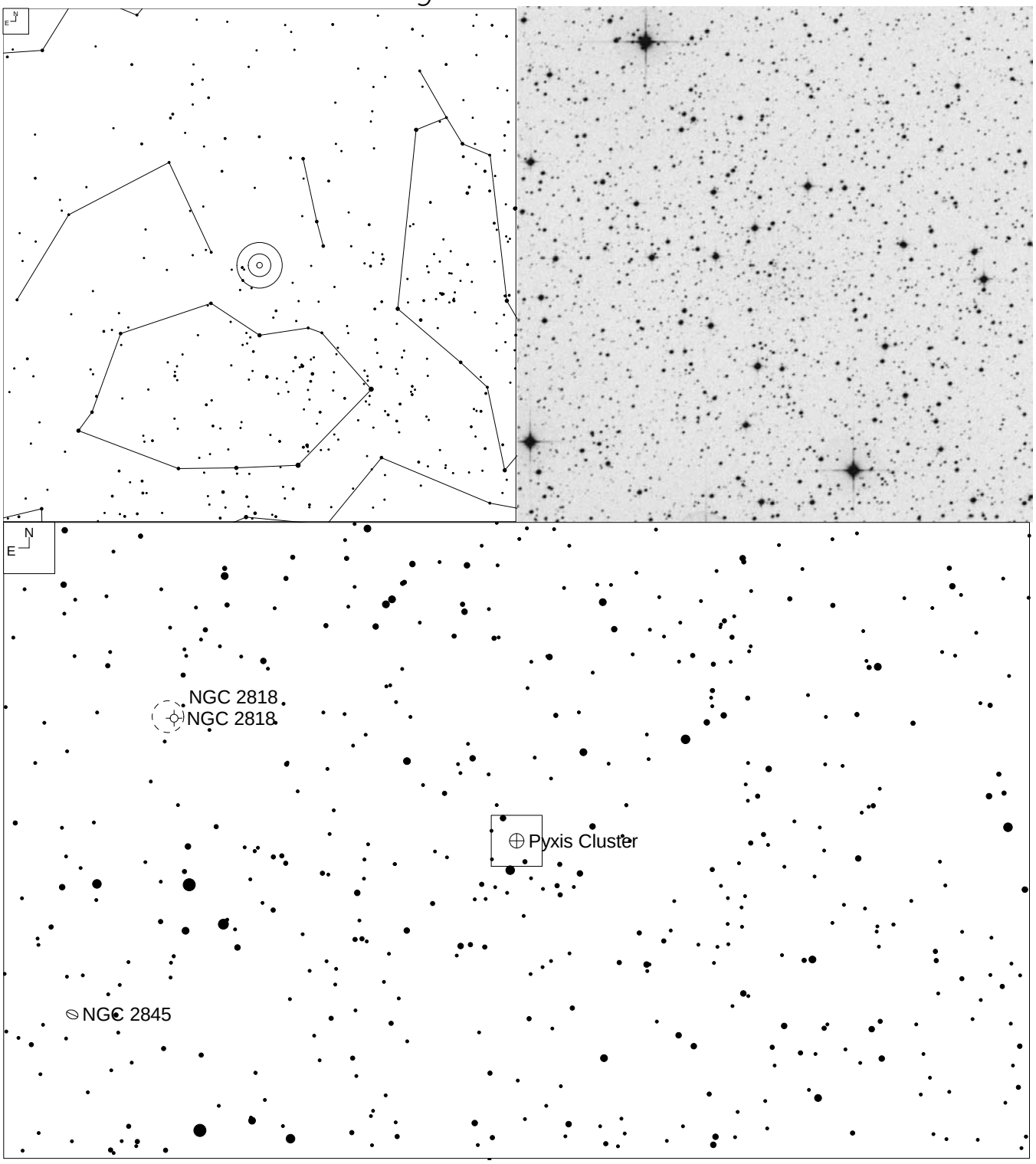
RA	Dec	V_{mag}	HB_{Mag}	Bt^*_{Mag}	SB	Size (‘)
06 48 59.2	-36 00 19	9.3	16.2	13.4	12.8	5

NGC 2419 (Lynx)



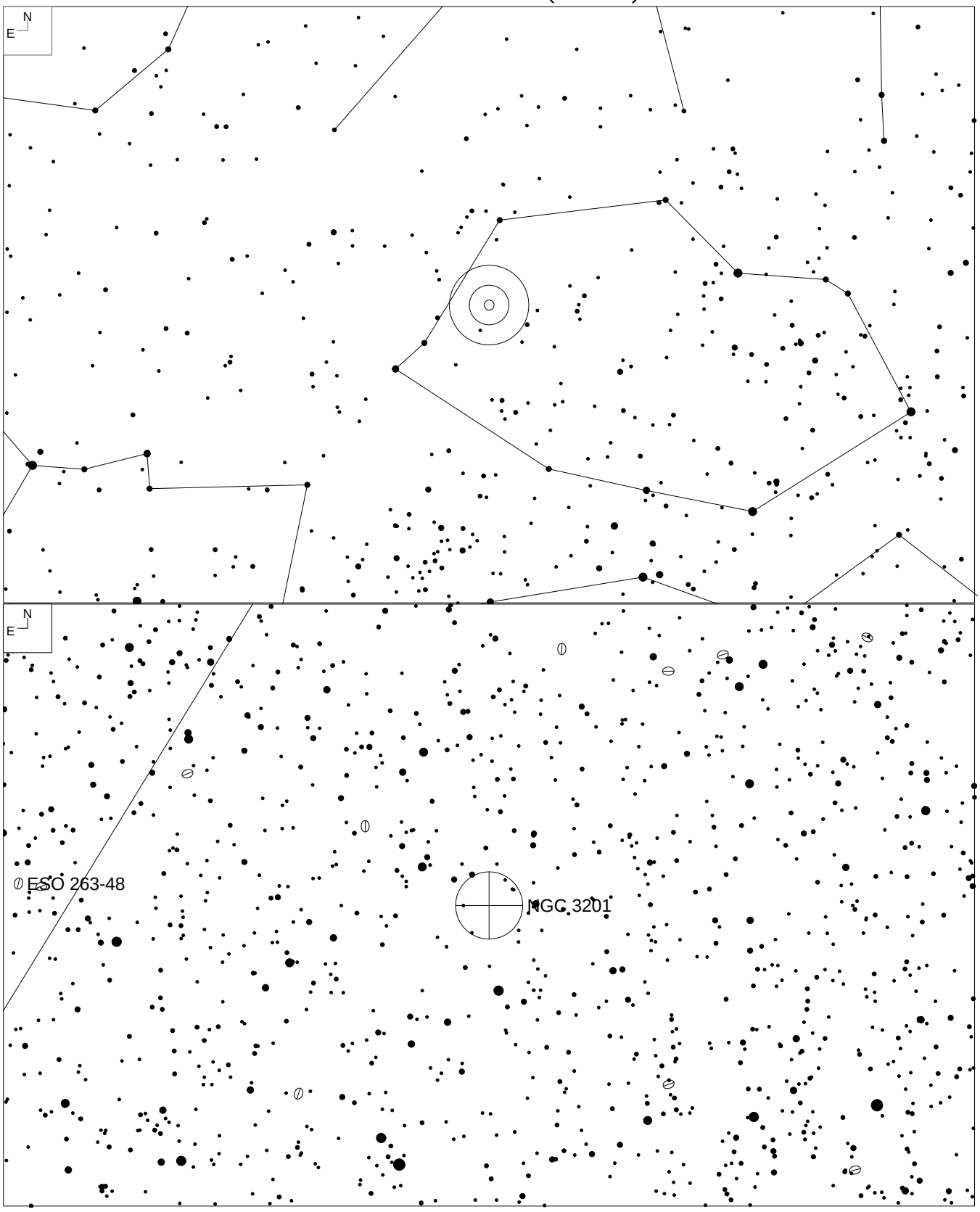
RA	Dec	V_{mag}	HB_{Mag}	Bt^*_{Mag}	SB	Size (‘)
07 38 08.5	+38 52 55	10.3	20.2	17.3	13.6	4.6

Pyxis Cluster



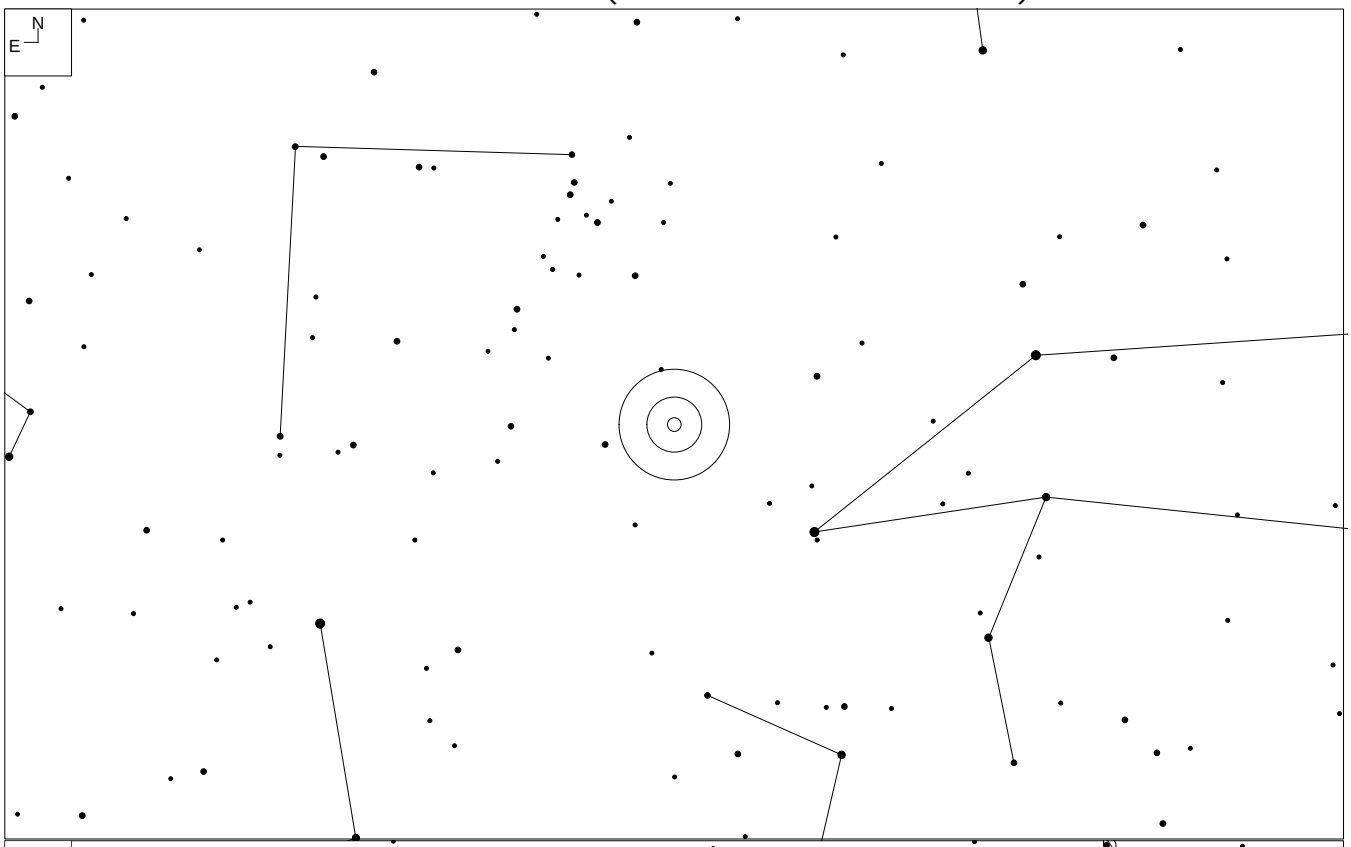
RA	Dec	V_{mag}	HB_{Mag}	$Bt*_{Mag}$	SB	Size (')
09 07 57.8	-37 13 17	12.9	18.7	15.2	15.9	4

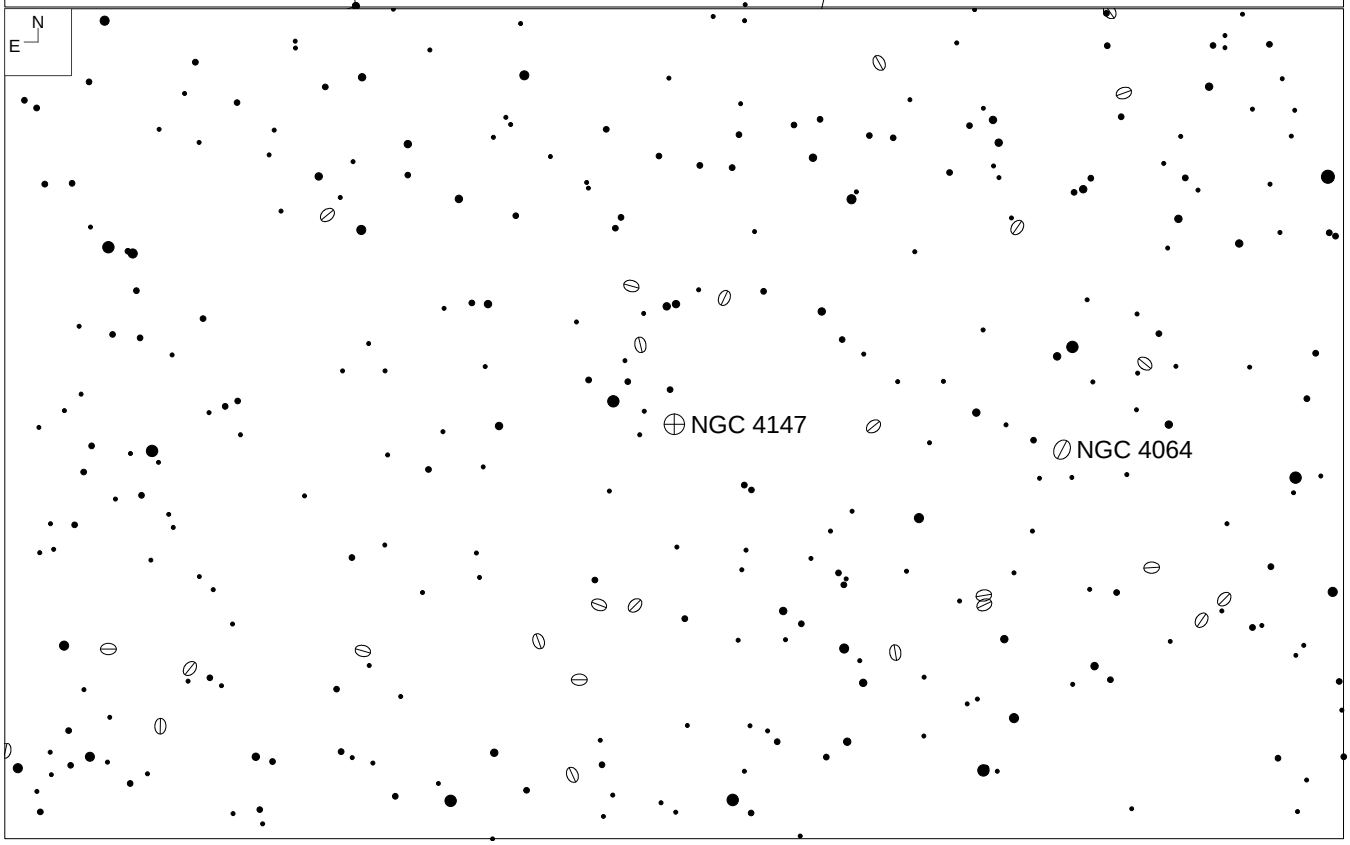
NGC 3201 (Vela)



RA	Dec	V_{mag}	HB_{Mag}	Bt^*_{Mag}	SB	Size (‘)
10 17 36.8	-46 24 40	6.9	14.8	11.7	13.4	20

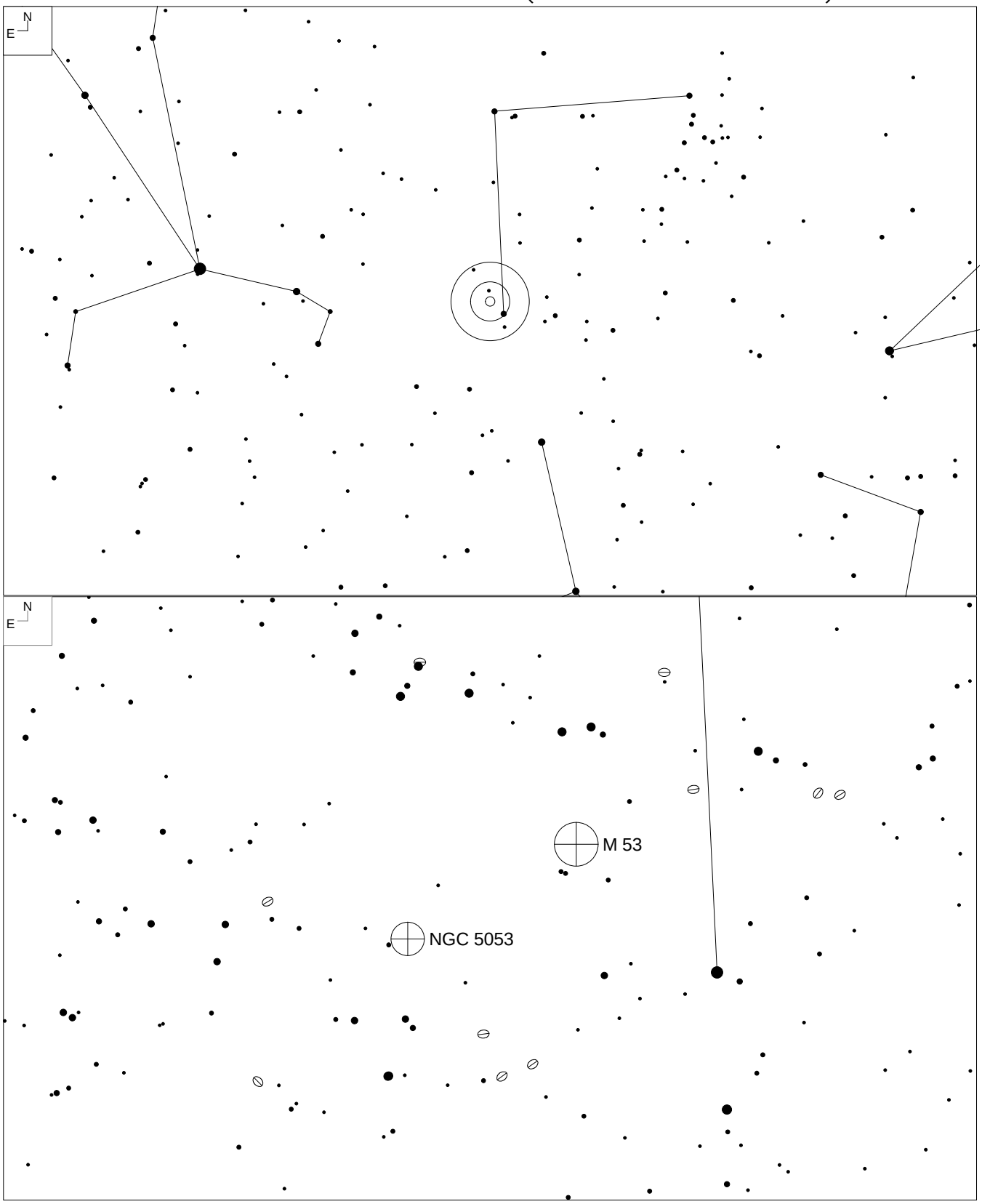
NGC 4147 (Coma Berenices)





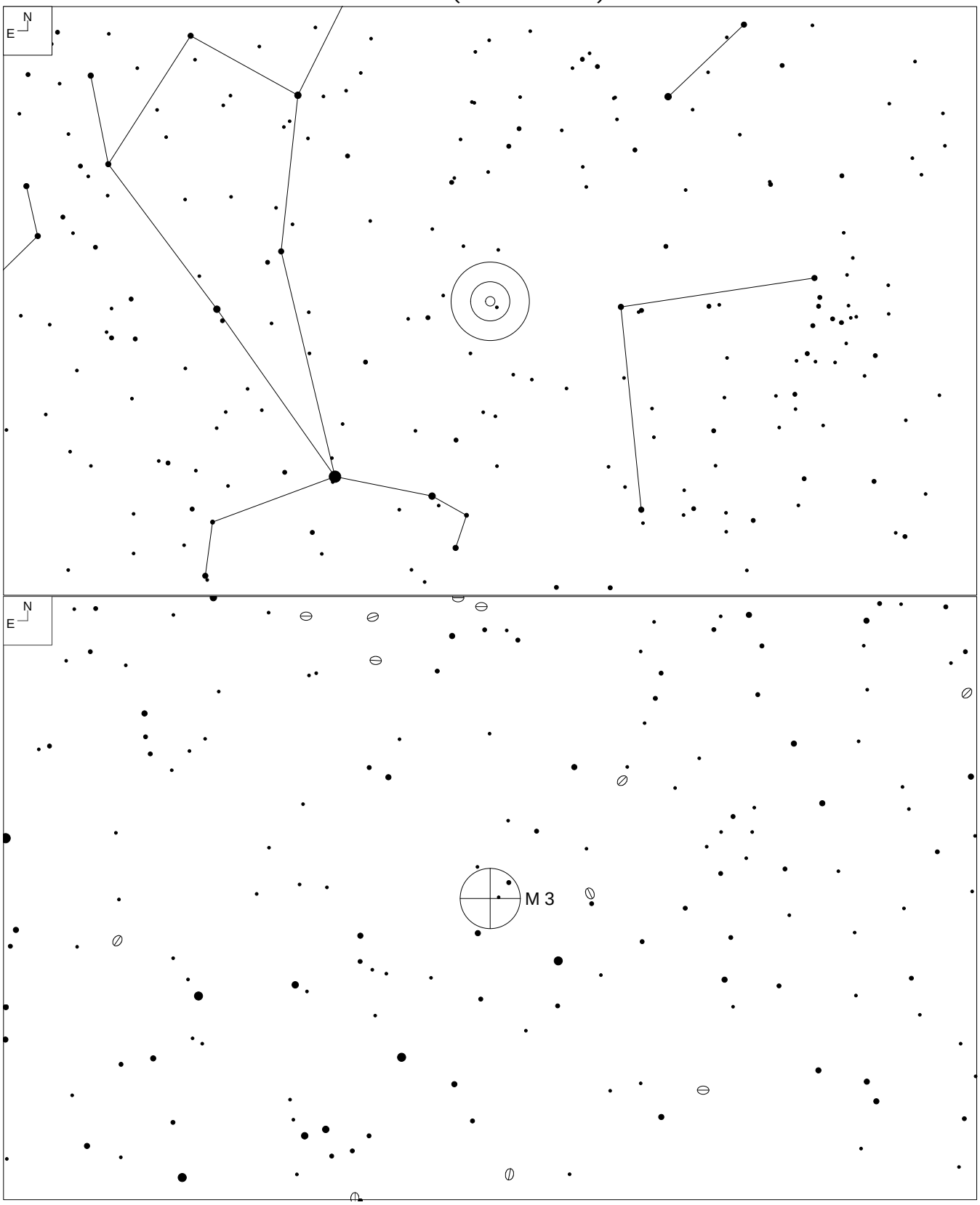
RA	Dec	V_{mag}	HB_{Mag}	Bt^*_{Mag}	SB	Size (')
12 50 34.5	-09 27 47	10.4	16.9	14.5	13.6	4.4

M53 and NGC 5053 (Coma Berenices)



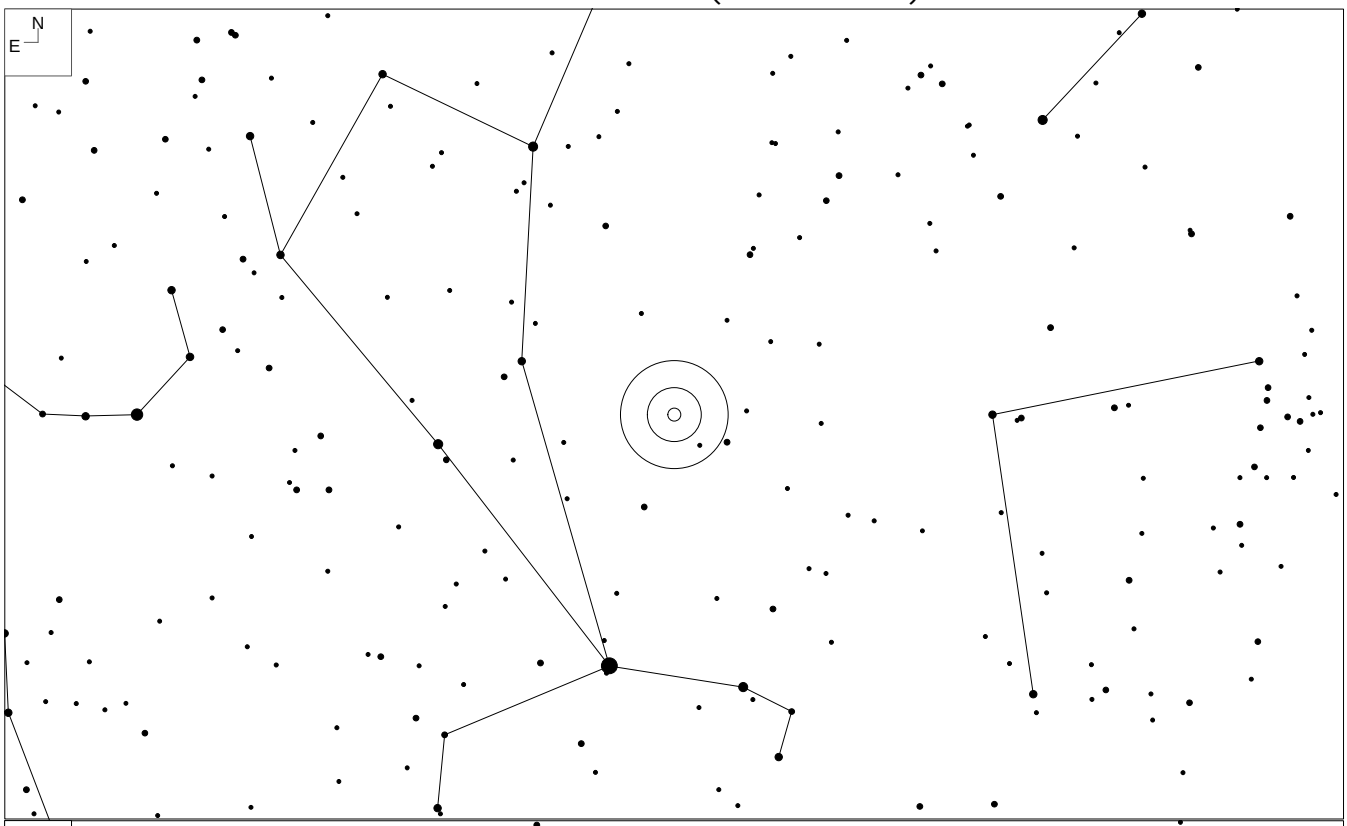
	RA	Dec	V_{mag}	HB_{Mag}	Bt^*_{Mag}	SB	Size (')
M53	13 12 55.3	+18 10 09	7.7	16.9	13.8	13.3	13
NGC 5053	13 16 27.0	+17 41 53	9	16.7	13.8	14	10

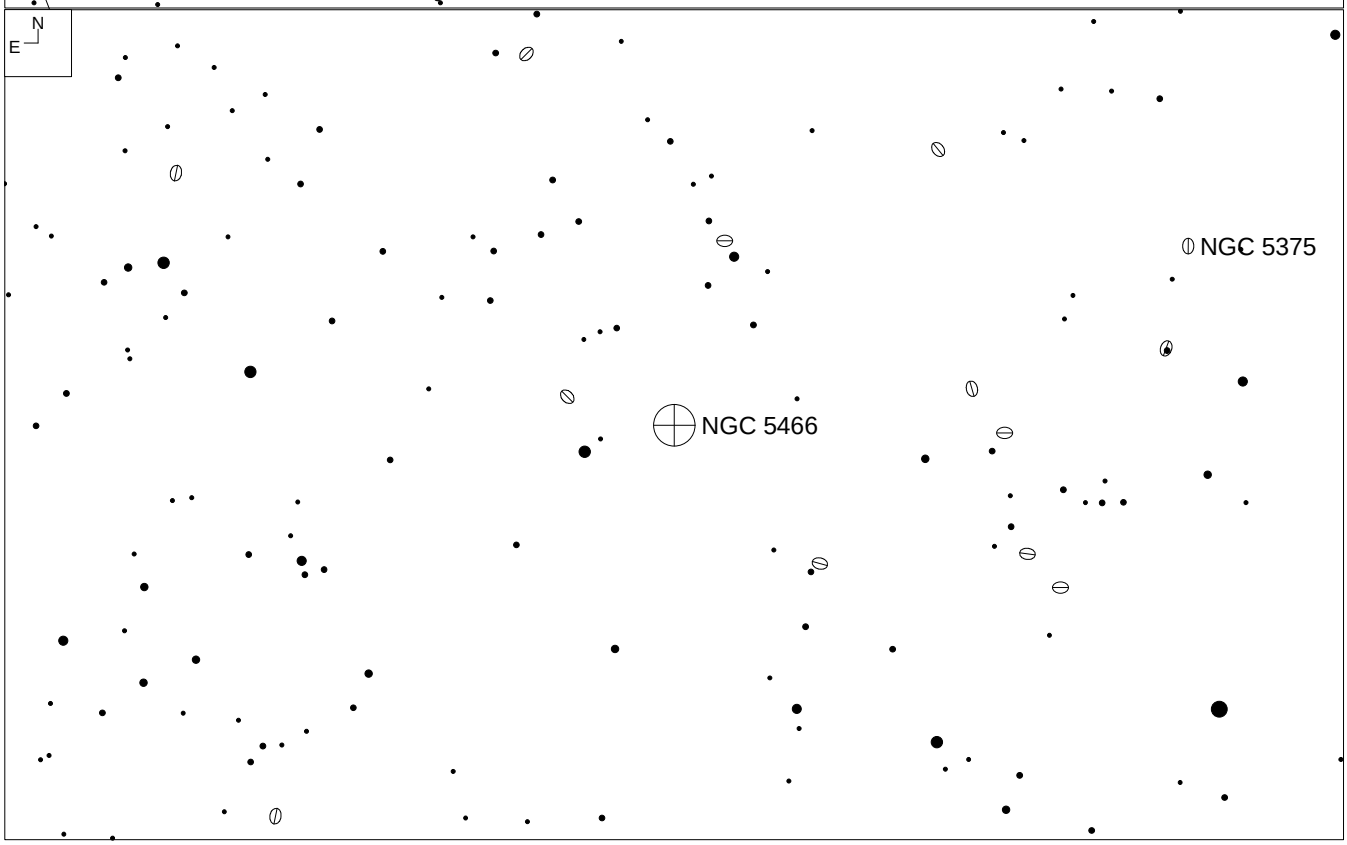
M3 (Bootes)



RA	Dec	V_{mag}	HB_{Mag}	Bt^*_{Mag}	SB	Size (‘)
13 42 11.2	+28 22 32	6.3	15.6	12.7	12.6	18

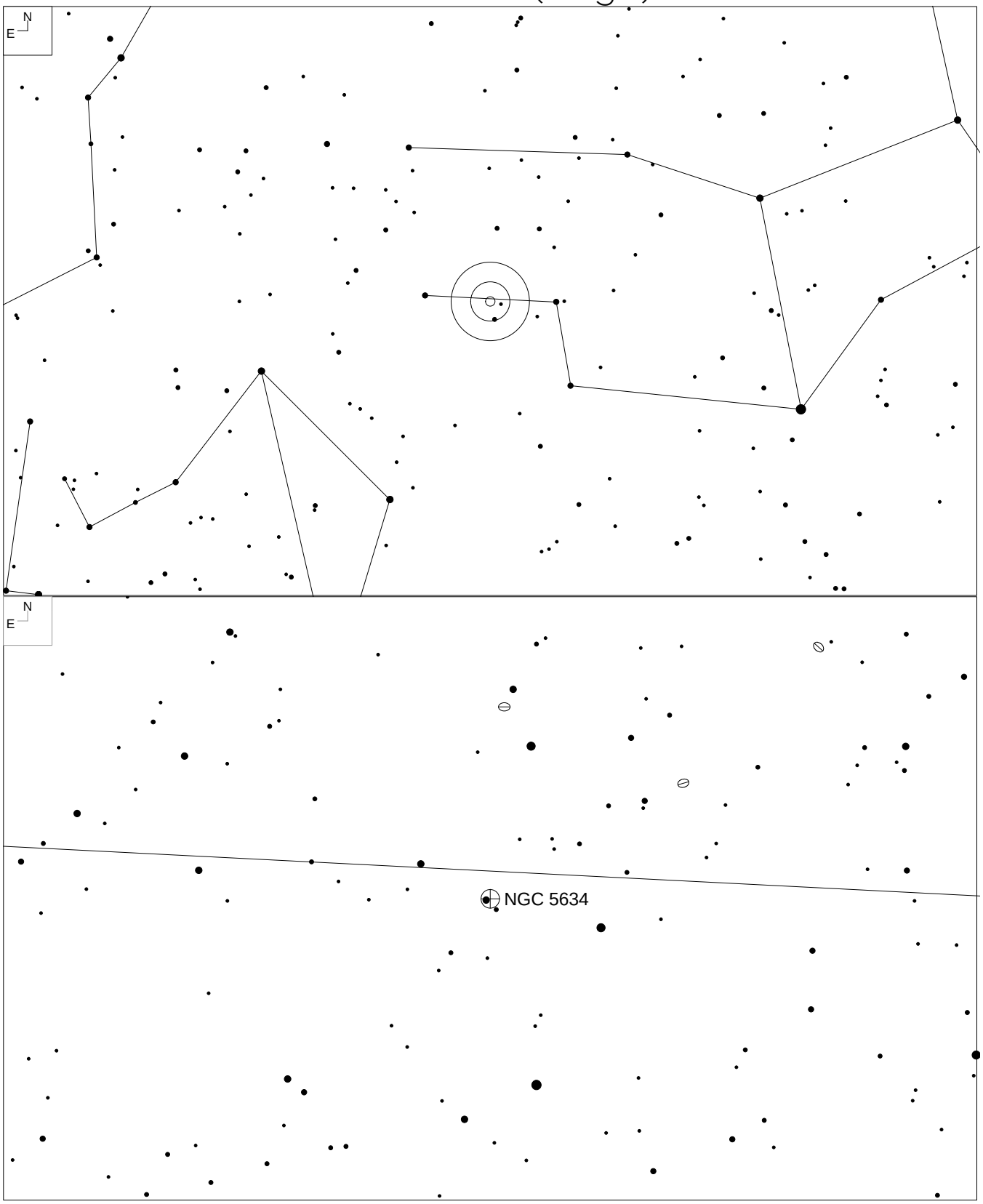
NGC 5466 (Bootes)





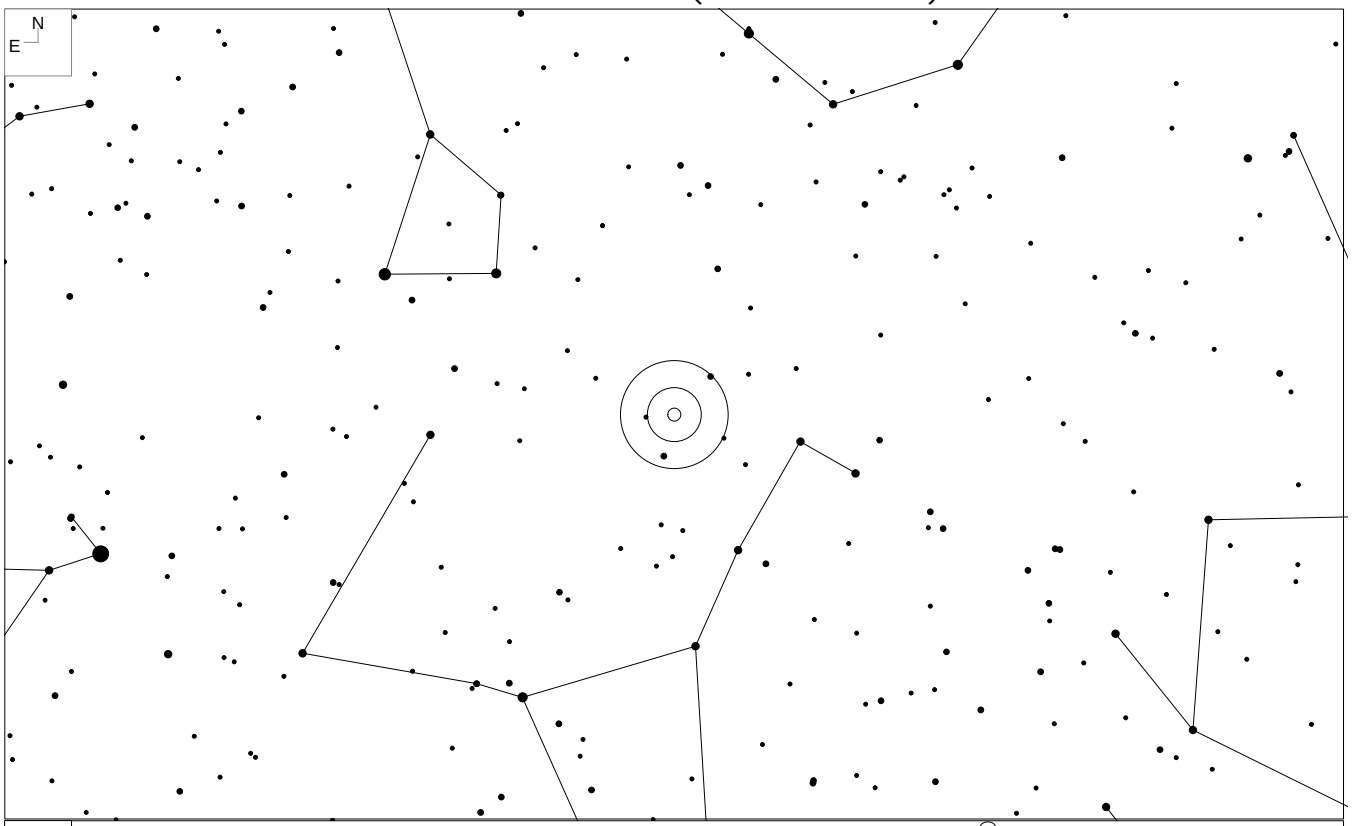
RA	Dec	V_{mag}	HB_{Mag}	Bt^*_{Mag}	SB	Size (‘)
14 05 27.3	+28 32 04	9.2	16.6	13.8	14	9

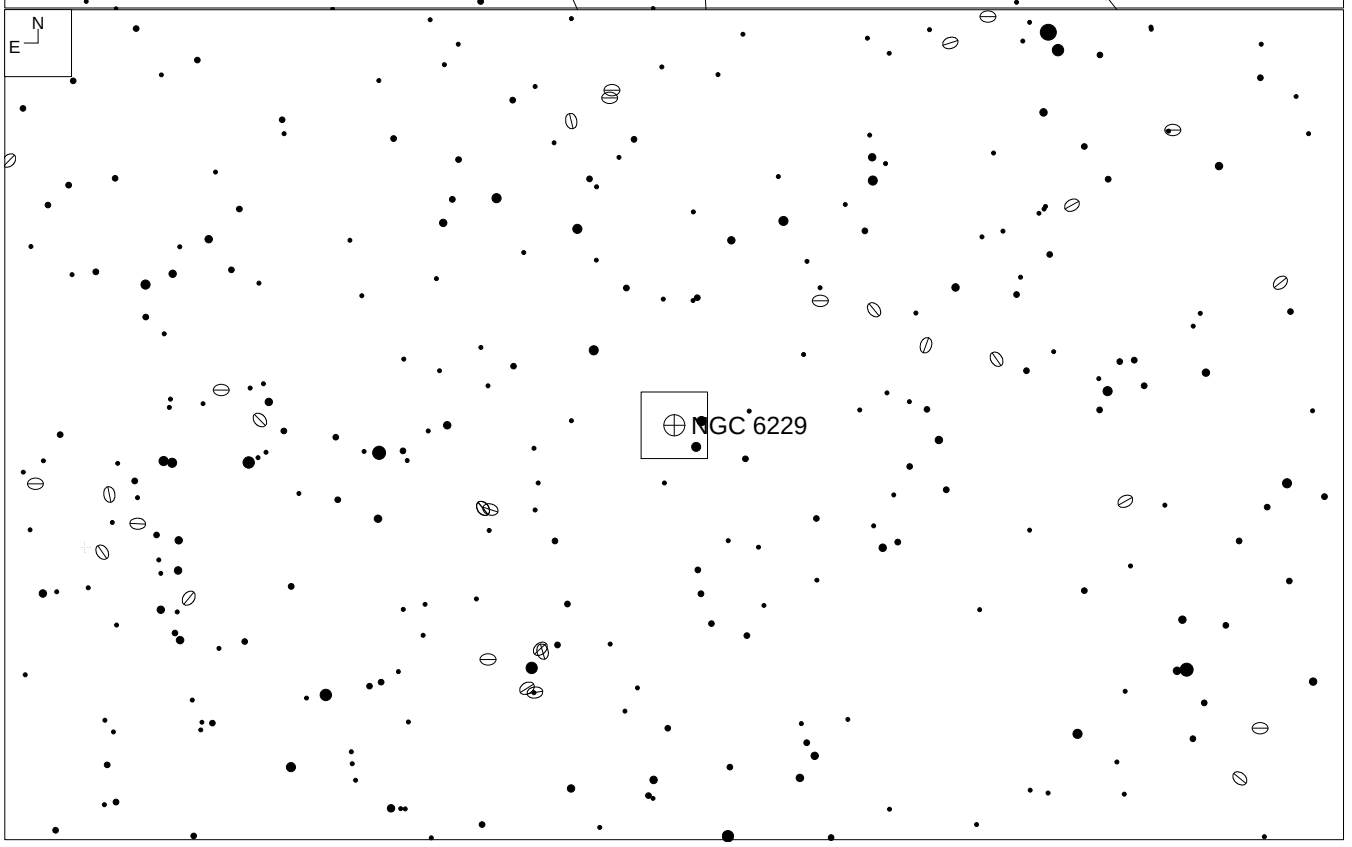
NGC 5634 (Virgo)



RA	Dec	V_{mag}	HB_{Mag}	Bt^*_{Mag}	SB	Size (‘)
14 29 37.3	-05 58 35	9.5	17.8	-	13.2	5.5

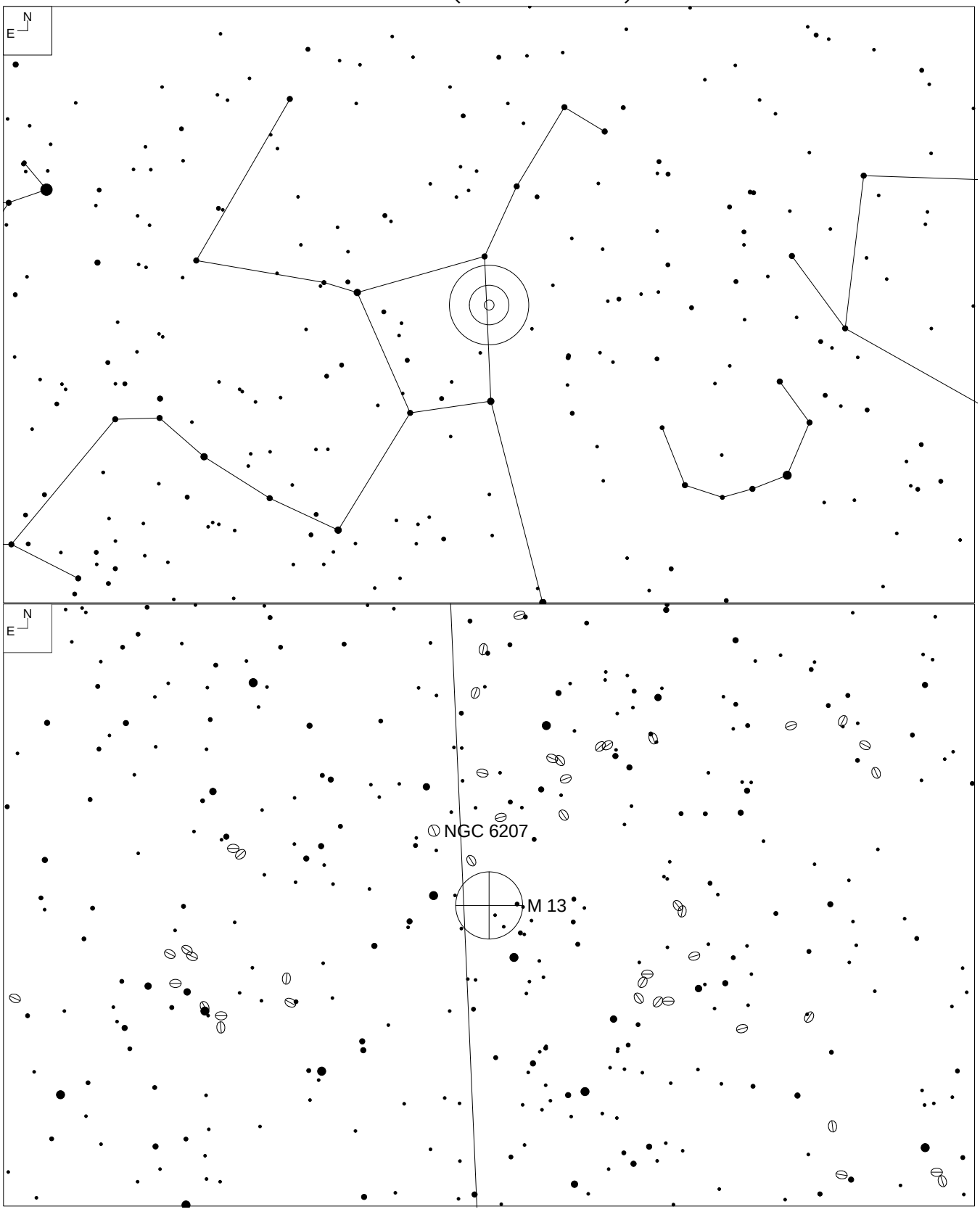
NGC 6229 (Hercules)





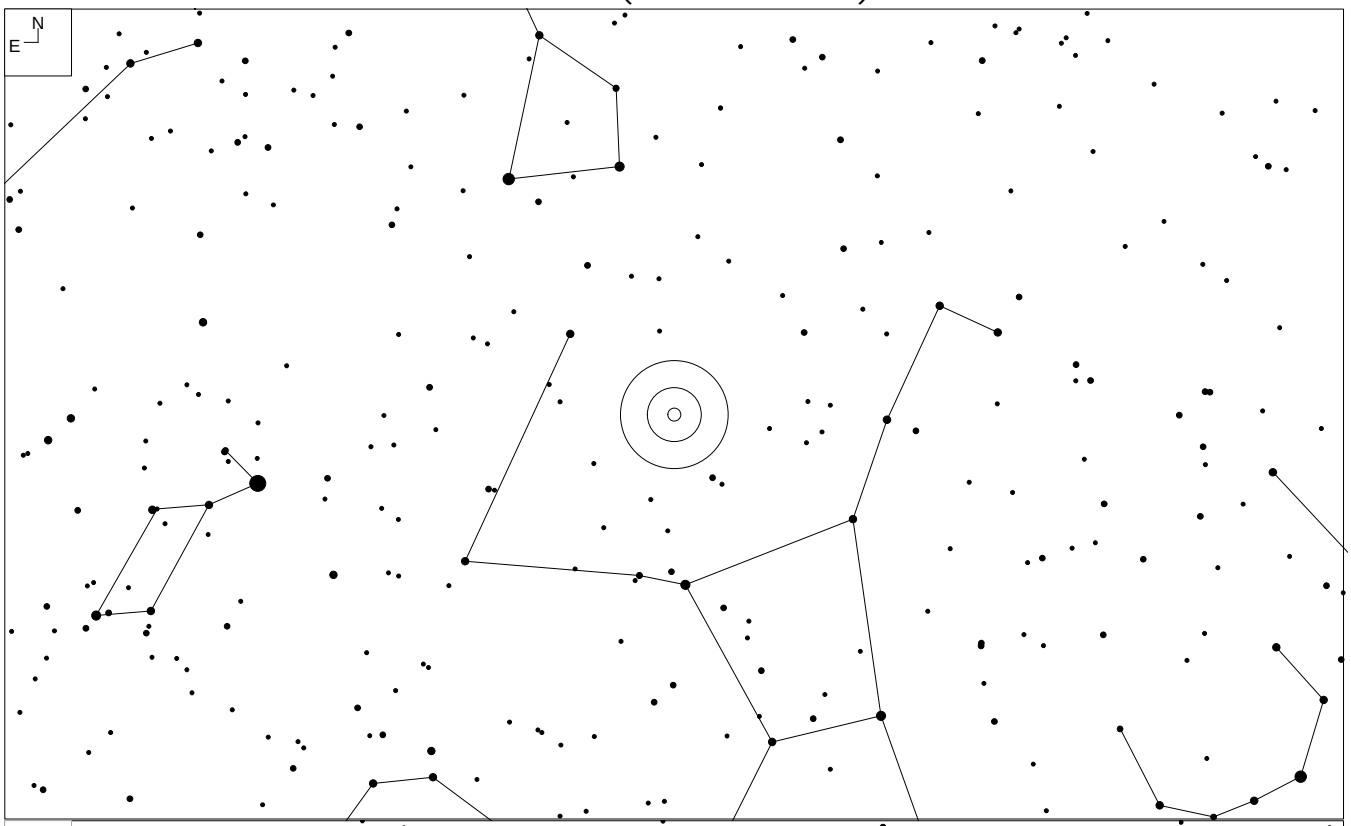
RA	Dec	V_{mag}	HB_{Mag}	Bt^*_{Mag}	SB	Size (')
16 46 58.9	+47 31 40	9.4	18	15.5	12.7	4.5

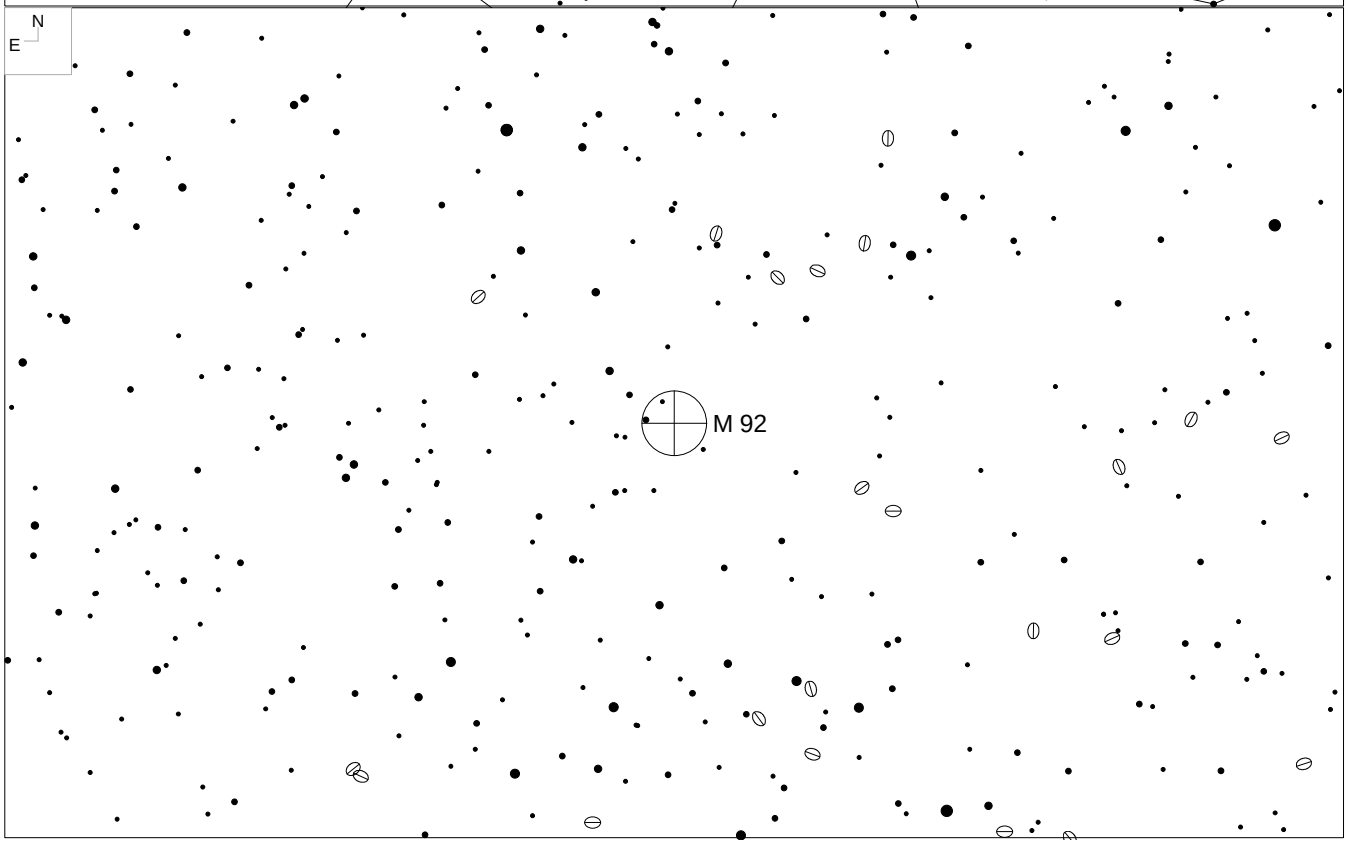
M13 (Hercules)



RA	Dec	V_{mag}	HB_{Mag}	Bt^*_{Mag}	SB	Size (‘)
16 41 41.5	+36 27 37	5.8	15	11.9	12.3	20

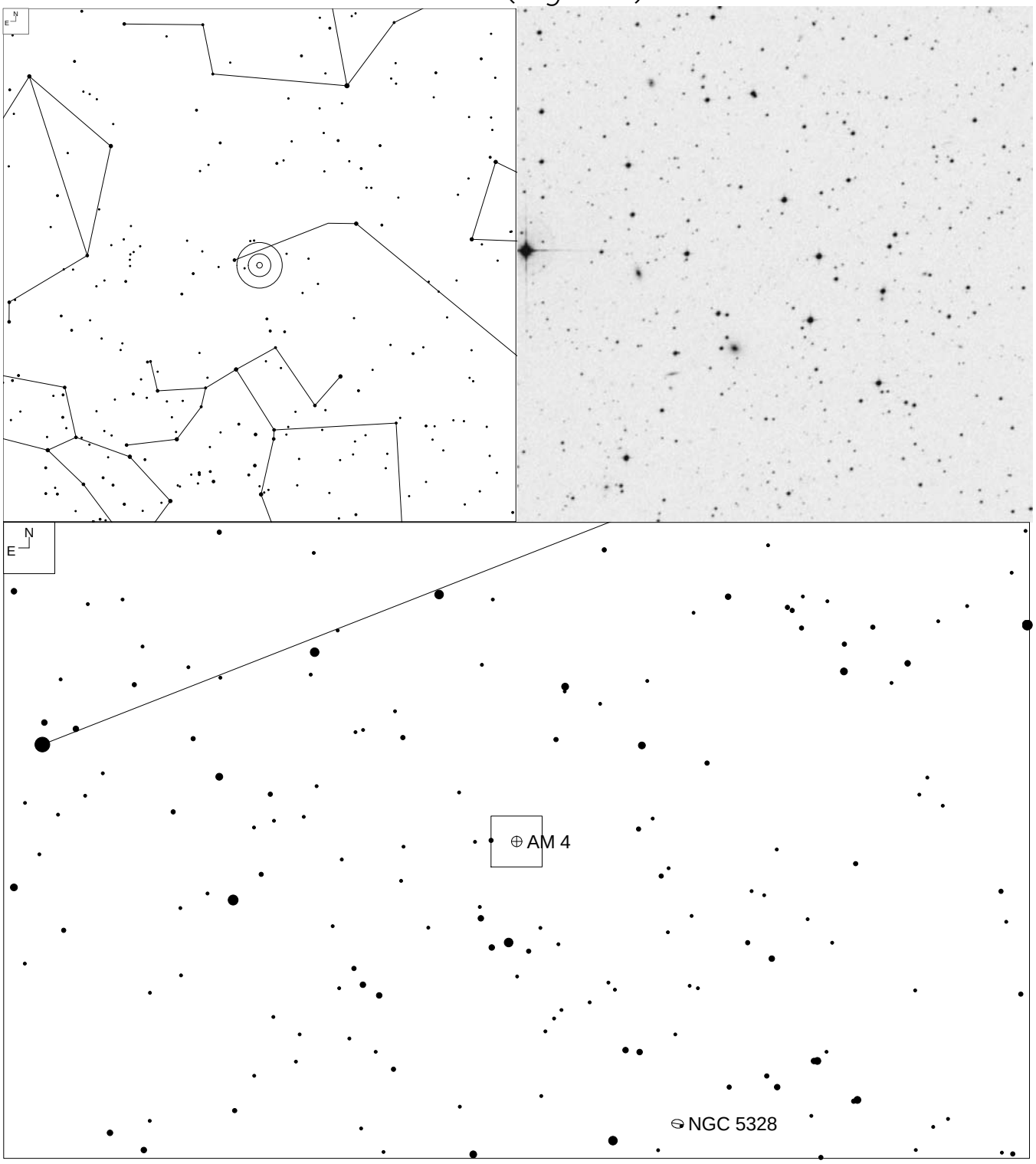
M92 (Hercules)





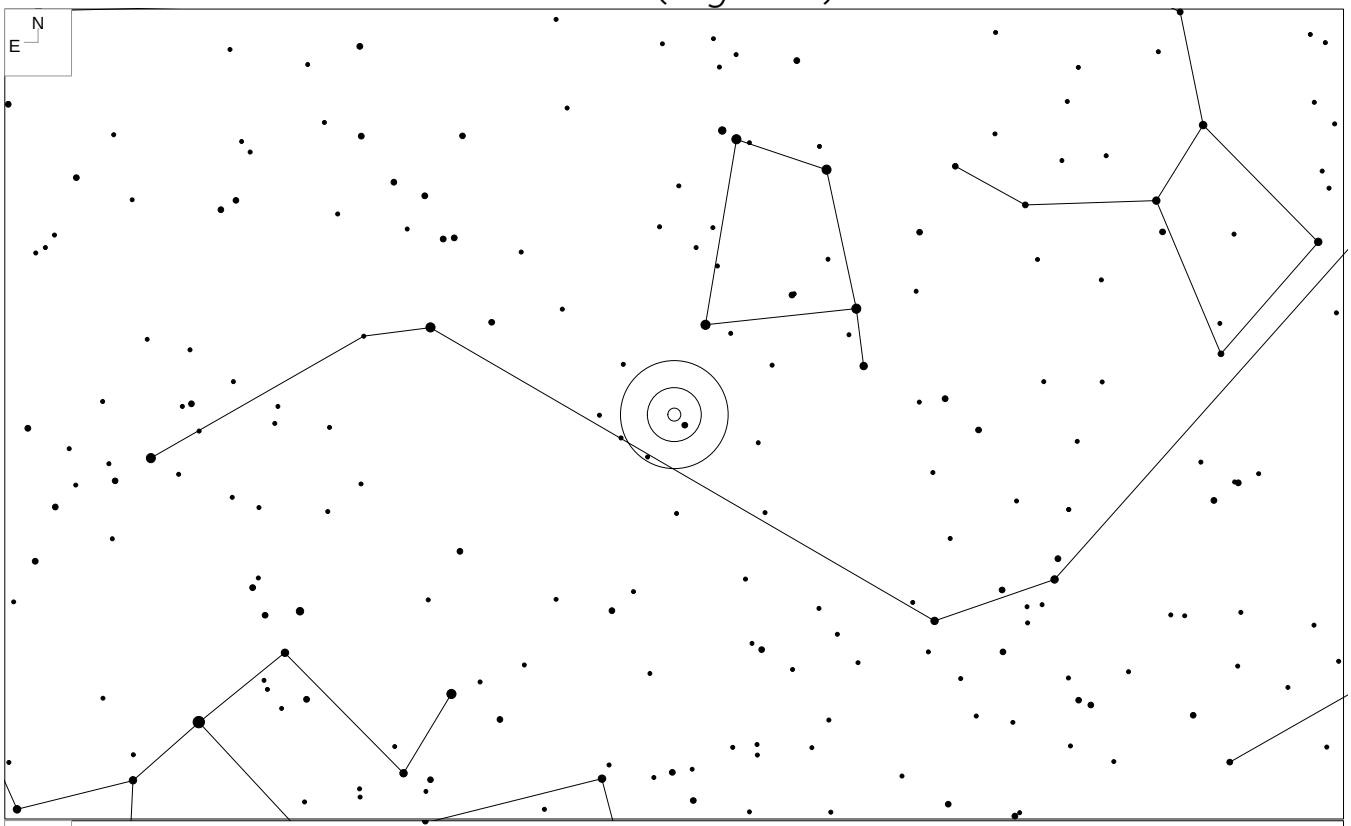
RA	Dec	V_{mag}	HB_{Mag}	Bt^*_{Mag}	SB	Size (')
17 17 07.3	+43 08 11	6.5	15.2	12.1	12.2	14

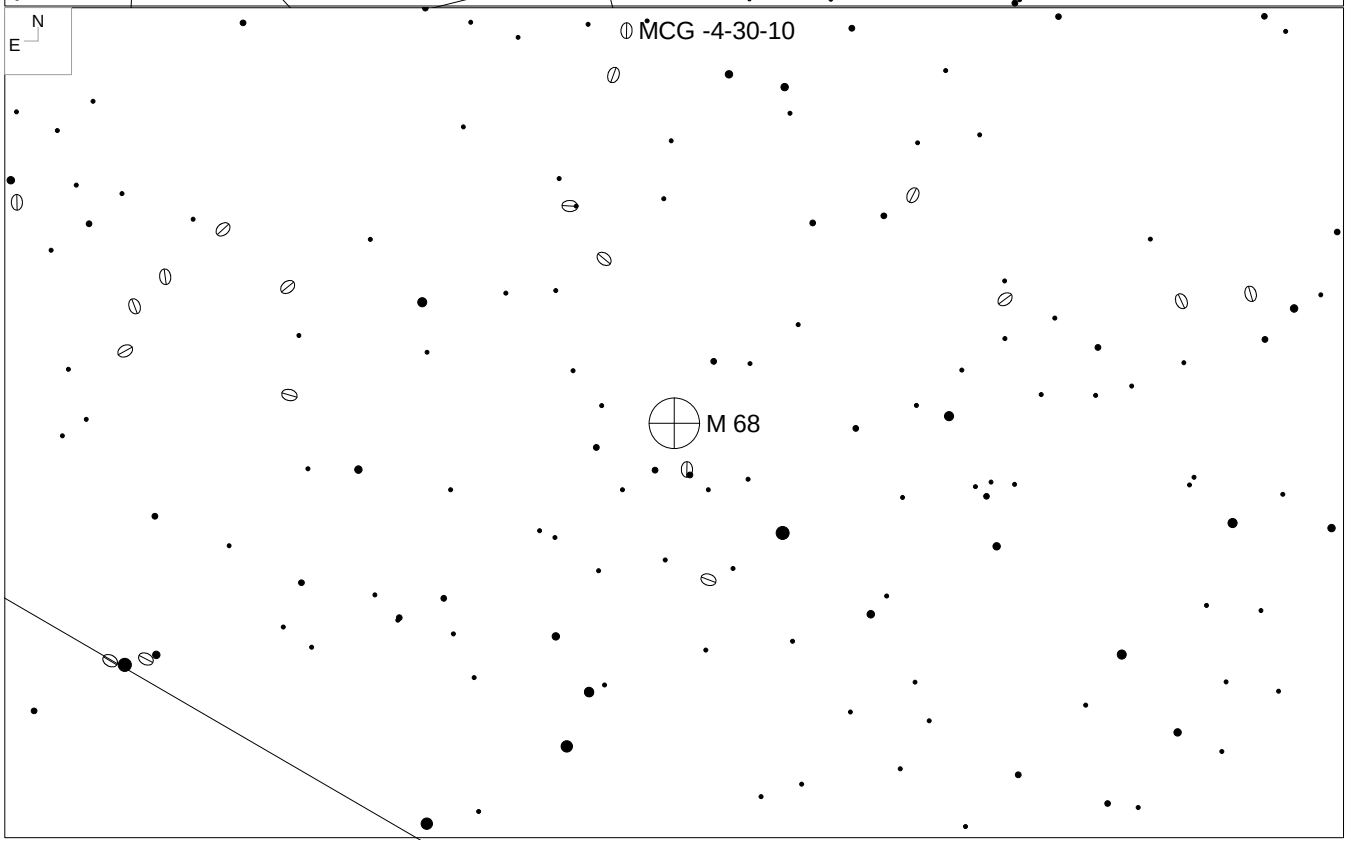
AM-4 (Hydra)



RA	Dec	V_{mag}	HB_{Mag}	$Bt*_{Mag}$	SB	Size (‘)
13 56 21.0	-27 09 42	15.9	21.6	20.5	18.3	3

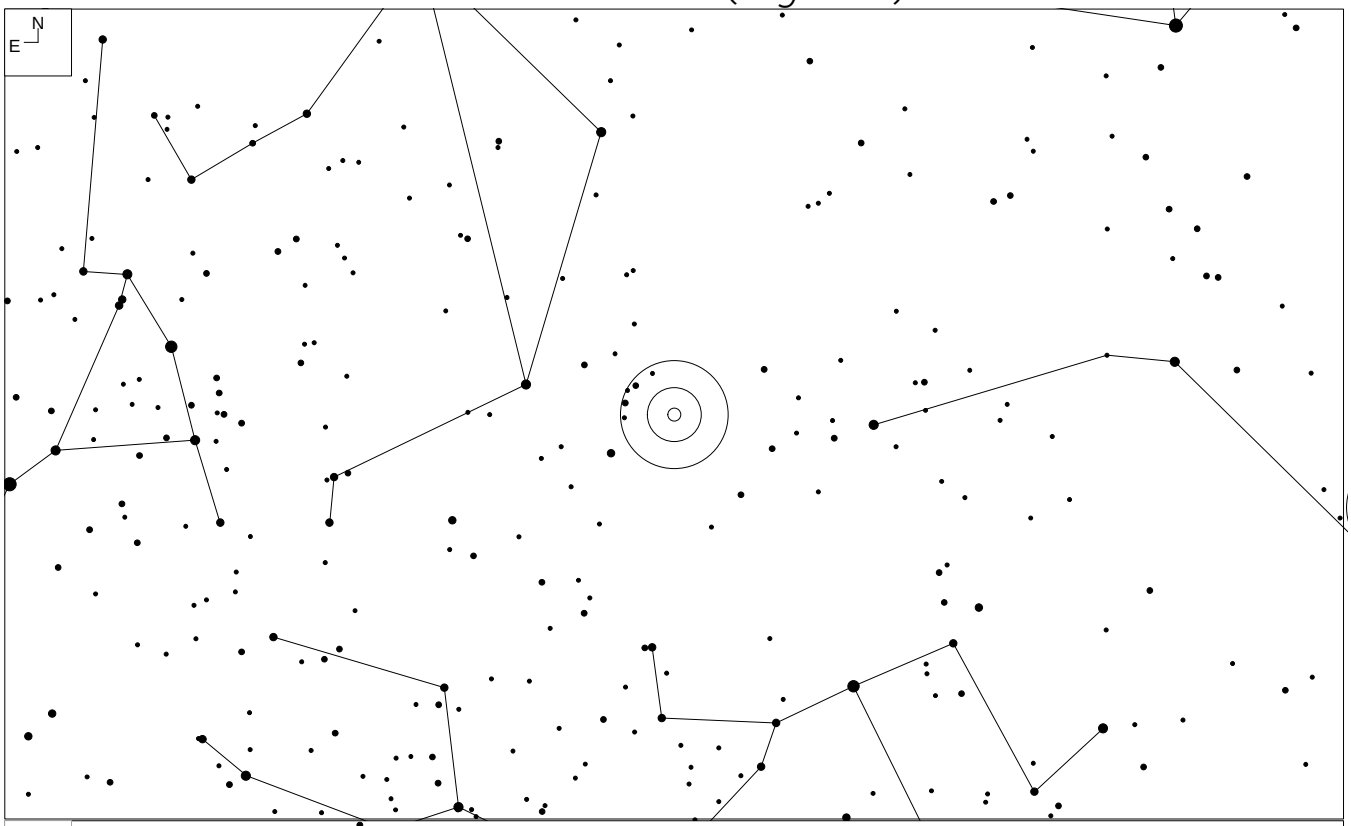
M68 (Hydra)

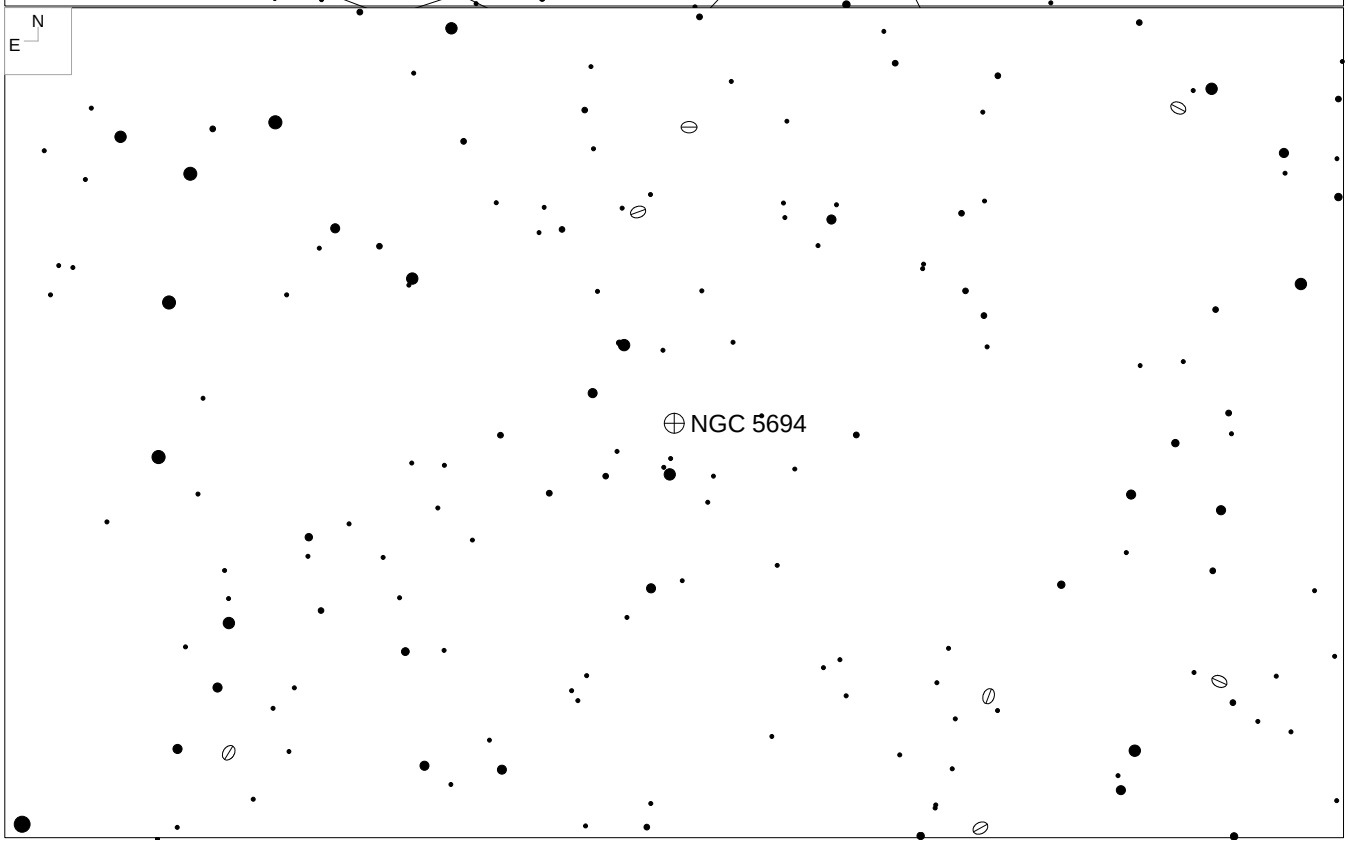




RA	Dec	V_{mag}	HB_{Mag}	$Bt*_{Mag}$	SB	Size (‘)
12 39 28.0	-26 44 34	7.3	15.6	12.6	12.5	11

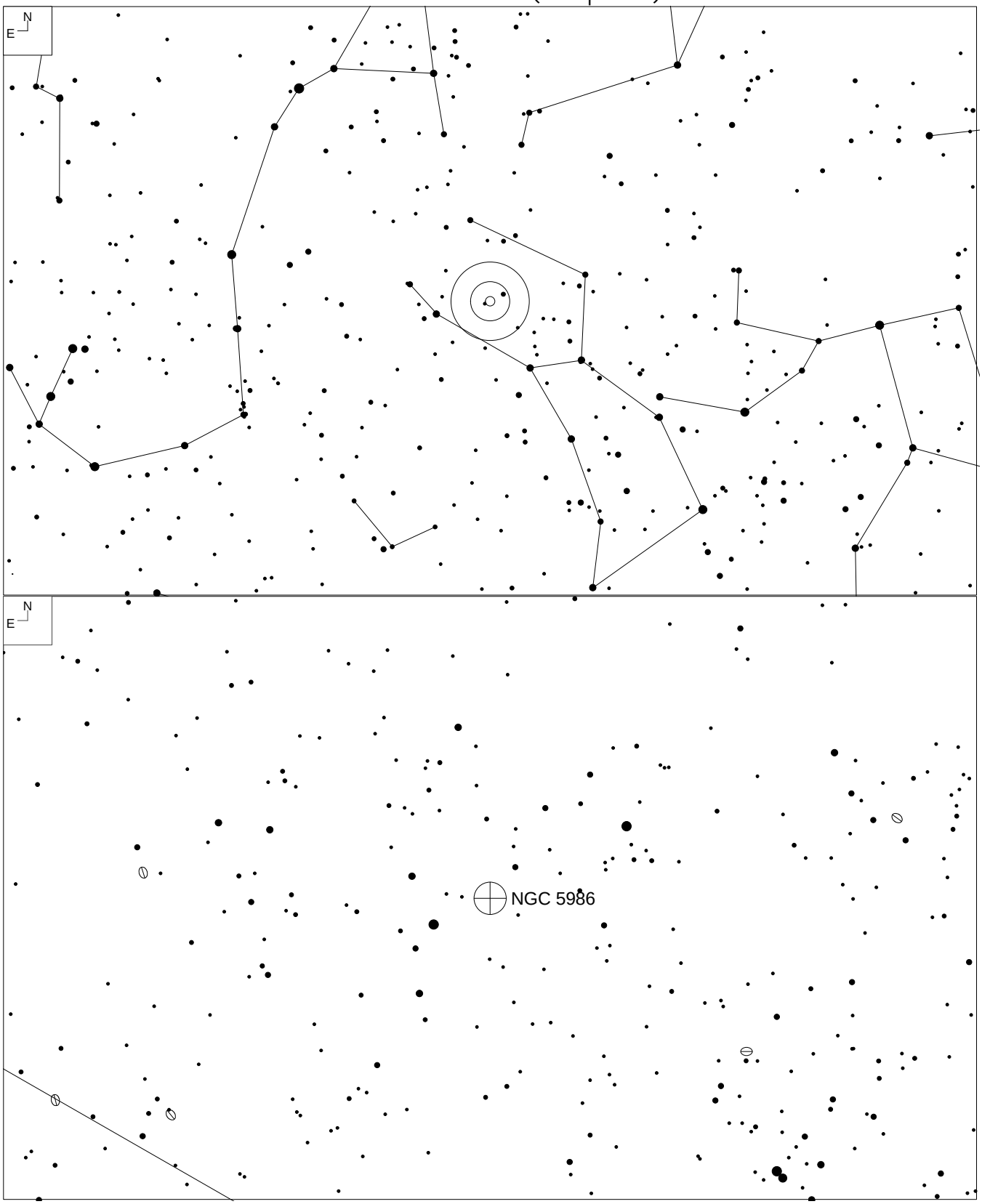
NGC 5694 (Hydra)





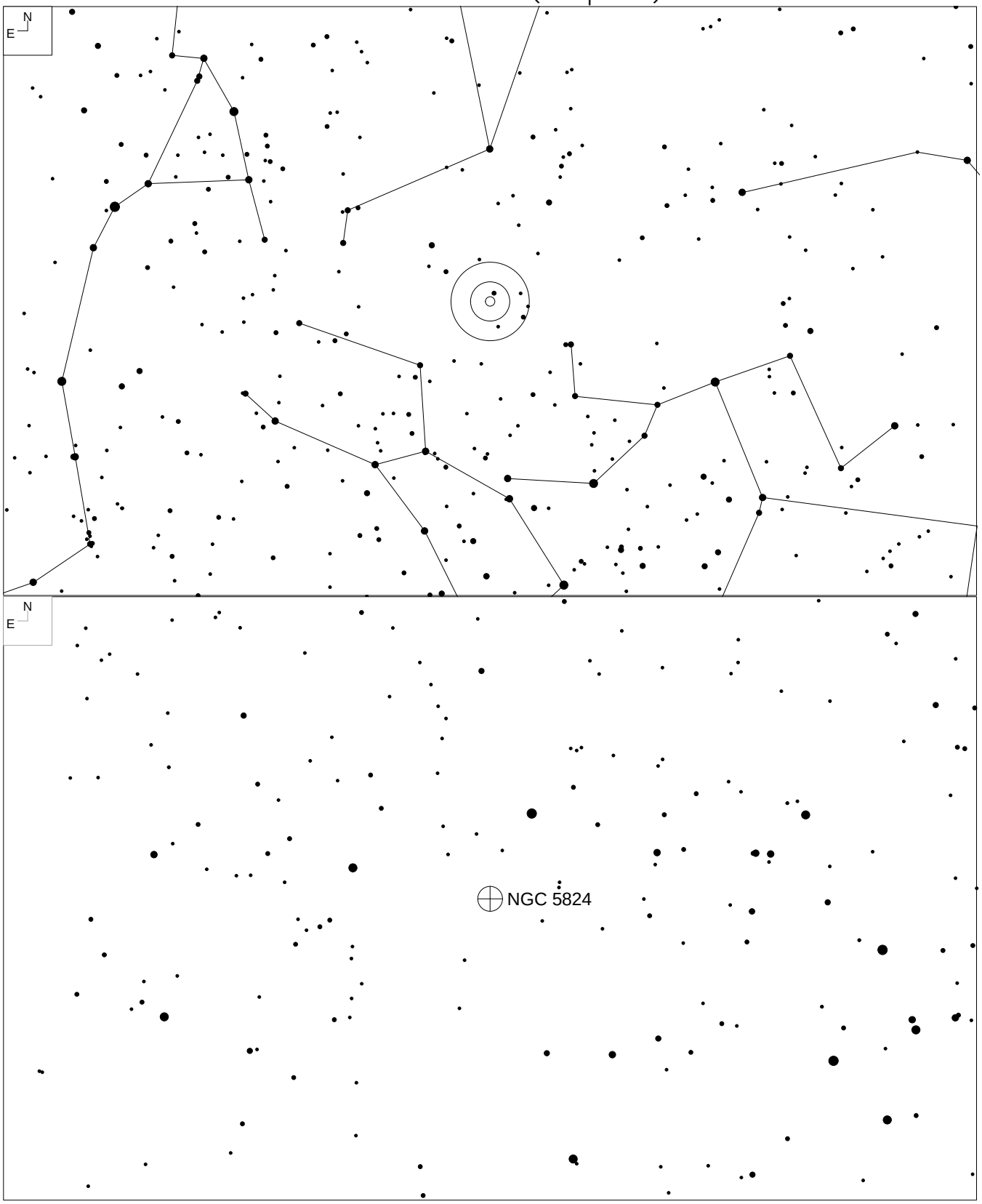
RA	Dec	V_{mag}	HB_{Mag}	$Bt*_{Mag}$	SB	Size (‘)
14 39 36.5	-26 32 18	10.2	18.5	15.5	13.4	4.3

NGC 5986 (Lupus)



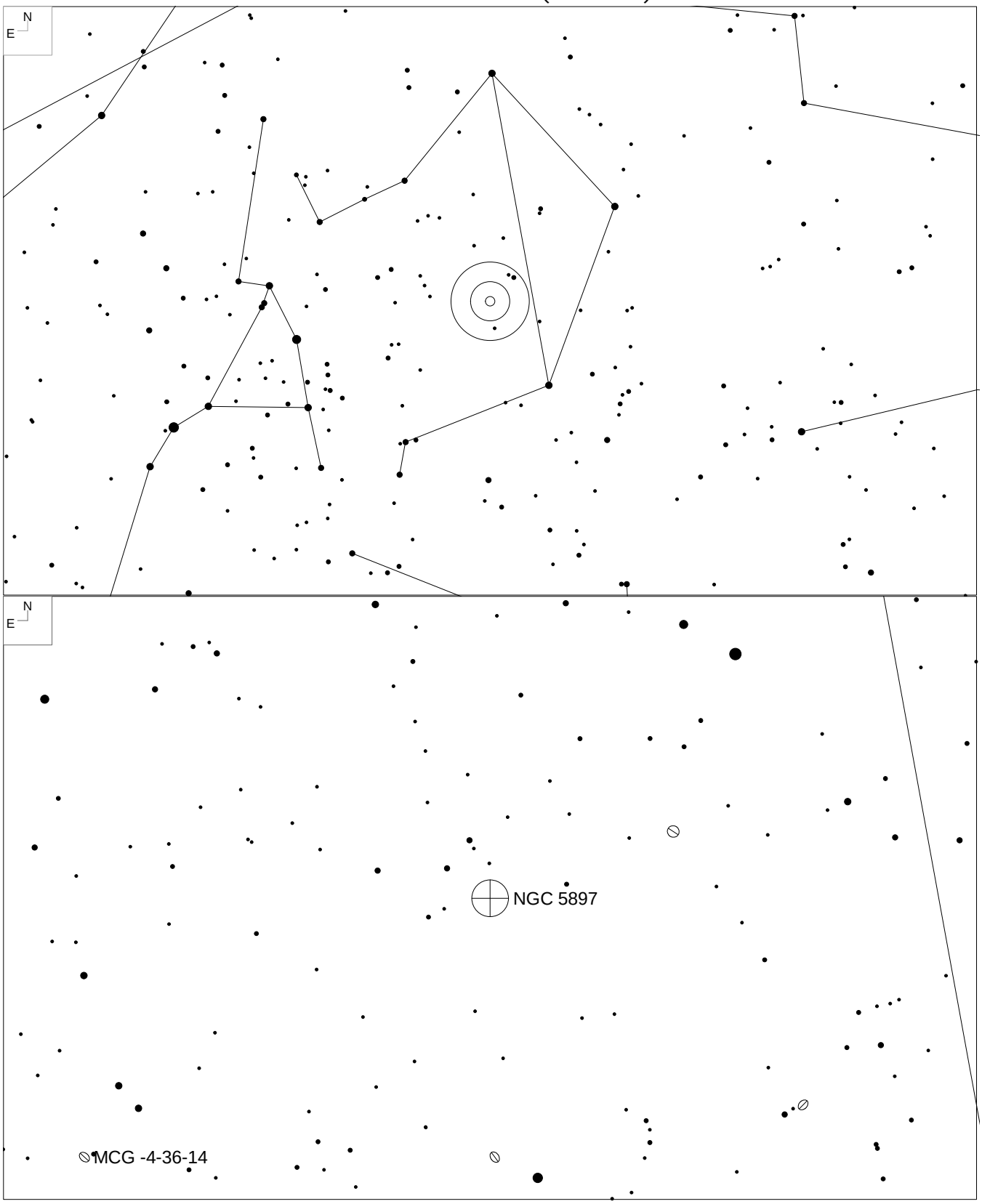
RA	Dec	V_{mag}	HB_{Mag}	$Bt*_{Mag}$	SB	Size (')
15 46 03.5	-37 47 10	7.6	16.5	13.2	12.5	9.6

NGC 5824 (Lupus)



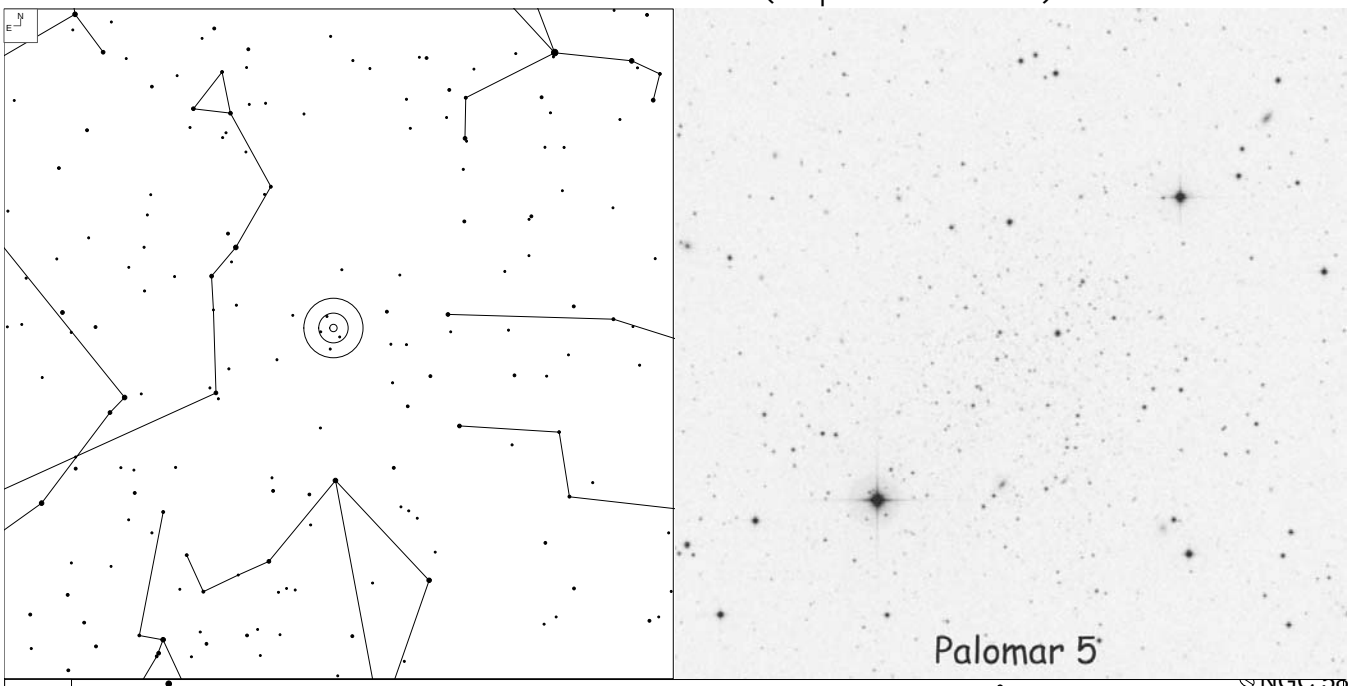
RA	Dec	V_{mag}	HB_{Mag}	$Bt*_{Mag}$	SB	Size (‘)
15 03 58.5	-33 04 04	9.1	18.5	15.5	13.4	7.4

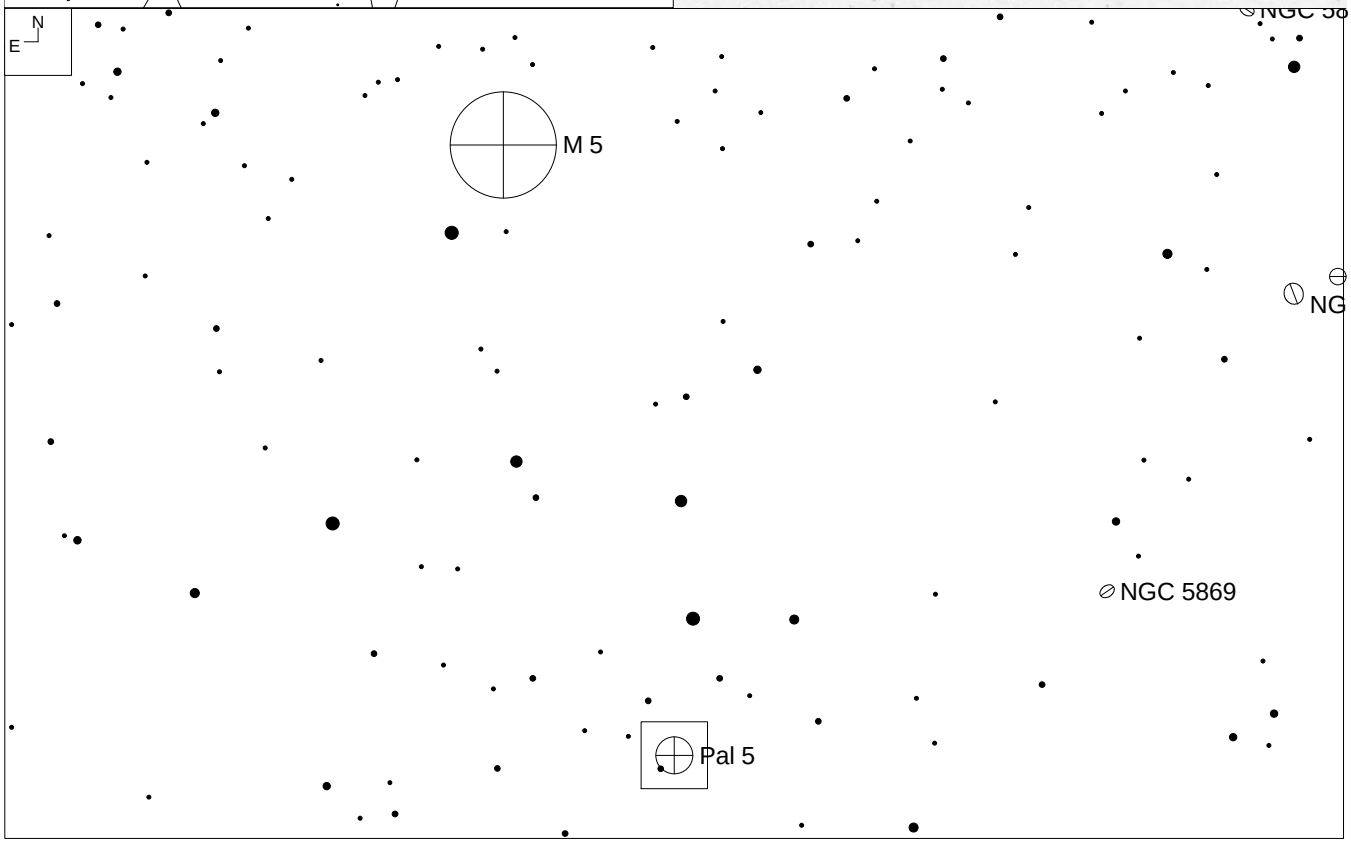
NGC 5897 (Libra)



RA	Dec	V_{mag}	HB_{Mag}	Bt^*_{Mag}	SB	Size (‘)
15 17 24.5	-21 00 37	8.4	16.3	13.3.	13.6	11

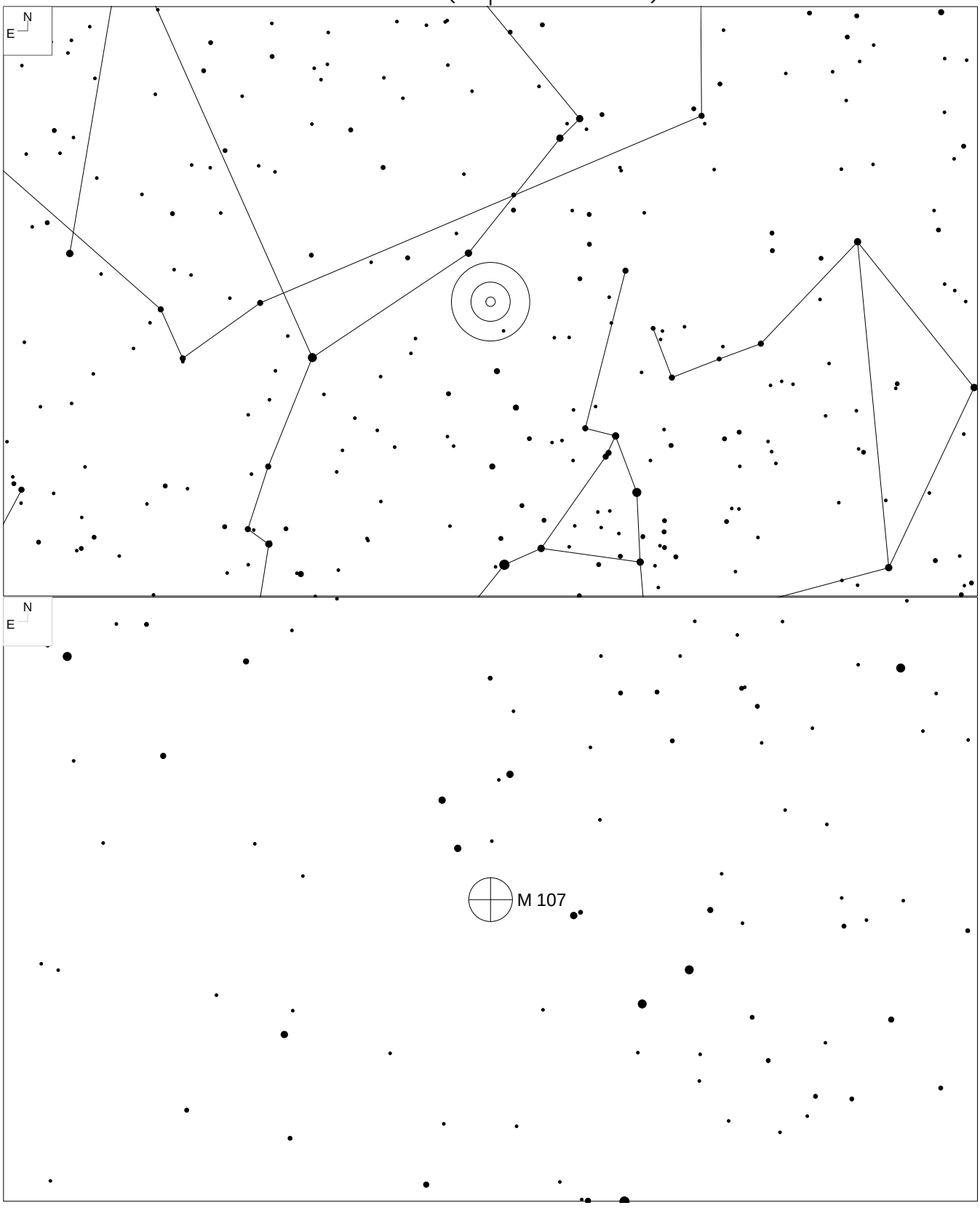
M5 and Palomar 5 (Ophiuchus)





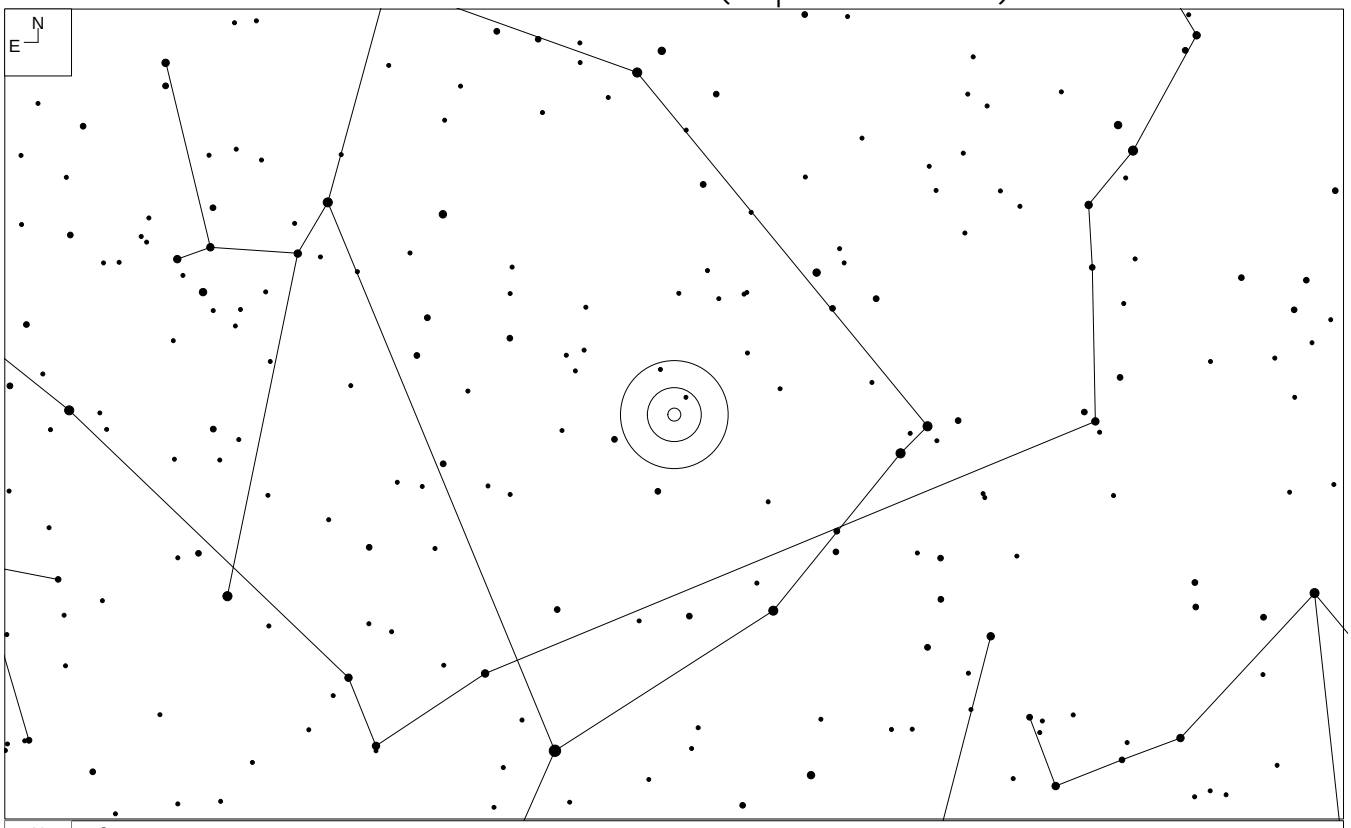
	RA	Dec	V_{mag}	HB_{Mag}	Bt^*_{Mag}	SB	Size (')
M5	15 18 33.8	+02 04 58	5.7	15	12.2	12.5	23
Palomar 5	15 16 05.3	-00 07 14	11.8	17.4	15.5	16.3	8

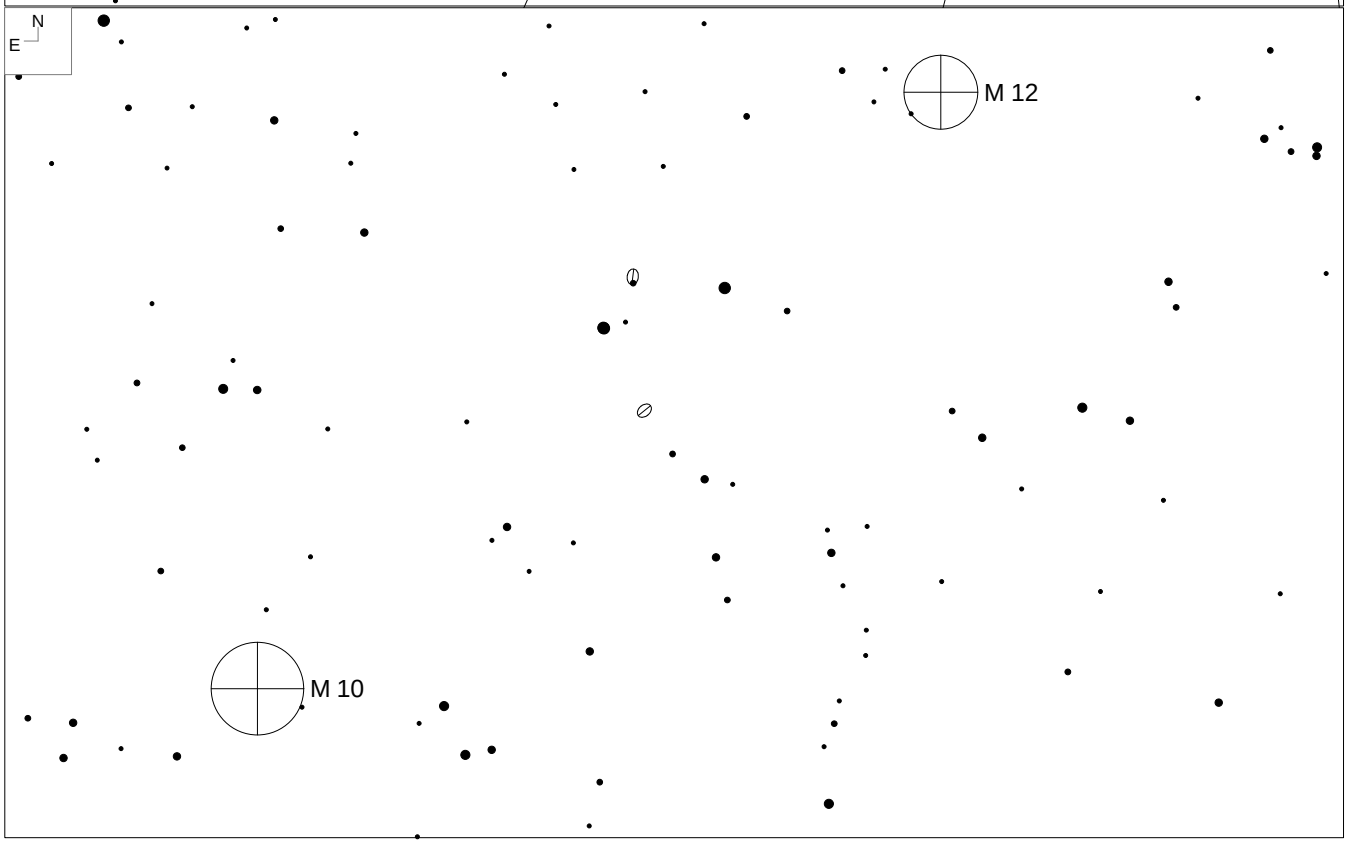
M107 (Ophiuchus)



RA	Dec	V_{mag}	HB_{Mag}	Bt^*_{Mag}	SB	Size (‘)
16 32 31.9	-13 03 13	7.8	15.6	13	13.4	13

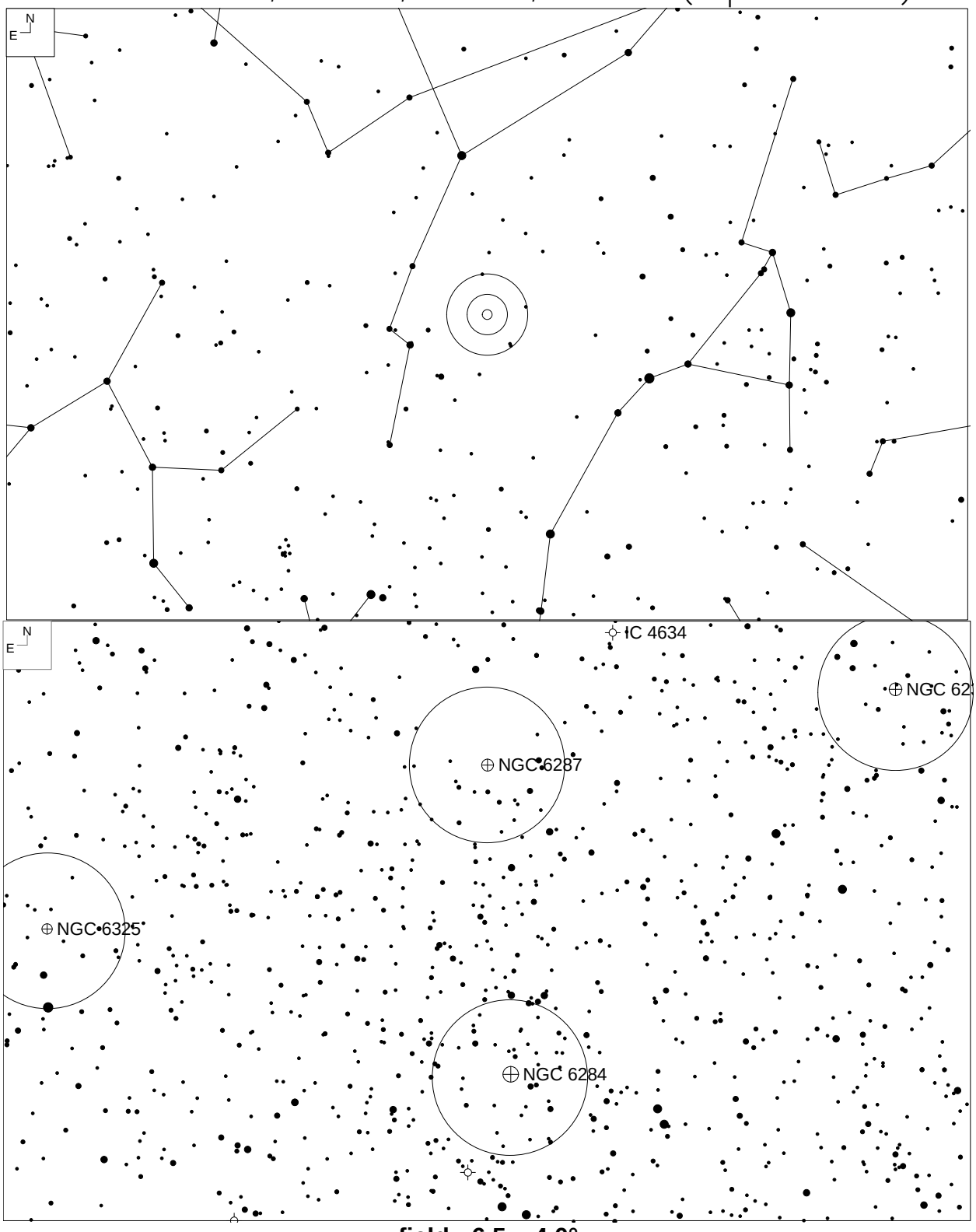
M10 and M12 (Ophiuchus)





	RA	Dec	V_{mag}	HB_{Mag}	Bt^*_{Mag}	SB	Size (')
M10	16 57 08.9	-04 05 58	6.1	14.7	12	12.1	16
M12	16 47 14.5	-01 56 52	6.6	15.1	12	13.1	20

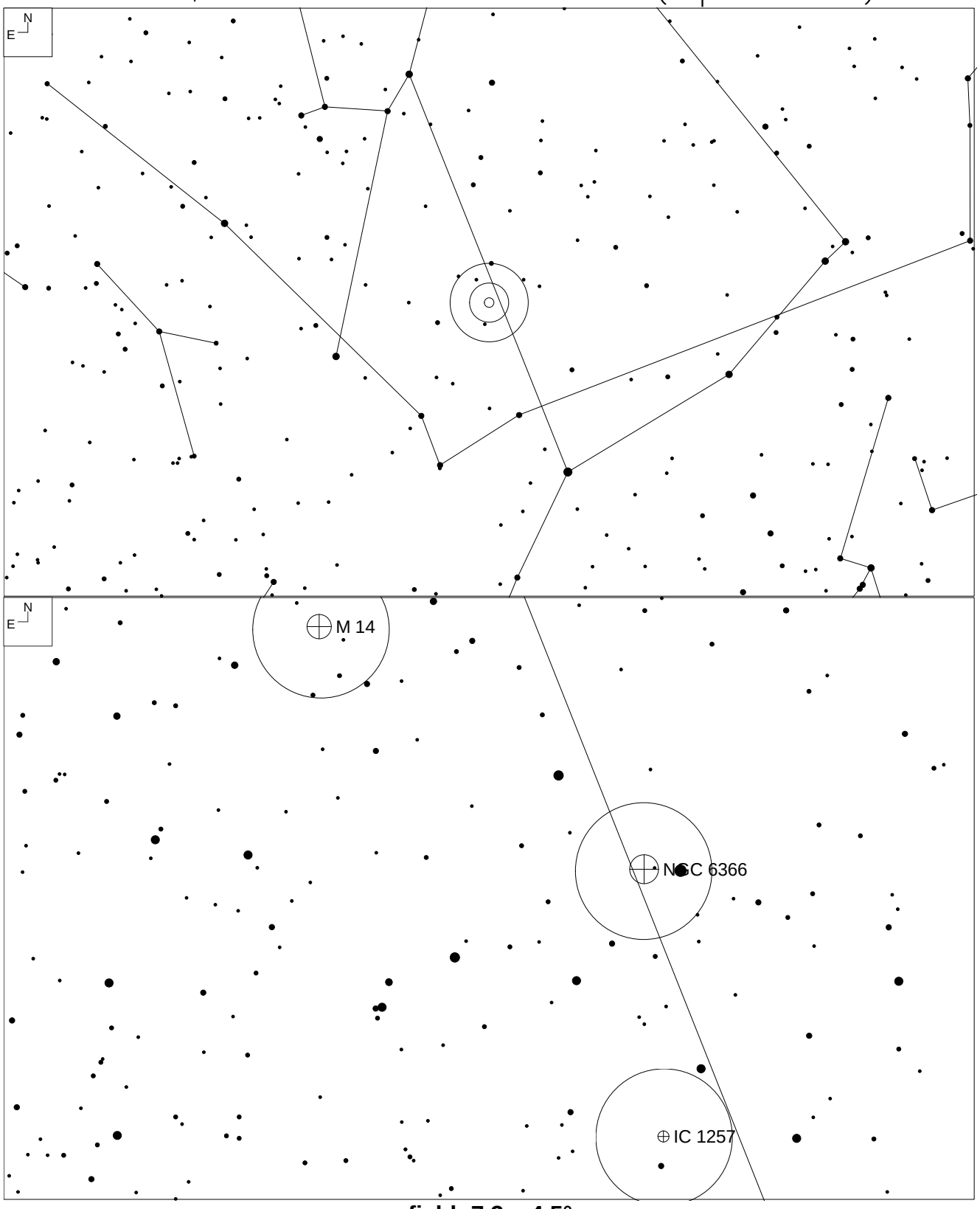
NGC 6325, 6284, 6287, 6325 (Ophiuchus)



field: 6.5 x 4.0°

	RA	Dec	V_{mag}	HB_{Mag}	$Bt*_{Mag}$	SB	Size (')
NGC 6235	17 17 59.2	-23 45 57	8.9	16.7	14	12.4	5
NGC 6284	17 04 28.8	-24 45 53	8.9	16.6	-	12.9	6.2
NGC 6287	17 05 09.4	-22 42 29	9.3	17.1	14.5	12.7	4.8
NGC 6325	16 53 25.4	-22 10 38	10.2	17.3	14.7	13.3	4.1

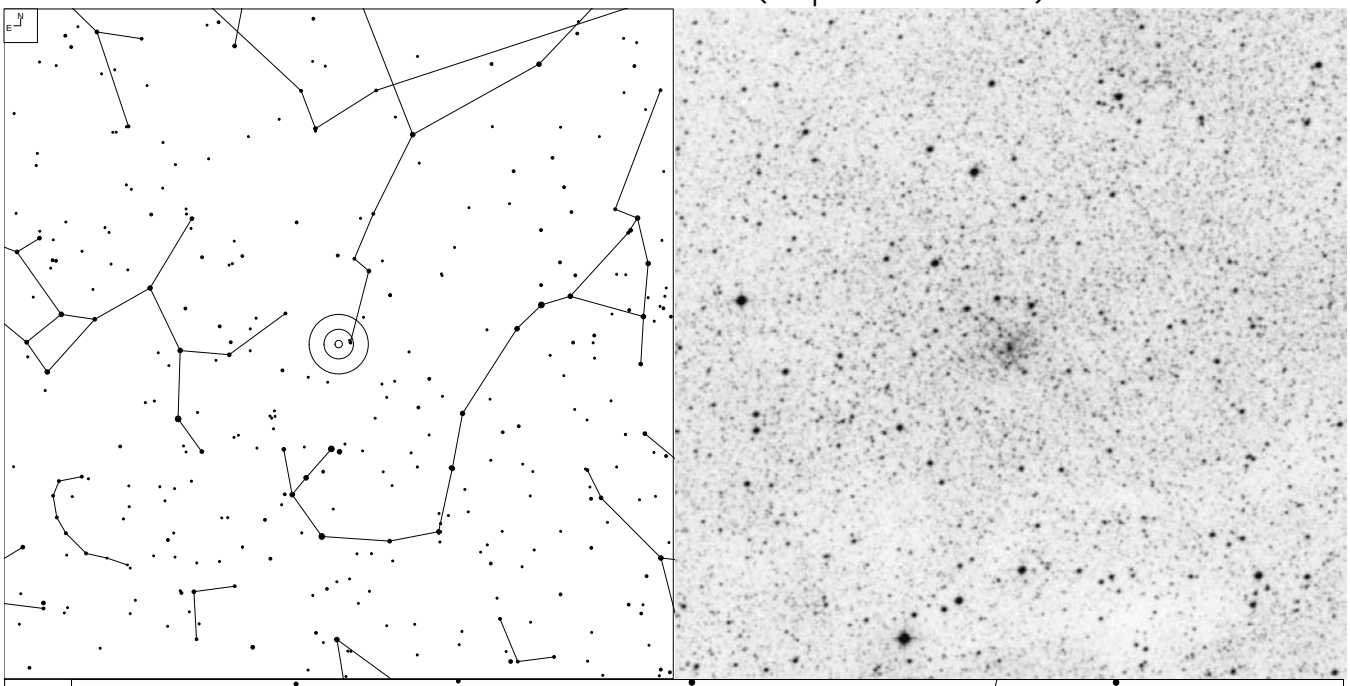
M14, NGC 6366 and IC 1257 (Ophiuchus)

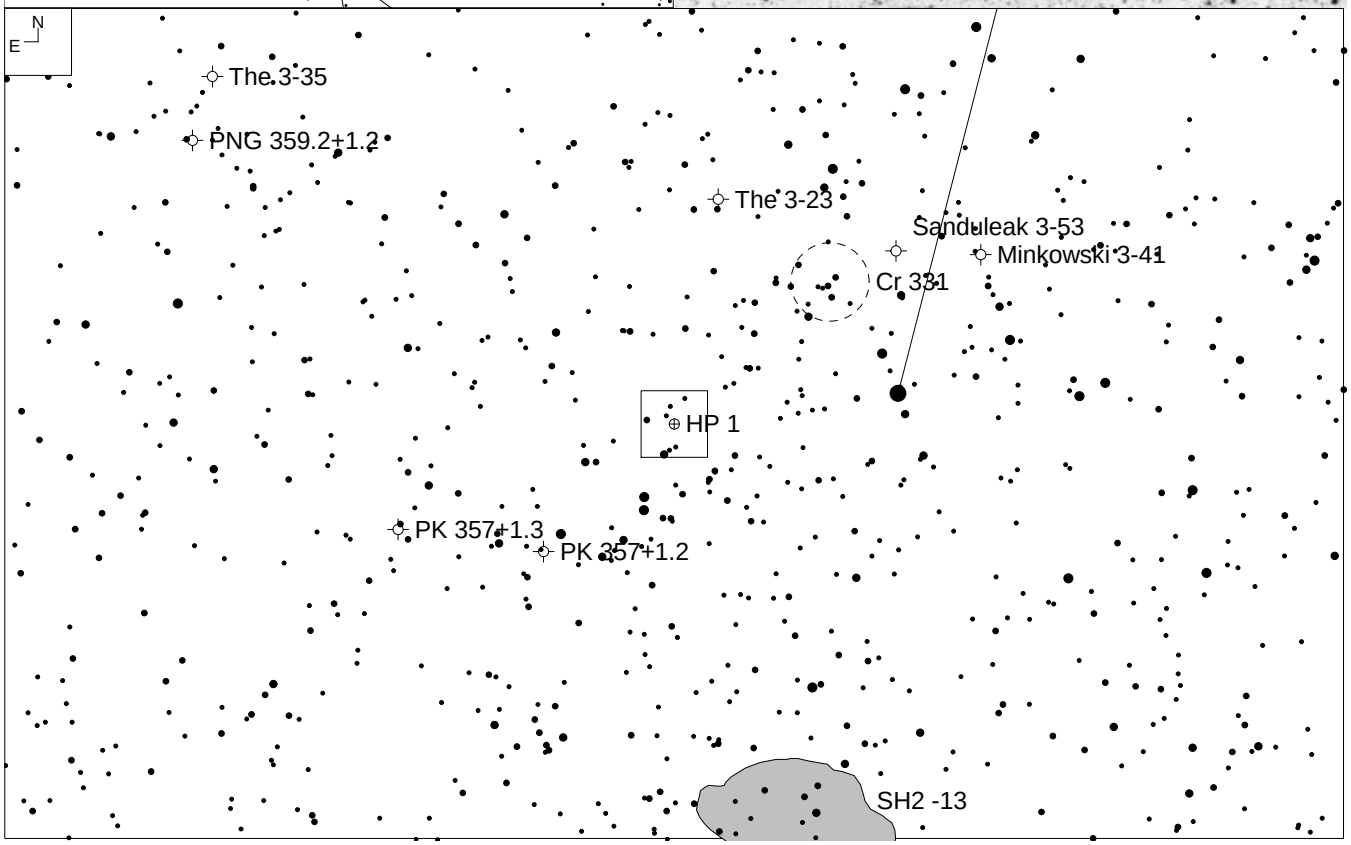


field: 7.3 x 4.5°

	RA	Dec	V_{mag}	HB_{Mag}	Bt^*_{Mag}	SB	Size (')
M14	17 37 36.1	-03 14 45	7.6	17.2	14	12.8	11
NGC 6366	17 27 44.3	-05 04 36	9.5	15.7	13.6	15.1	13
IC 1257	17 27 08.0	-07 05 36	13.1	19.8	17	14.3	1.7

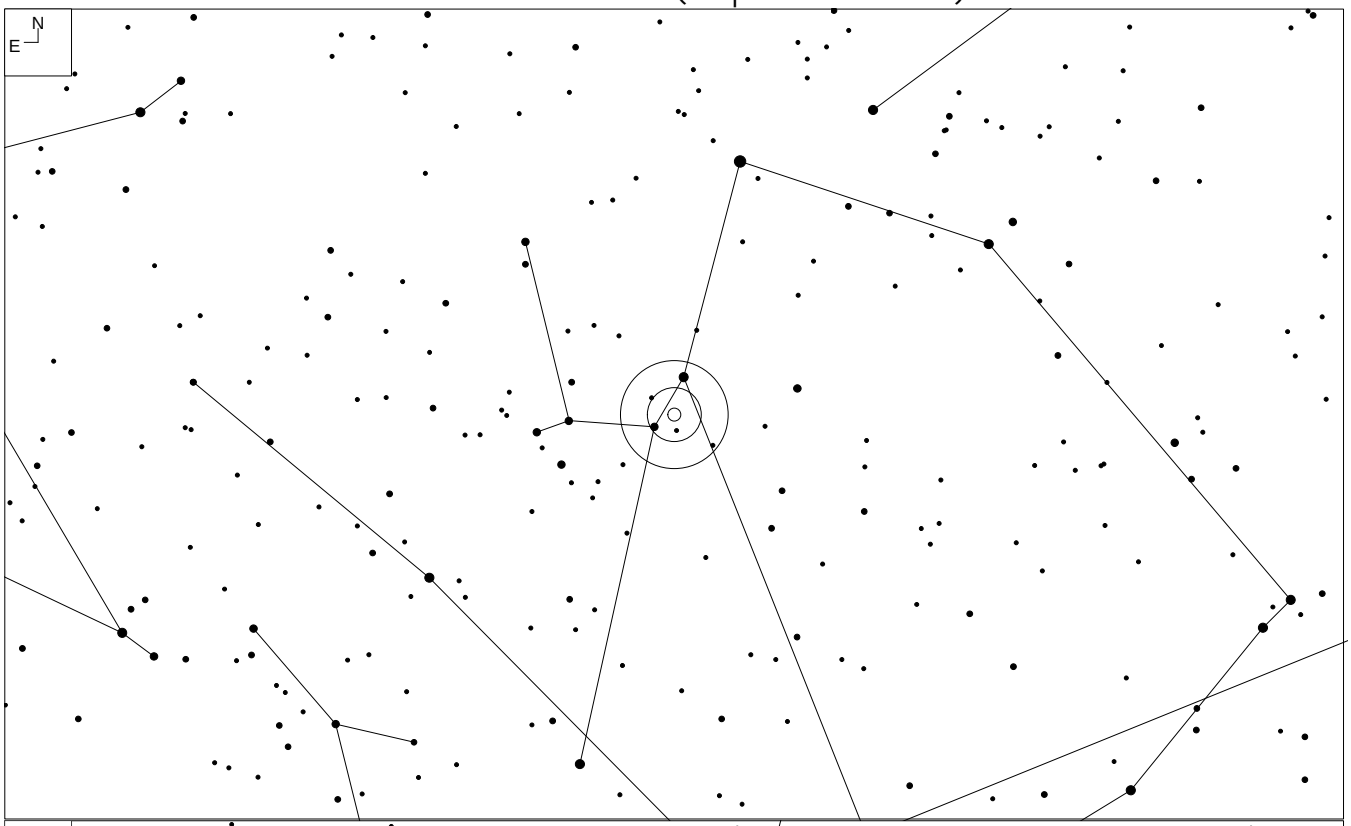
Haute Province 1 (Ophiuchus)

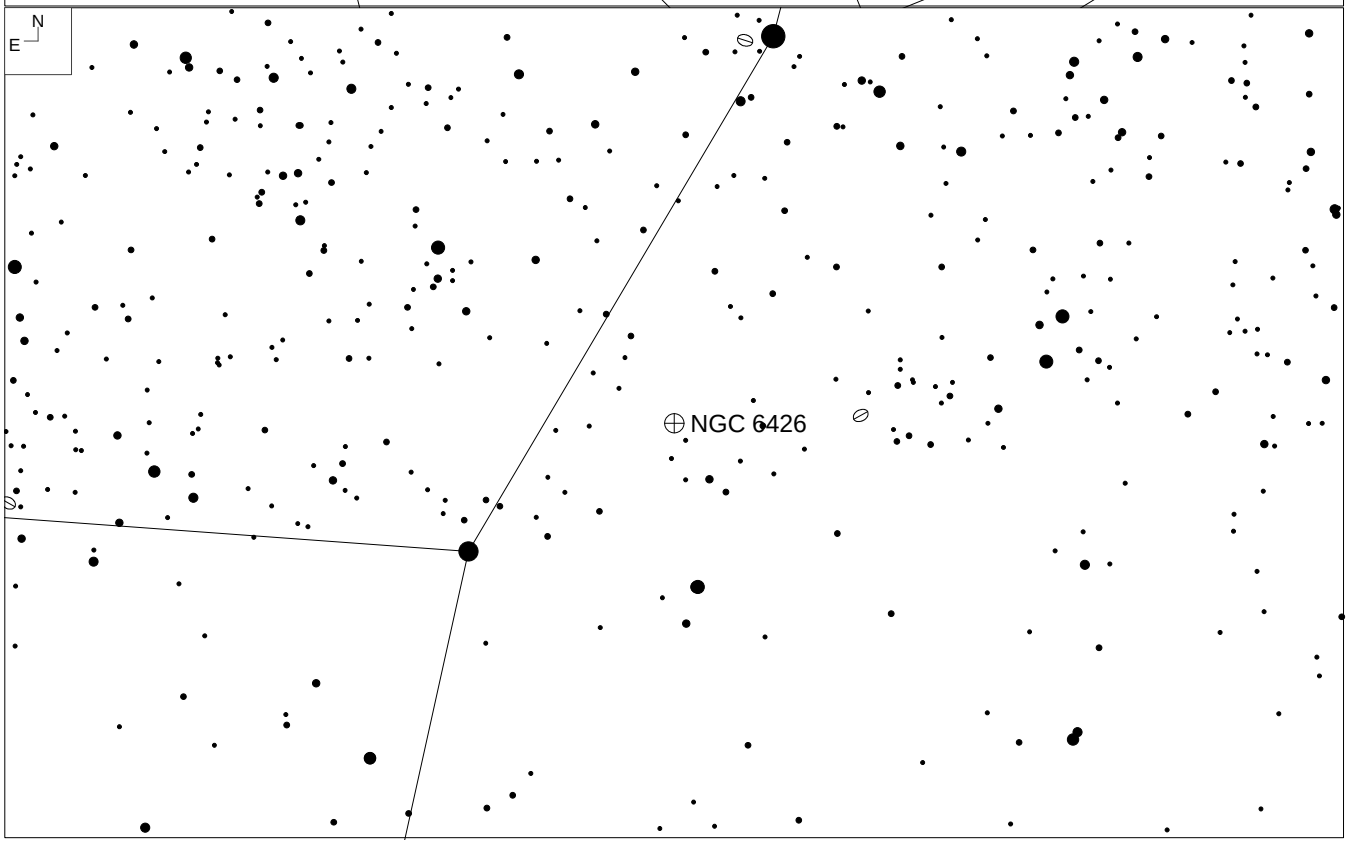




RA	Dec	V_{mag}	HB_{Mag}	$Bt*_{Mag}$	SB	Size (')
17 31 05.2	-29 58 54	12.5	18.6	16	12.9	1.2

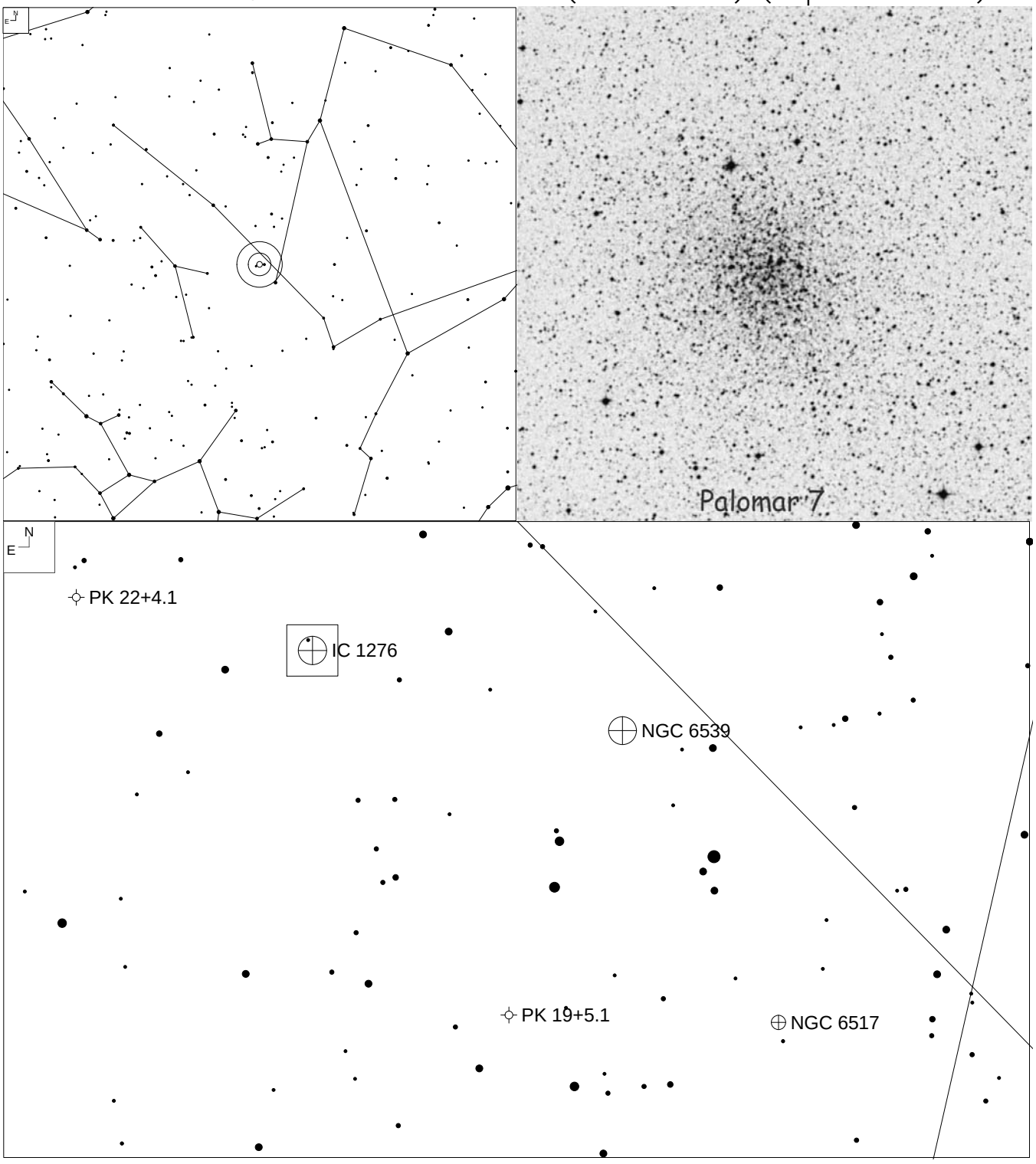
NGC 6426 (Ophiuchus)





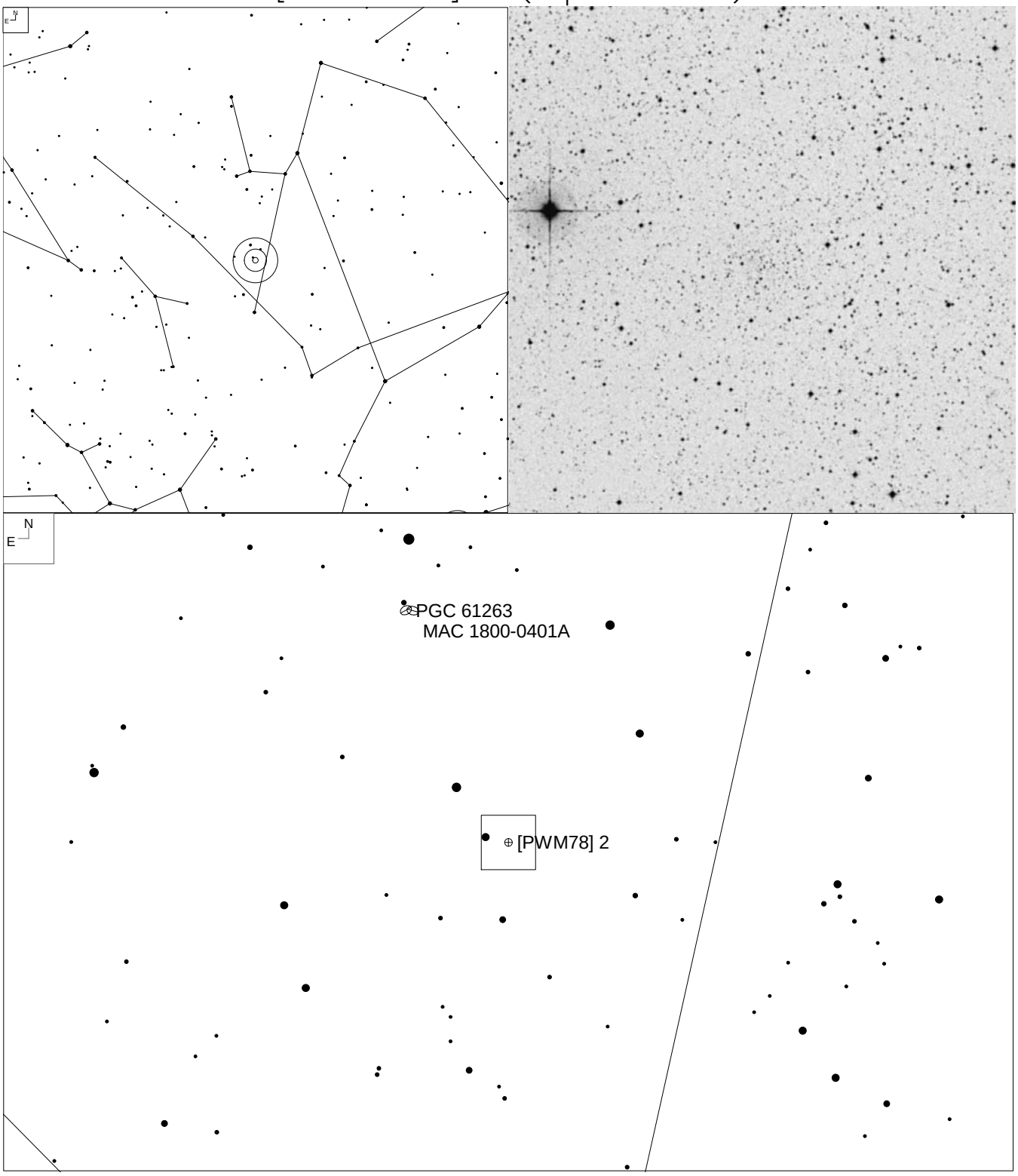
RA	Dec	V_{mag}	HB_{Mag}	Bt^*_{Mag}	SB	Size (')
17 44 54.7	-03 10 13	10.9	18.1	15.2	14	4.2

NGC 6539, 6517 and Pal 7 (IC 1276) (Ophiuchus)



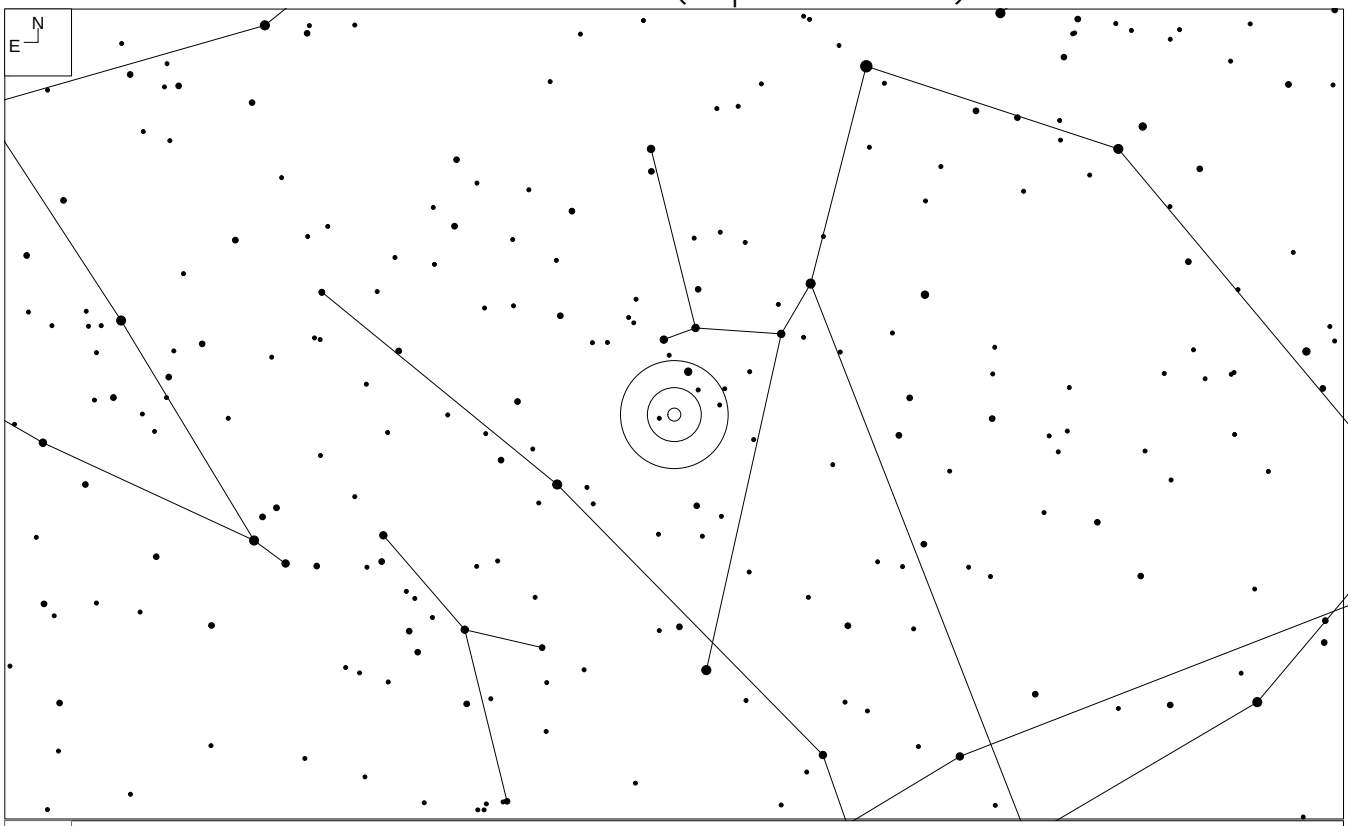
	RA	Dec	V_{mag}	HB_{Mag}	Bt^*_{Mag}	SB	Size (')
NGC 6539	18 04 49.8	-07 35 09	10.1	18	16	13.1	4
NGC 6517	18 01 50.6	-08 57 32	8.9	18.3	15.9	13.4	7.9
Palomar 7	18 10 44.2	-07 12 27	10.3	17.7	15.7	14.8	8

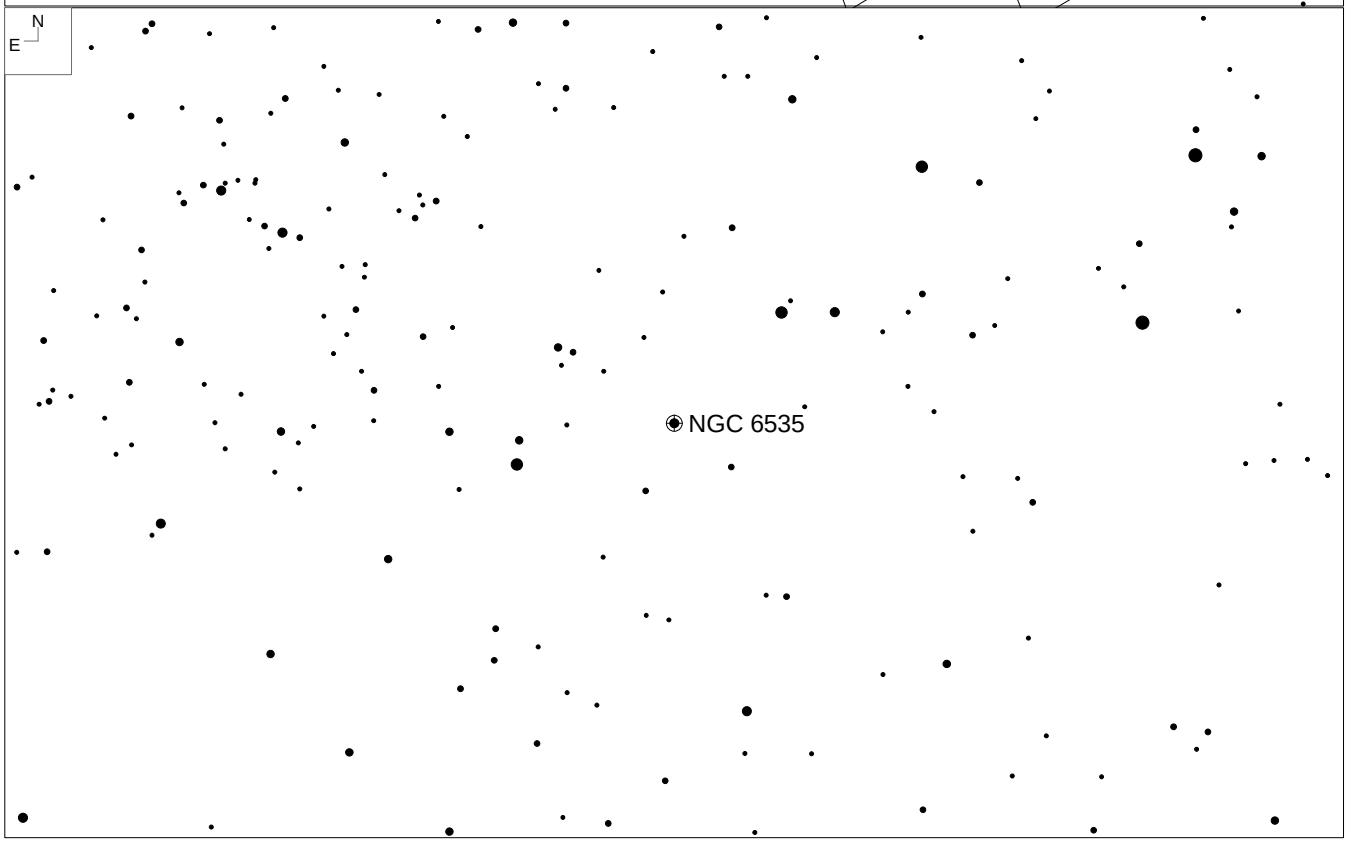
[PWM78] 2 (Ophiuchus)



RA	Dec	V_{mag}	HB_{Mag}	Bt^*_{Mag}	SB	Size (‘)
17 58 39.4	-05 04 21	-	-	-	-	2

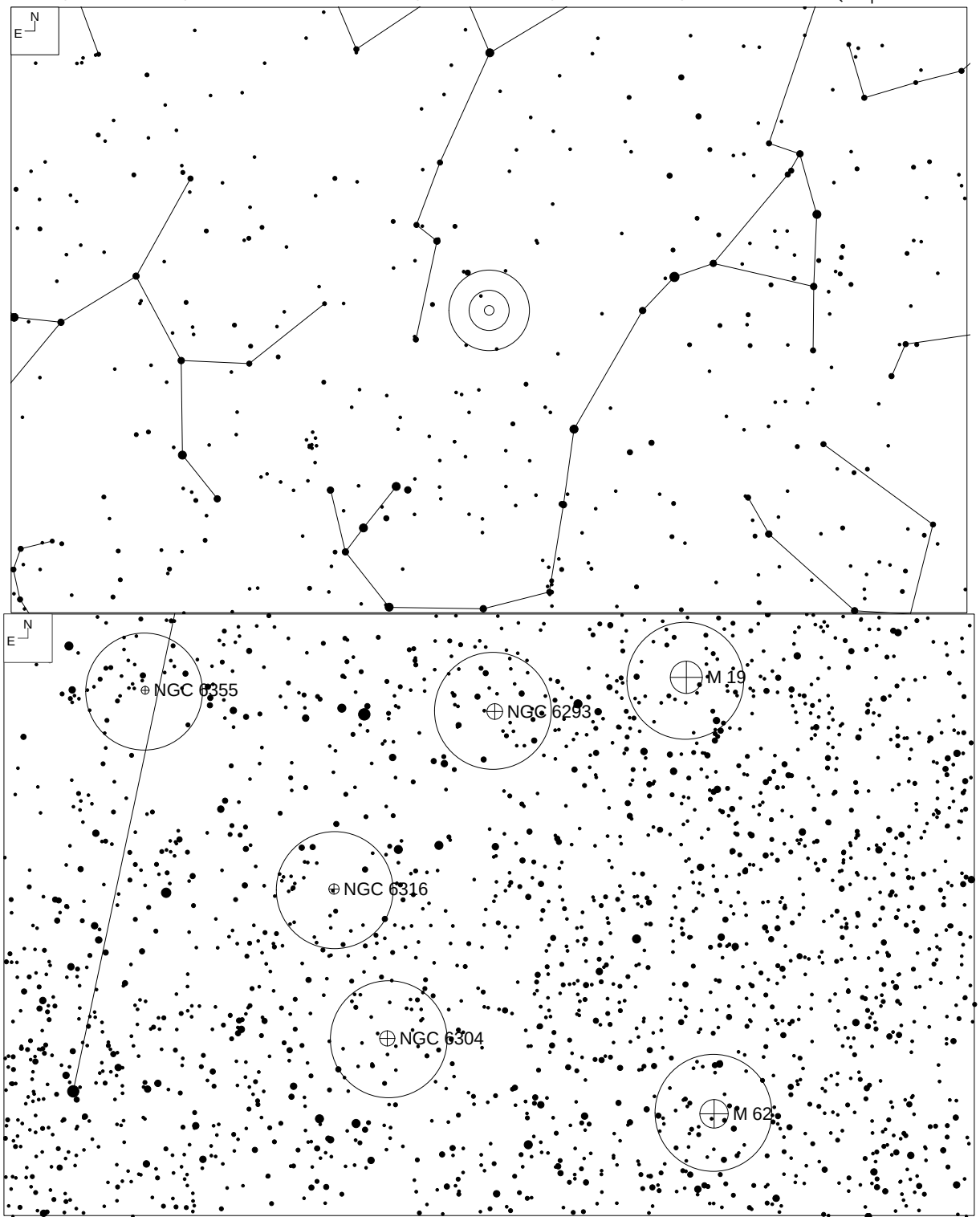
NGC 6535 (Ophiuchus)





RA	Dec	V_{mag}	HB_{Mag}	Bt^*_{Mag}	SB	Size (‘)
18 03 50.7	-00 17 49	9.3	15.8	12.8	12	3.4

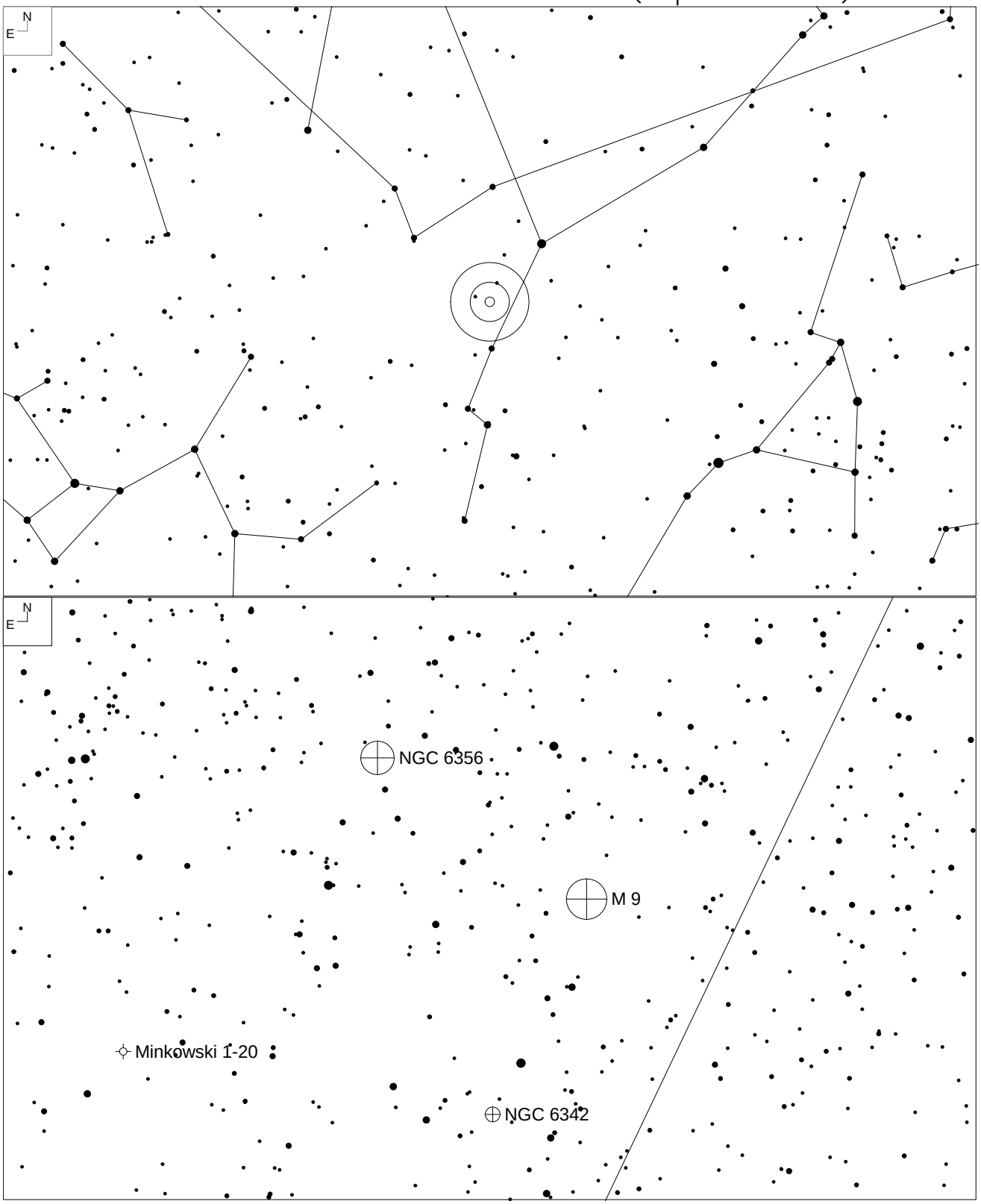
M19, M62, NGC 6293, 6304, 6316, 6355 (Ophiuchus)



field: 8.6 x 5.3°

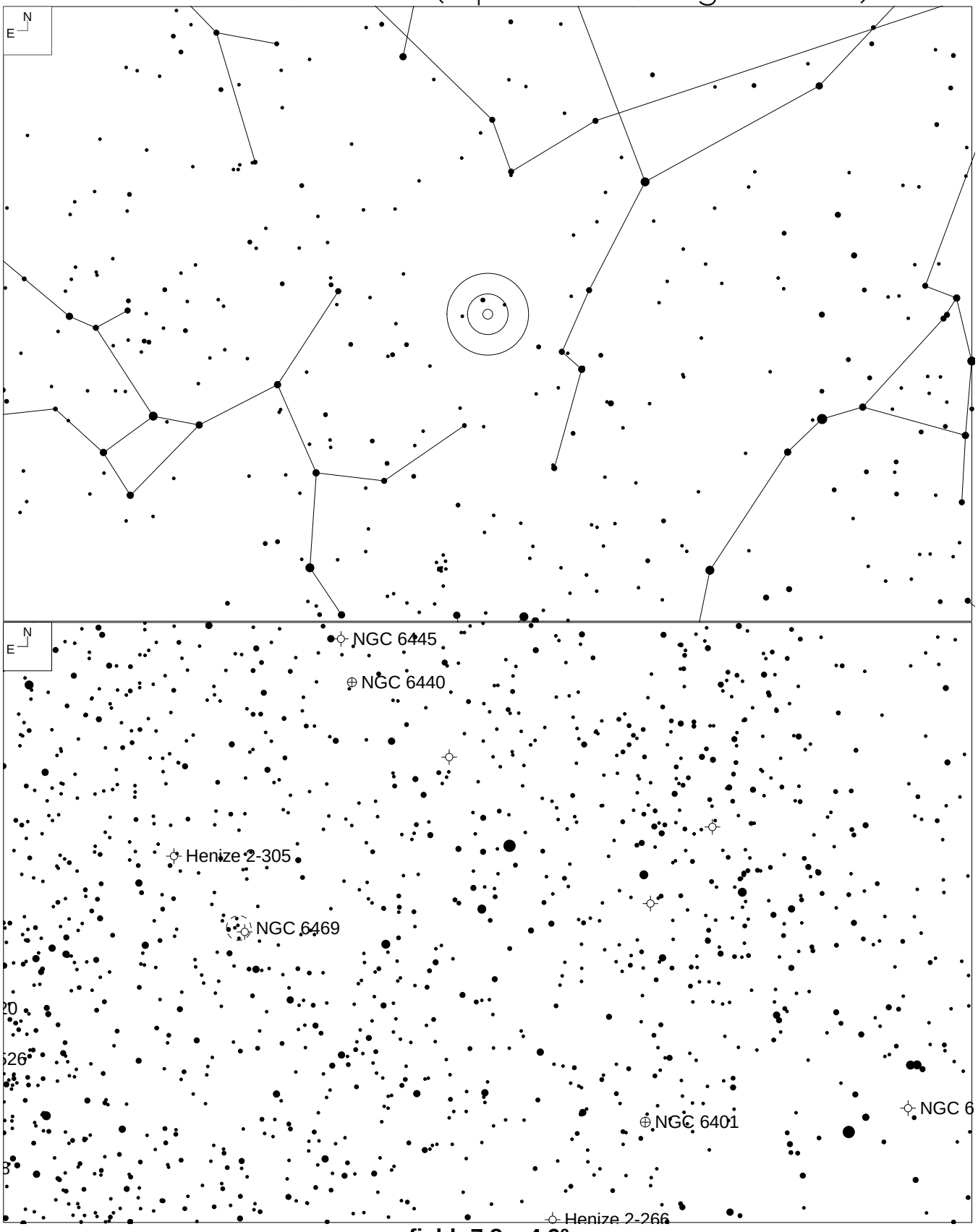
	RA	Dec	V_{mag}	HB_{Mag}	Bt^*_{Mag}	SB	Size (')
M19	17 02 37.7	-26 16 05	6.8	17	14	13	17
M62	17 01 12.6	-30 06 44	6.4	16.3	13.2	12.3	15
NGC 6293	17 10 10.4	-26 34 54	8.3	16.5	14.3	12.9	8.2
NGC 6304	17 14 32.5	-29 27 44	8.3	16.2	14.5	12.8	8
NGC 6316	17 16 37.4	-28 08 24	8.1	17.8	15	11.8	5.4
NGC 6355	17 23 58.6	-26 21 13	8.6	17.2	-	11.7	4.2

M9, NGC 6342 and 6356 (Ophiuchus)



	RA	Dec	V_{mag}	HB_{Mag}	Bt^*_{Mag}	SB	Size (')
M9	17 19 11.8	-18 30 59	7.8	16.2	13.5	13.2	12
NGC 6342	17 21 10.2	-19 35 14	9.5	16.9	15	12.7	4.4
NGC 6356	17 23 35.0	-17 48 47	8.2	17.7	15.1	13.2	10

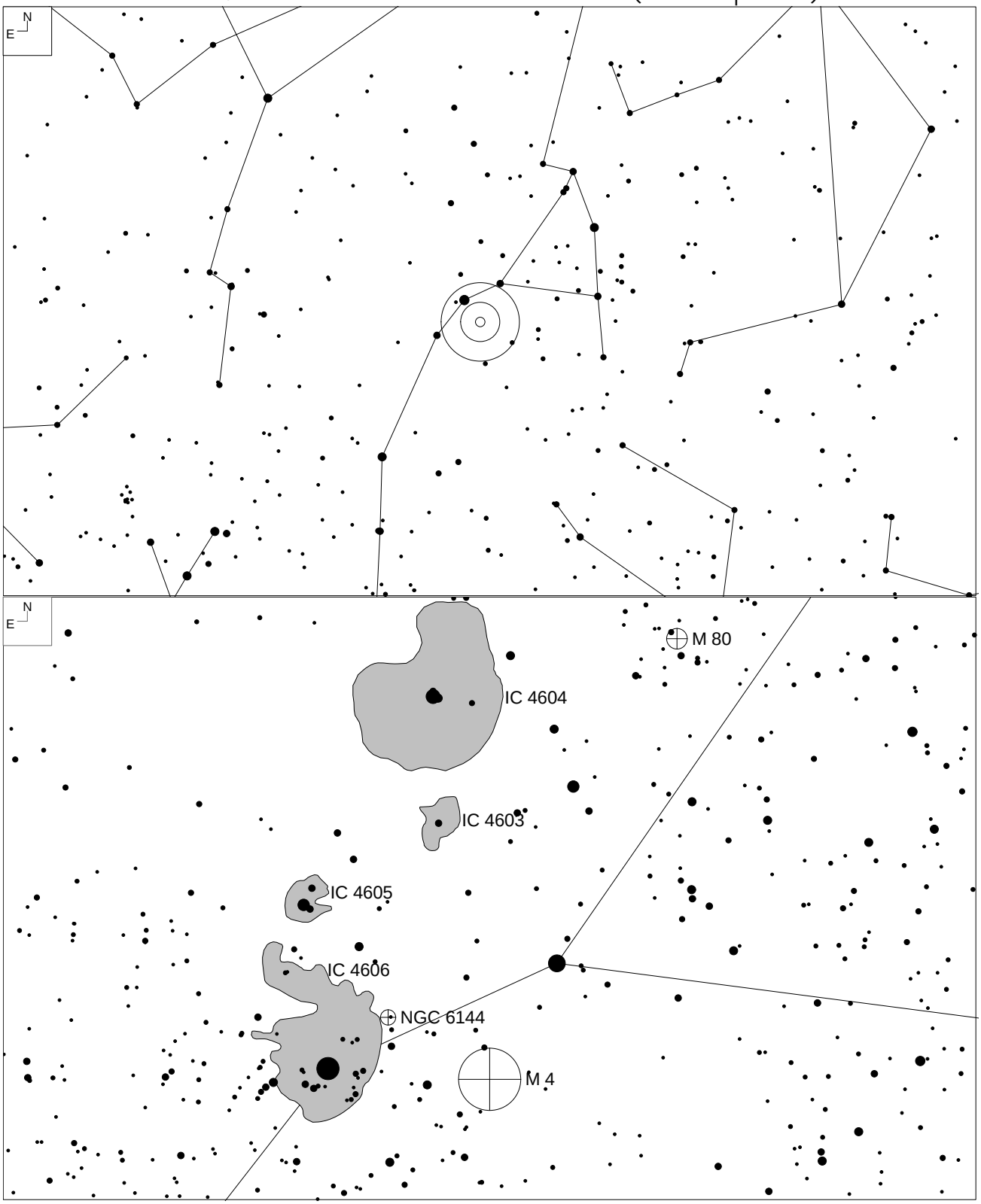
NGC 6401, 6440 (Ophiuchus, Sagittarius)



field: 7.8 x 4.9º

	RA	Dec	V_{mag}	HB_{Mag}	Bt^*_{Mag}	SB	Size (')
NGC 6401	17 38 36.9	-23 54 32	7.4	18	15.5	8.7	1.8
NGC 6440	17 48 52.6	-20 21 34	9.3	18.7	16.7	12.5	4.4

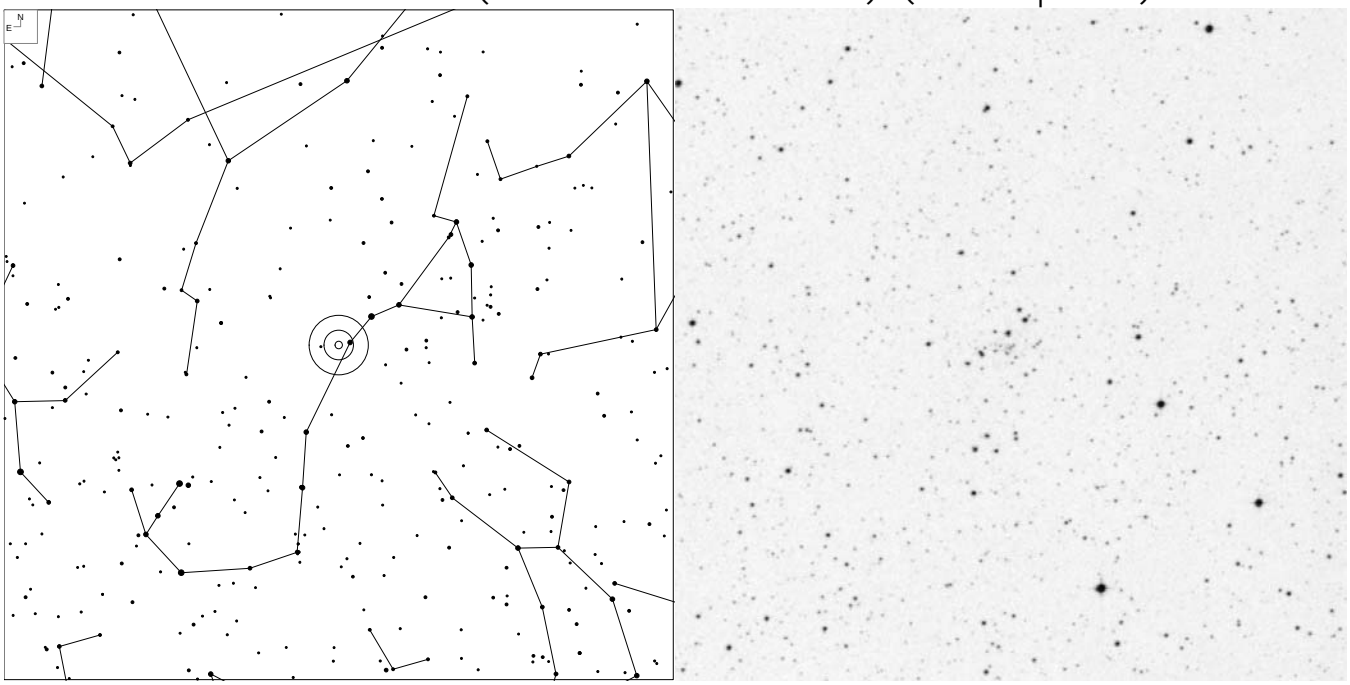
M4, M80 and NGC 6144 (Scorpius)

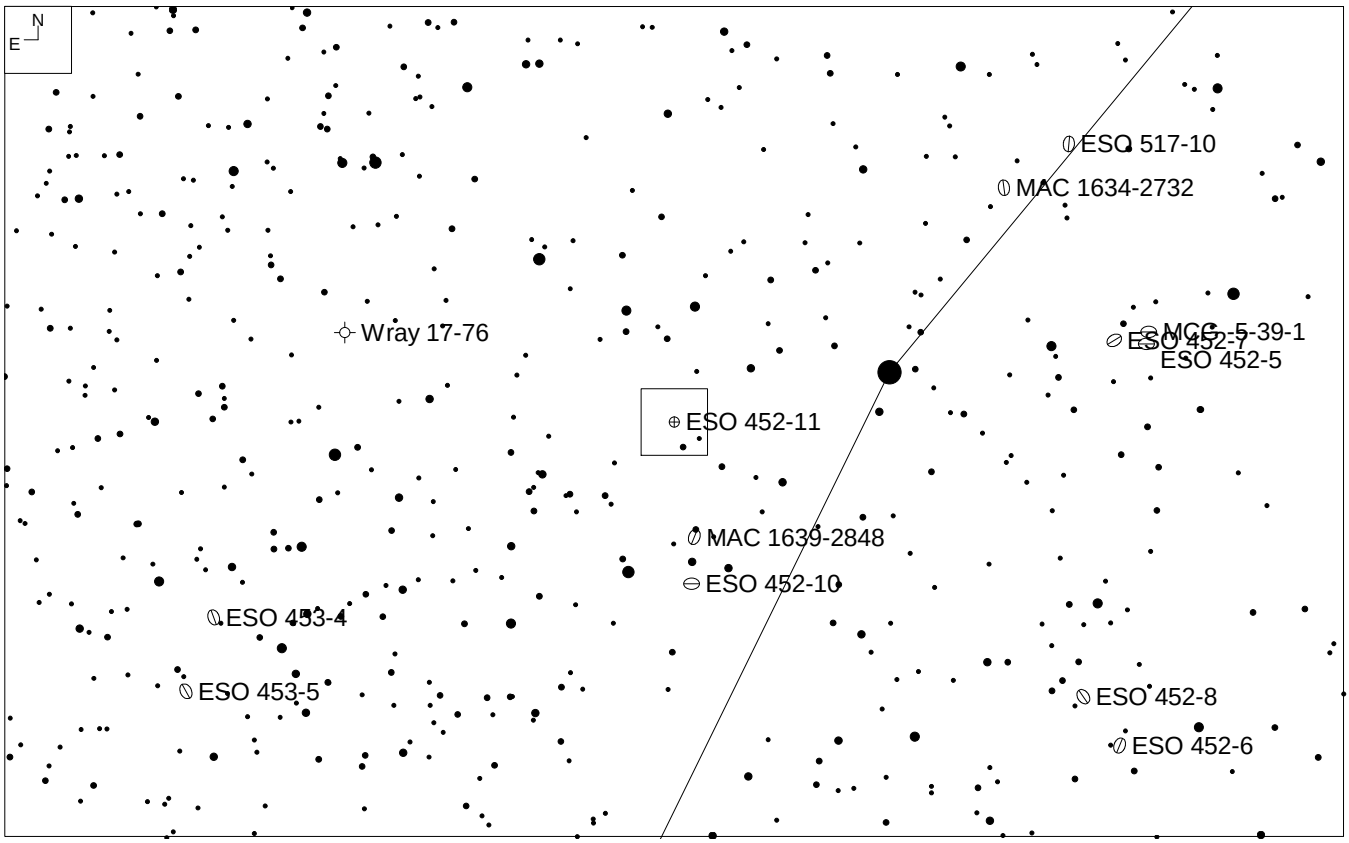


field: 7.8 x 4.9°

	RA	Dec	V_{mag}	HB_{Mag}	Bt^*_{Mag}	SB	Size (')
M4	16 23 35.5	-26 31 31	5.4	13.4	10.8	13.2	36
M80	16 17 02.5	-22 58 30	7.3	16.2	12.5	12.3	10
NGC 6144	16 27 14.1	-26 01 29	9	16.5	13.4	13.3	7.4

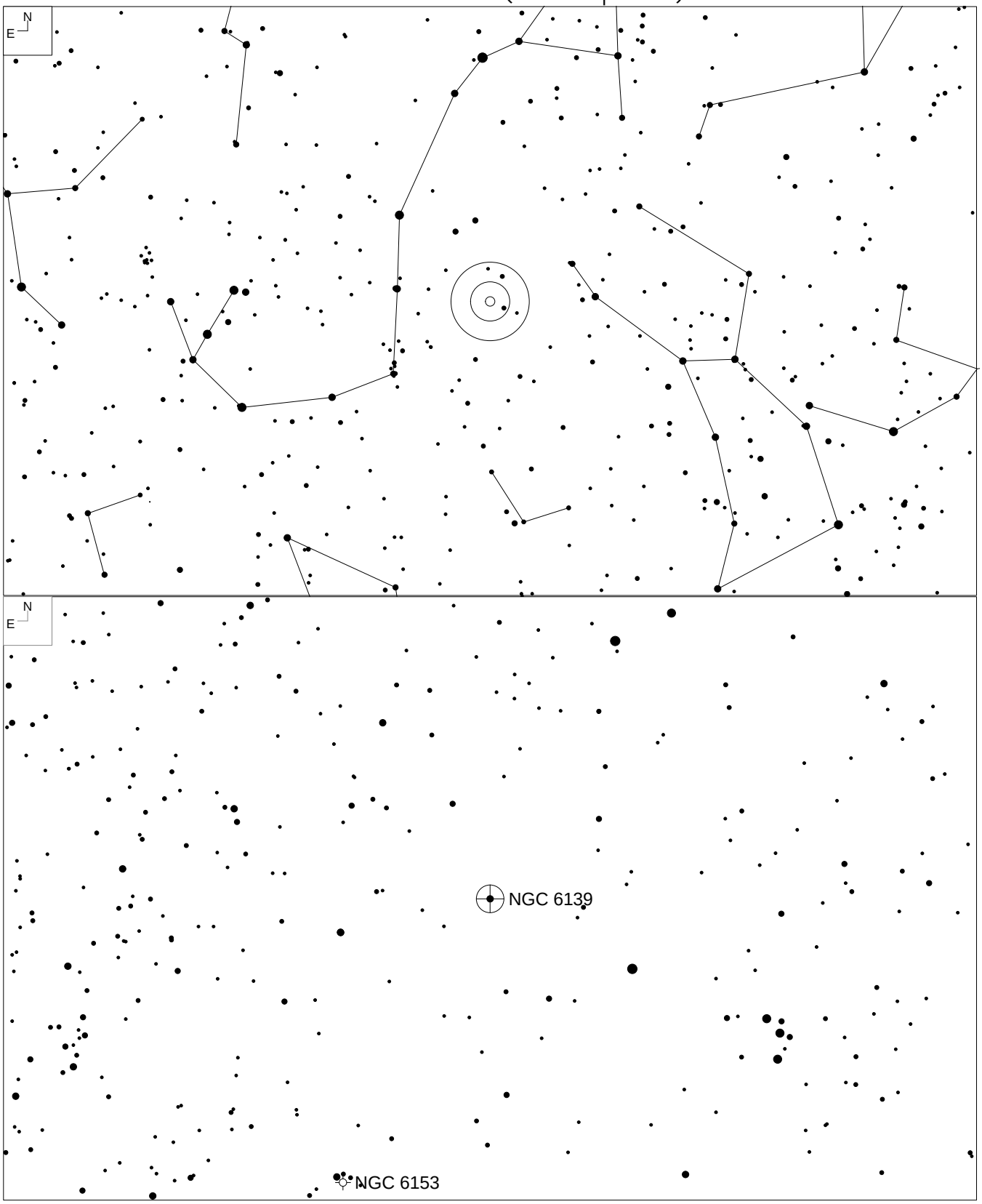
1636-283 (ESO 452-SC11) (Scorpius)





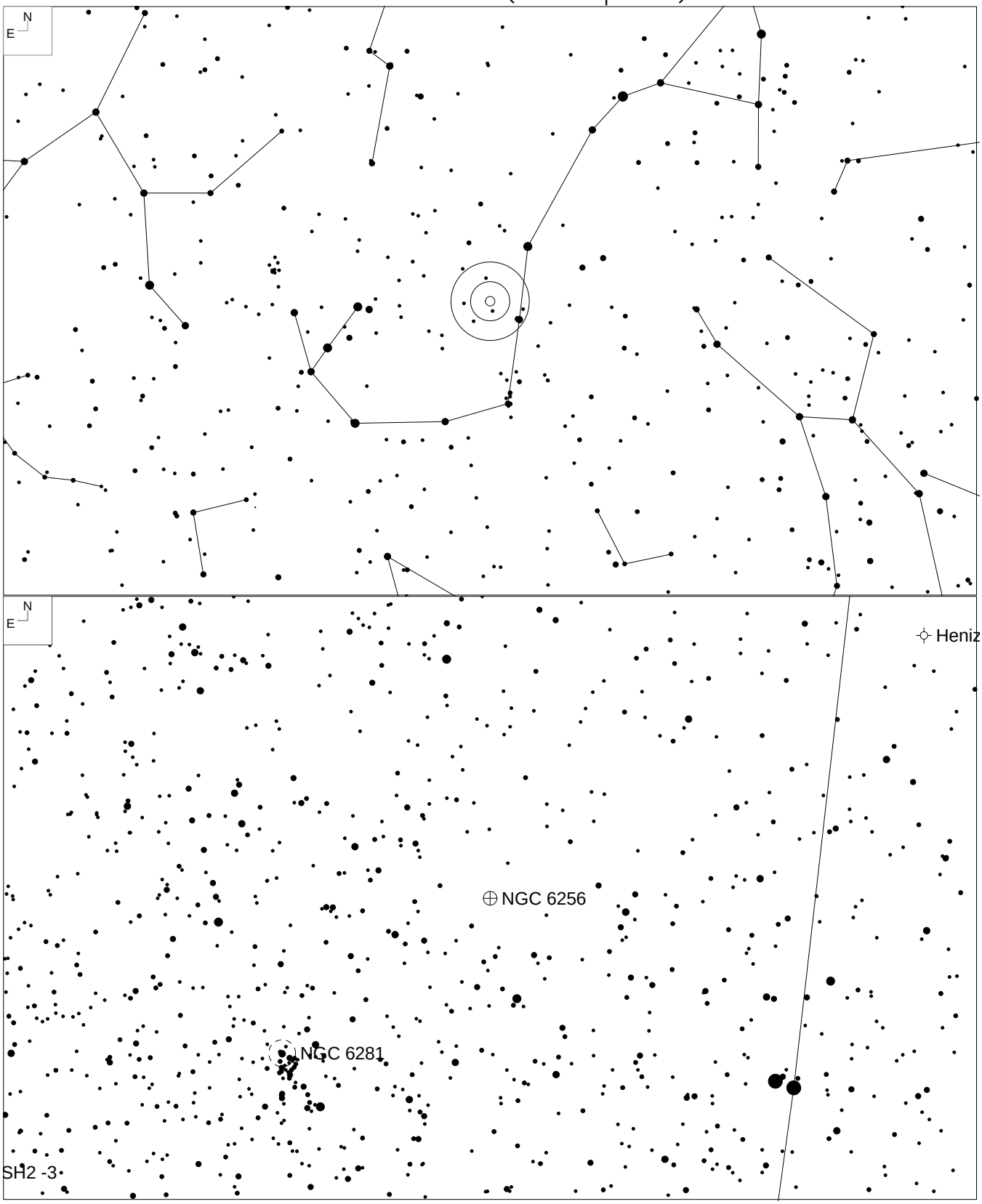
RA	Dec	V_{mag}	HB_{Mag}	$Bt*_{Mag}$	SB	Size (‘)
16 39 25.0	-28 23 54	12	16.6	15.3	12.4	1.2

NGC 6139 (Scorpius)



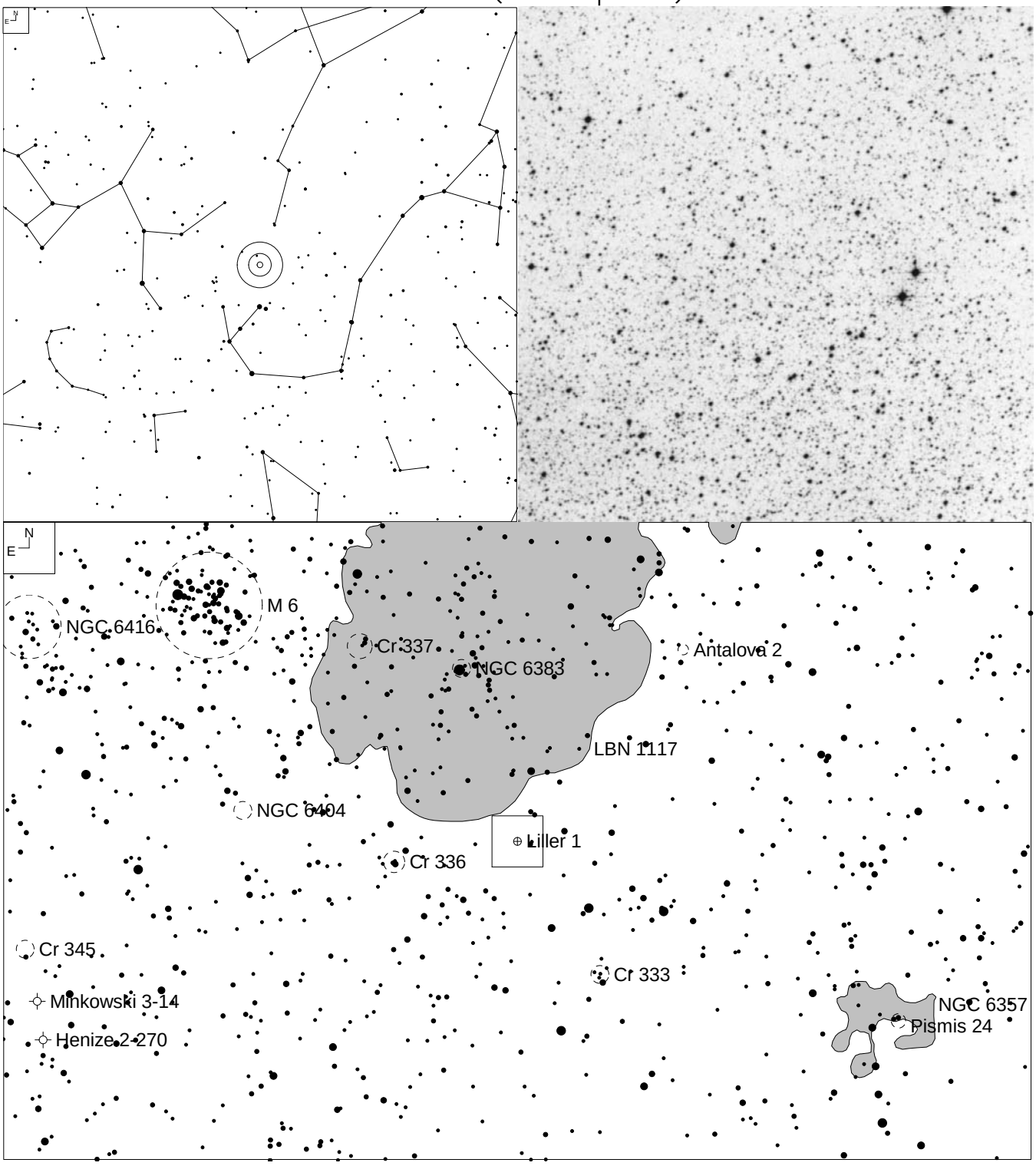
RA	Dec	V_{mag}	HB_{Mag}	$Bt*_{Mag}$	SB	Size (')
16 27 40.4	-38 50 56	9.1	17.9	15	13.7	8.2

NGC 6256 (Scorpius)



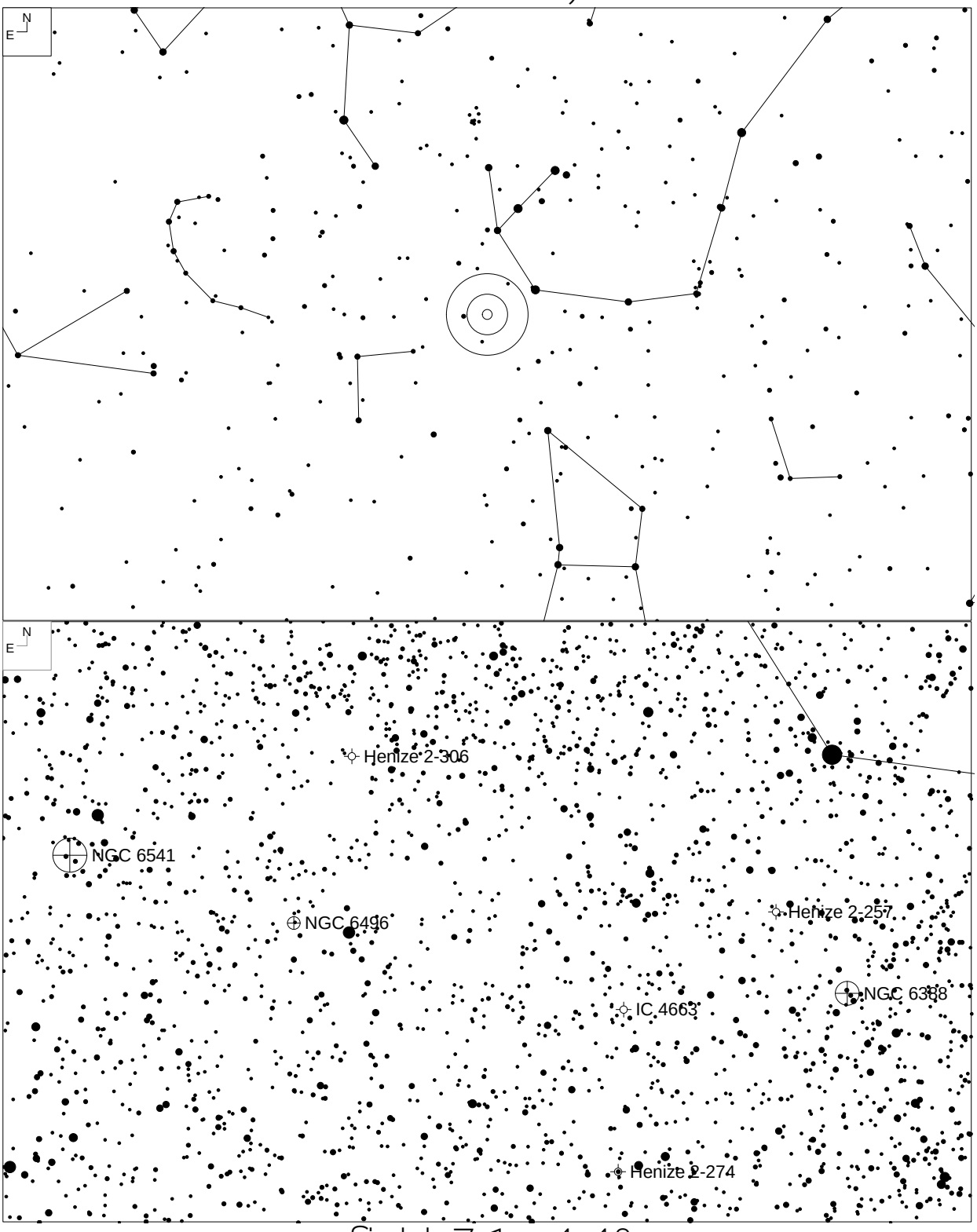
RA	Dec	V_{mag}	HB_{Mag}	Bt^*_{Mag}	SB	Size (‘)
16 59 32.6	-37 07 17	11.3	18.2	15.3	14.4	4.1

Liller 1 (Scorpius)



RA	Dec	V_{mag}	HB_{Mag}	Bt^*_{Mag}	SB	Size (‘)
17 33 24.5	-33 23 24	15.8	24.4	20.5	13.2	0.3

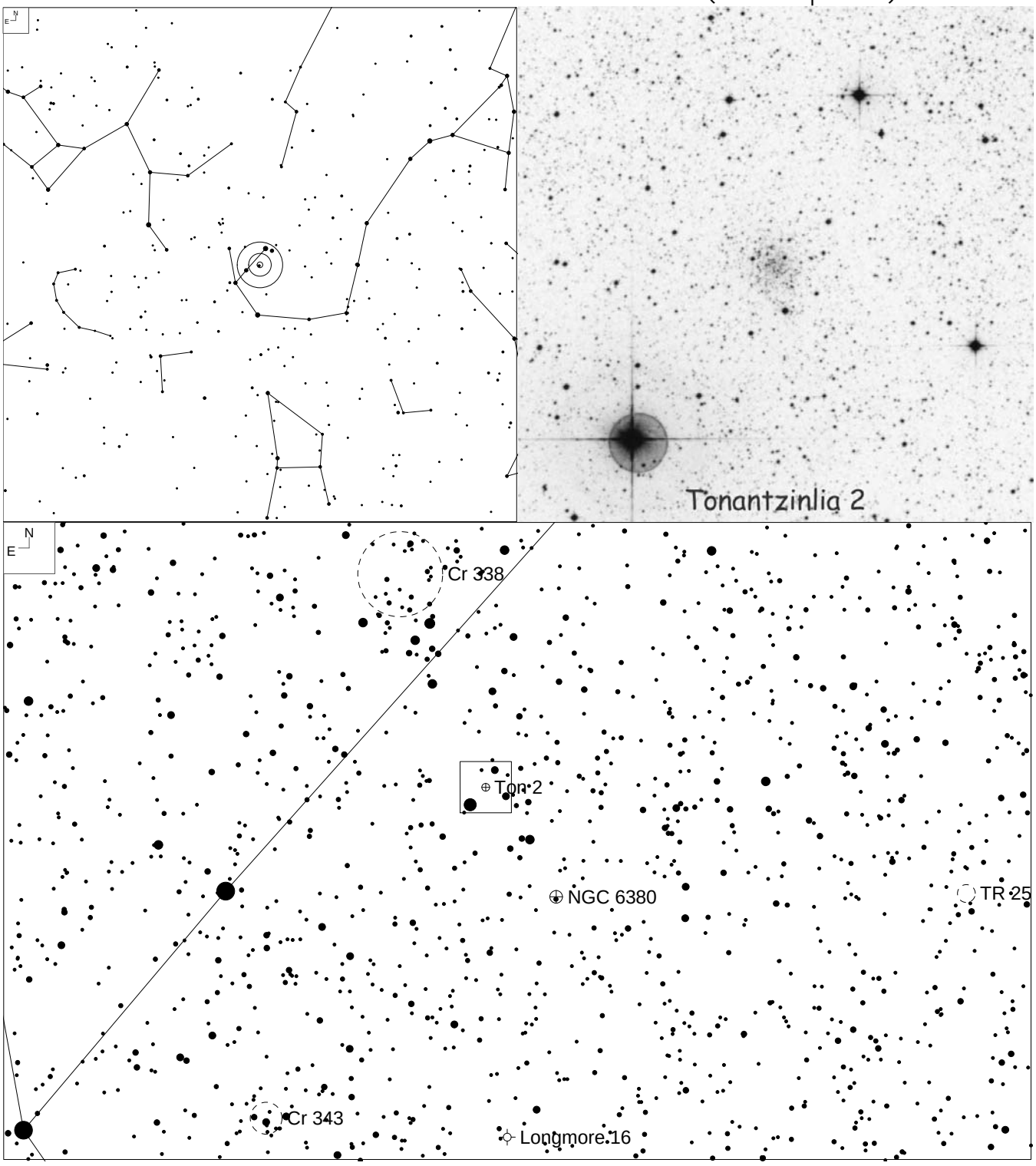
NGC 6388, 6496 and 6541 (Scorpius, Corona Australis)



field: 7.1 x 4.4°

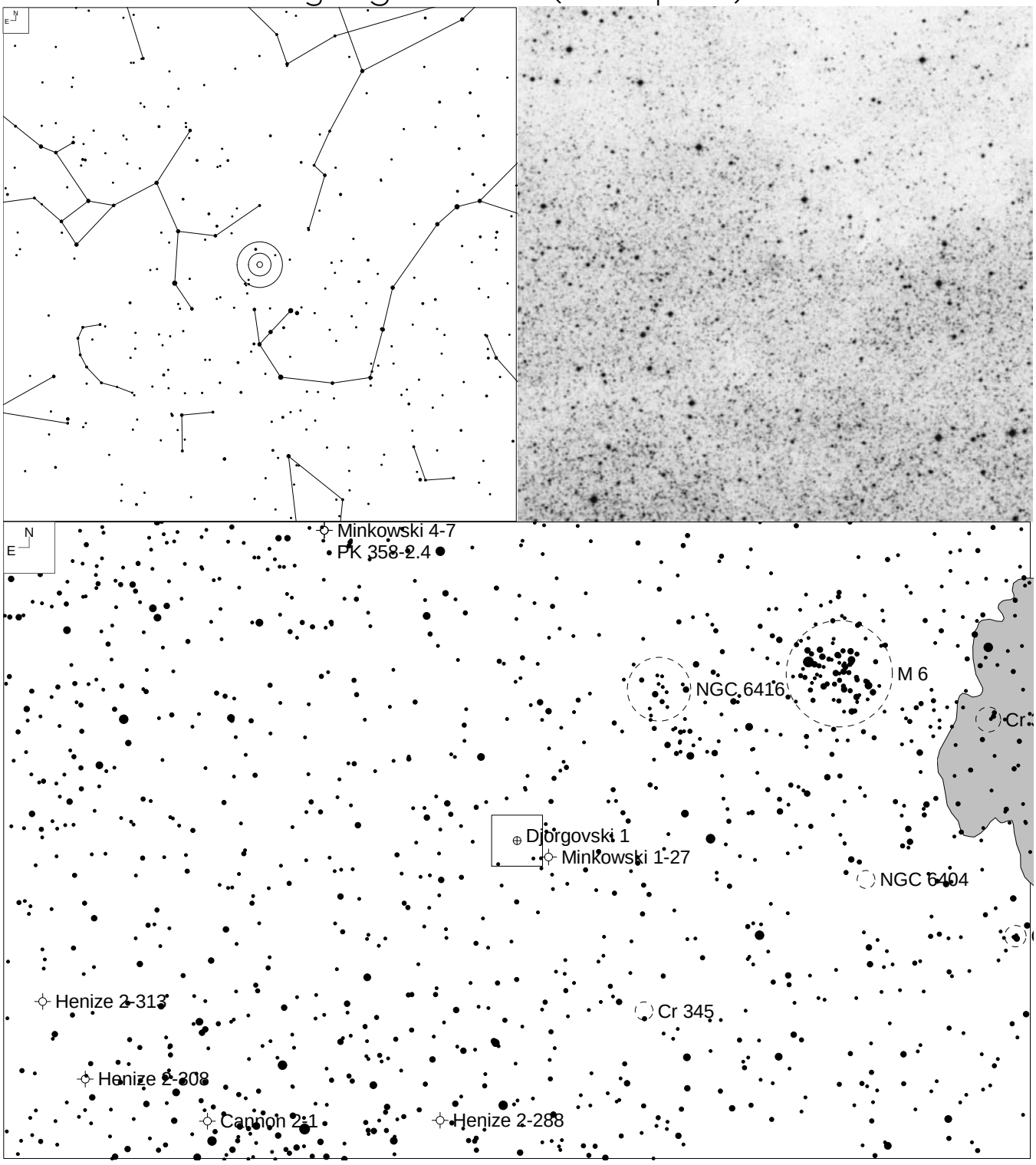
	RA	Dec	V_{mag}	HB_{Mag}	Bt^*_{Mag}	SB	Size (')
NGC 6388	17 36 17.0	-44 44 06	6.8	17.2	14.8	11.9	10.4
NGC 6496	17 59 02.0	-44 15 54	8.6	16.5	14.3	12.3	5.6
NGC 6541	18 08 02.2	-43 42 20	6.3	15.3	12.1	12.2	15

NGC 6380 and Tonantzinlia 2 (Scorpius)



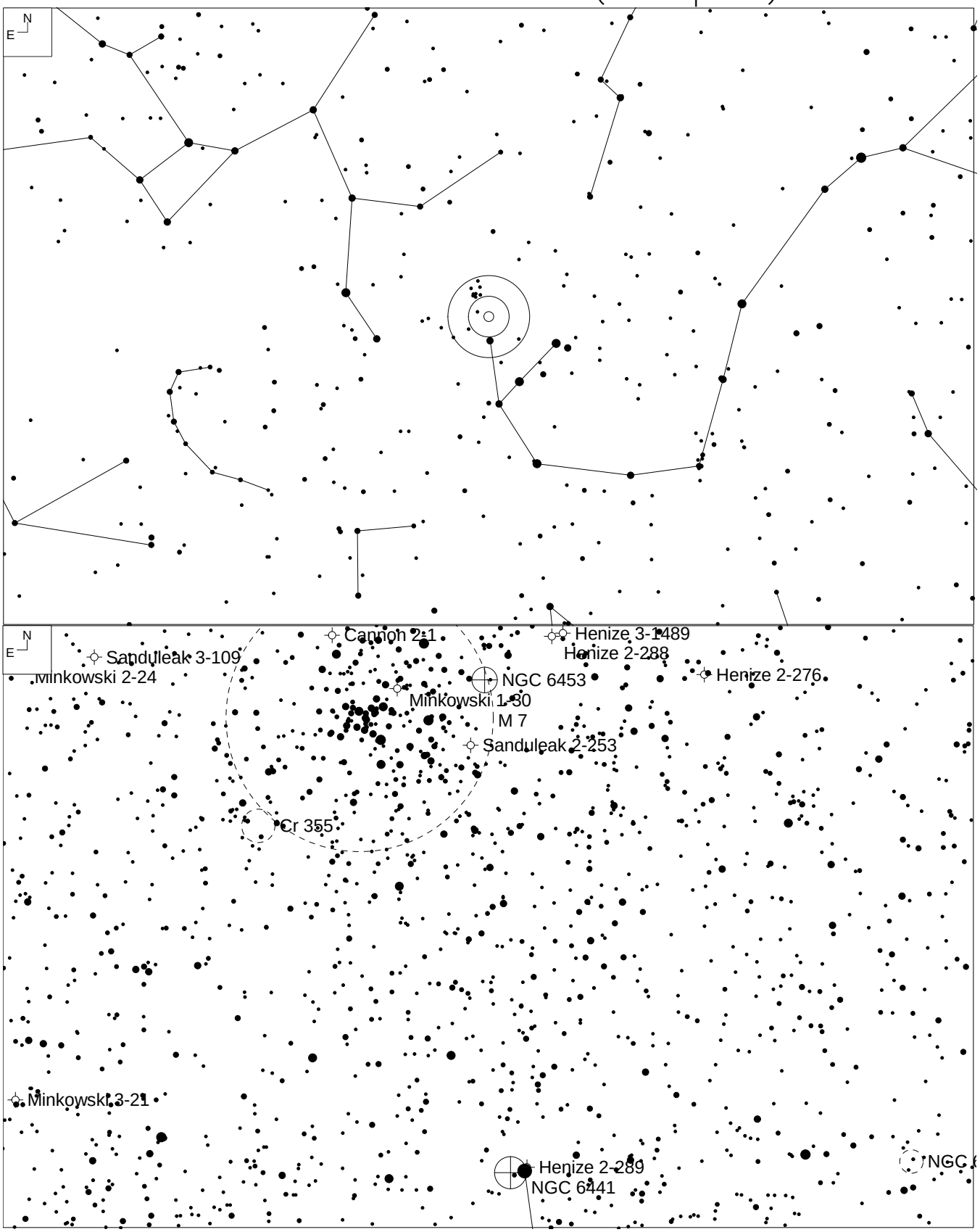
	RA	Dec	V_{mag}	HB_{Mag}	Bt^*_{Mag}	SB	Size (')
NGC 6380	17 34 28.0	-39 04 09	11.5	19.5	17	14.3	3.6
Ton 2	17 36 10.5	-38 33 12	12.2	18.2	-	-	-

Djorgovski 1 (Scorpius)



RA	Dec	V_{mag}	HB_{Mag}	Bt^*_{Mag}	SB	Size (')
17 47 28.3	-33 03 56	13.6	20.8	-	13.1	0.8

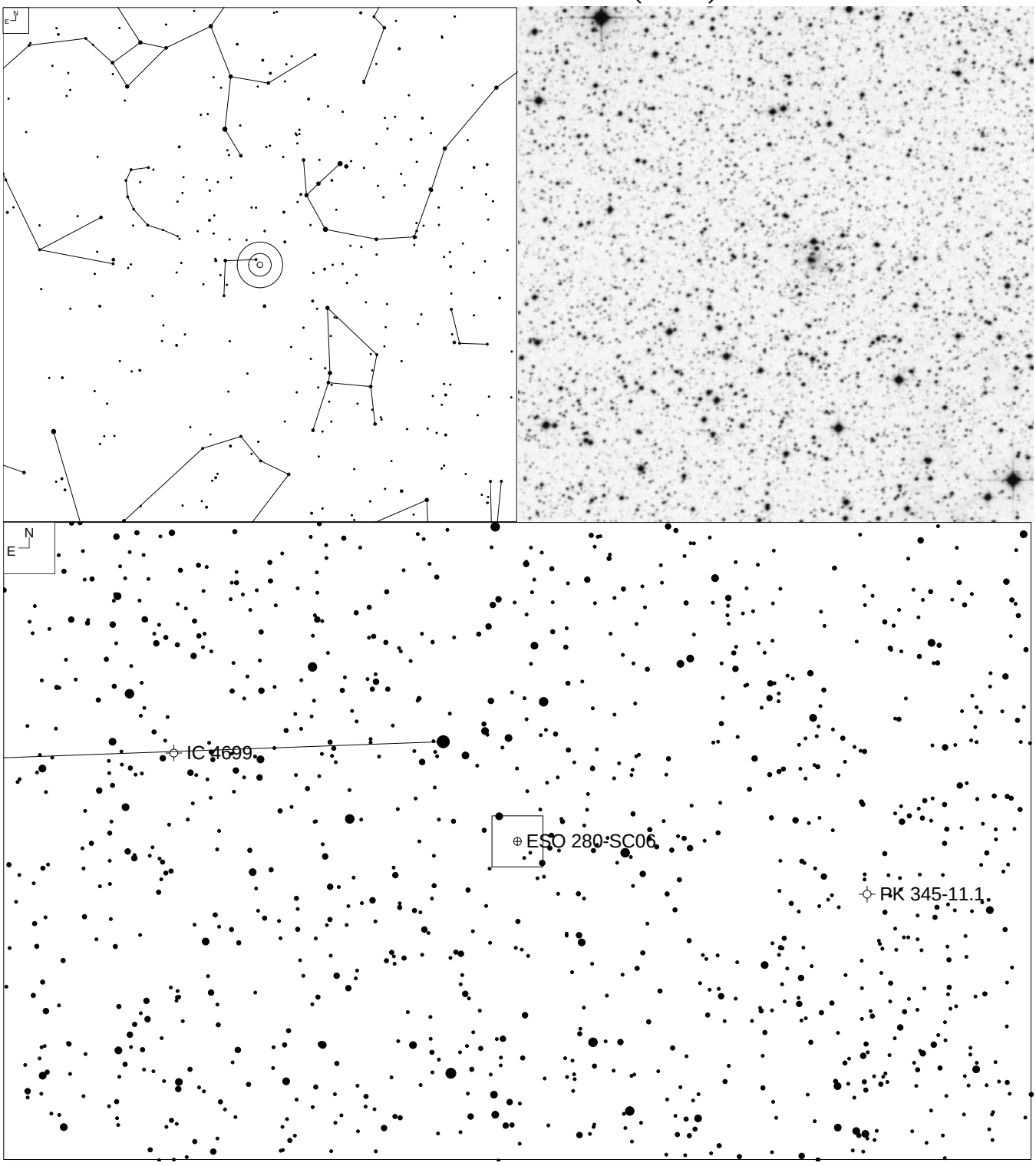
NGC 6441 and 6453 (Scorpius)



Look for JaFu2 in NGC 6441, a very tough PNe (page 101)

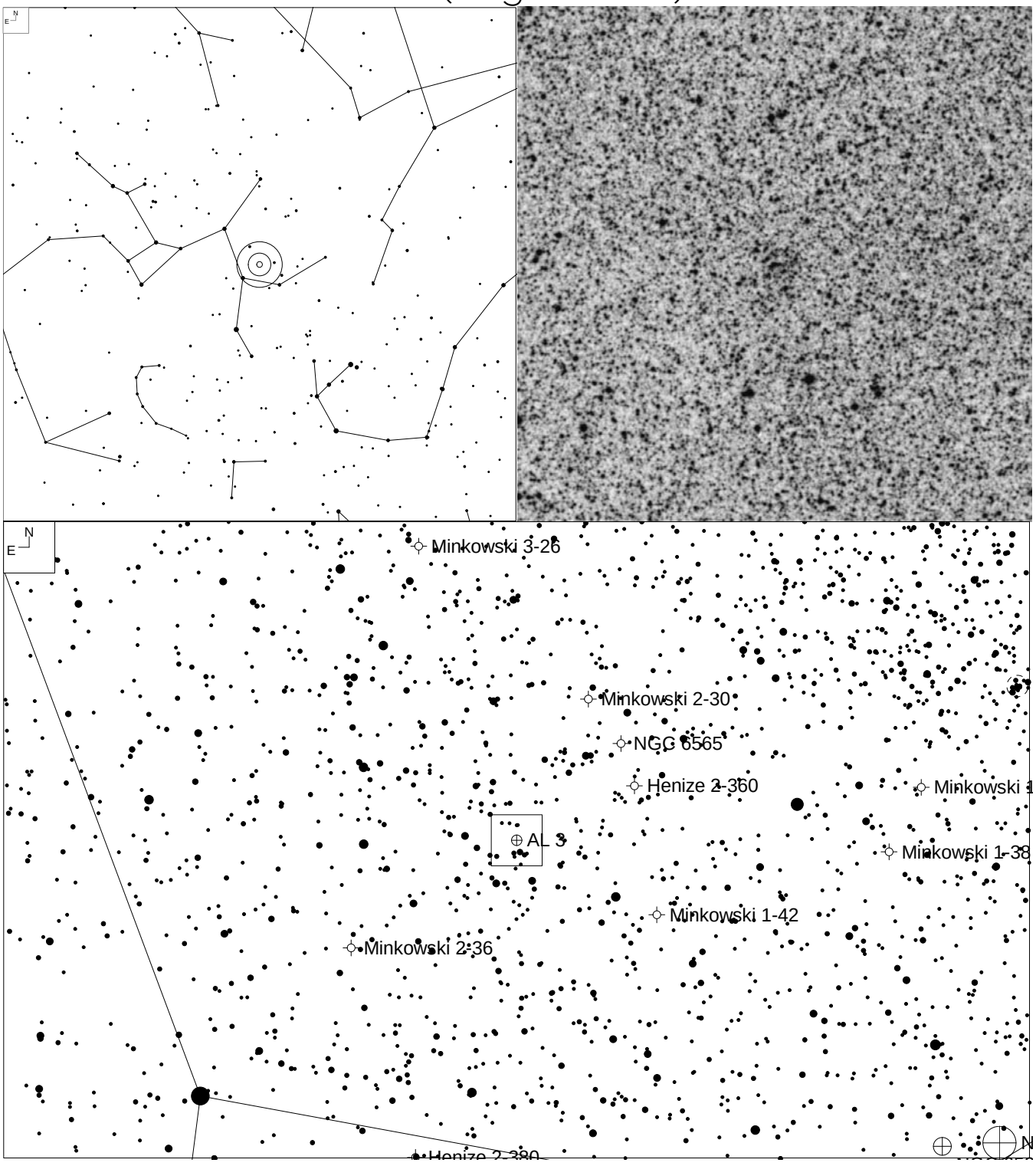
	RA	Dec	V_{mag}	HB_{Mag}	Bt^*_{Mag}	SB	Size (‘)
NGC 6441	17 50 12.9	-37 03 04	7.2	17.5	15.4	12.1	9.6
NGC 6453	17 50 51.8	-34 35 55	10.2	17.5	14.3	14.6	7.6

ESO 280-SC06 (Ara)



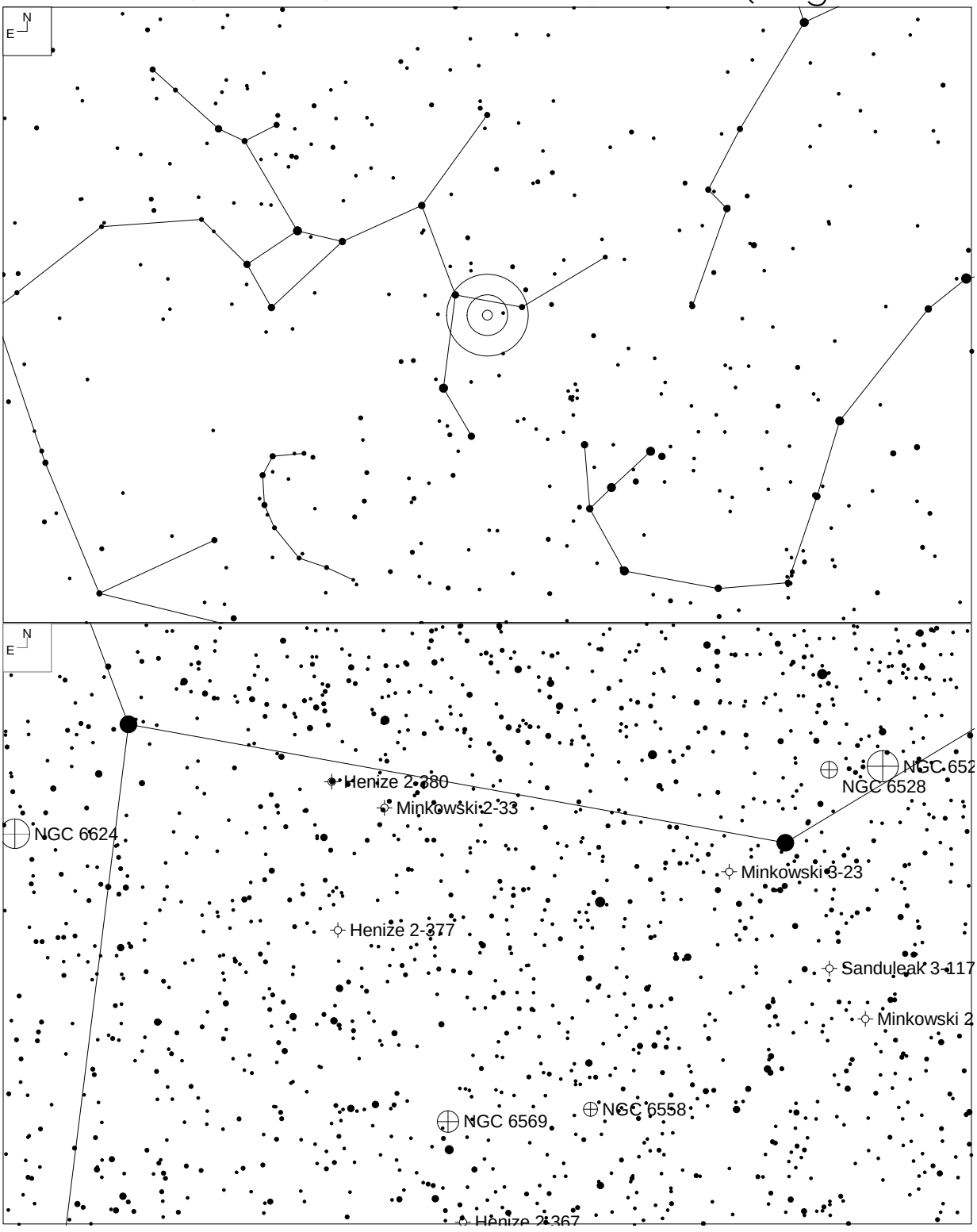
RA	Dec	V_{mag}	HB_{Mag}	Bt^*_{Mag}	SB	Size (‘)
18 09 12.7	-46 25 26	-	17.4	14	-	1.4

AL3 (Sagittarius)



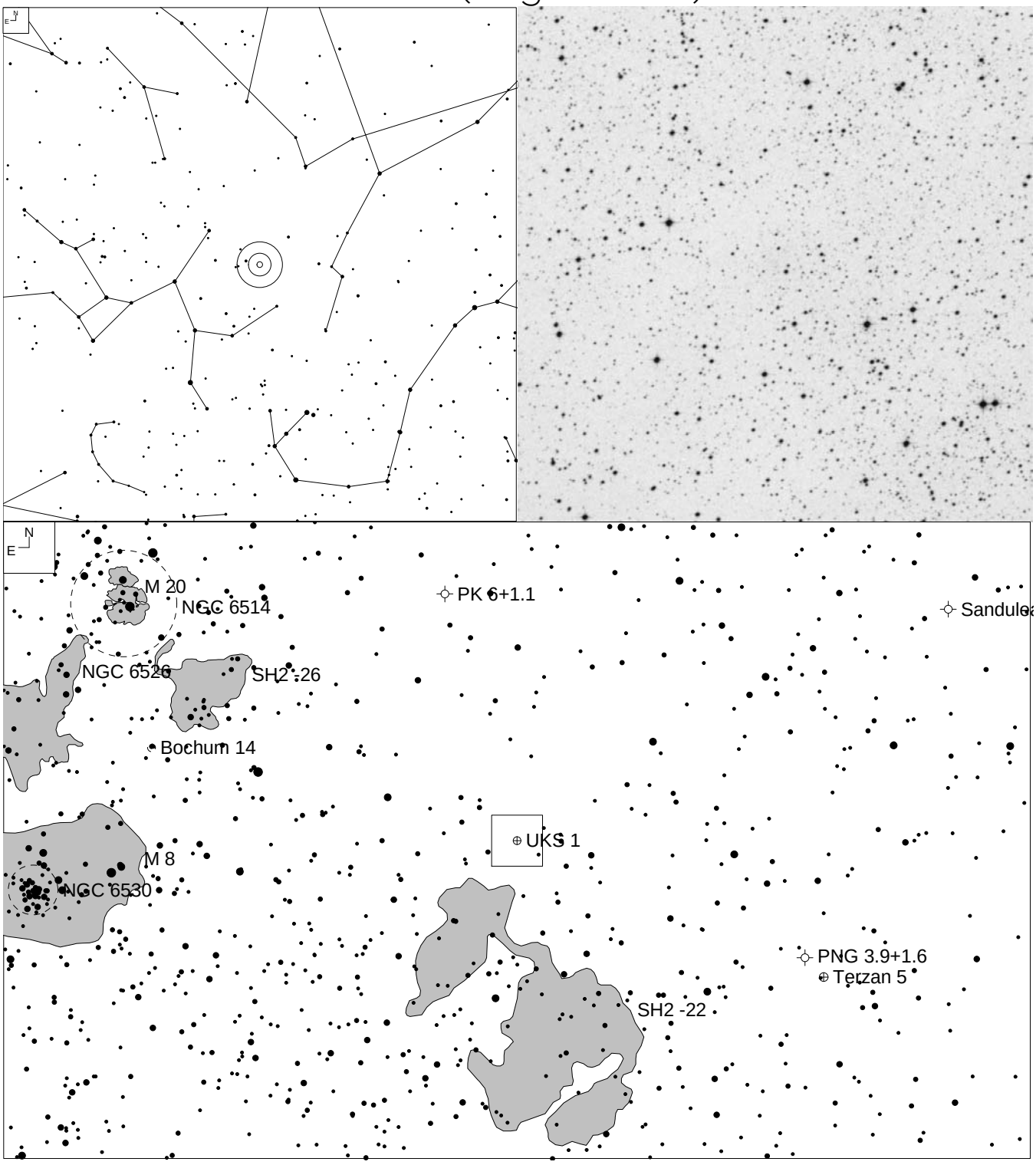
RA	Dec	V_{mag}	HB_{Mag}	Bt^*_{Mag}	SB	Size (')
18 14 06.6	-28 38 06	14.0	-	-	-	3.0'

NGC 6522, 6528, 6558, 6569, 6624 (Sagittarius)



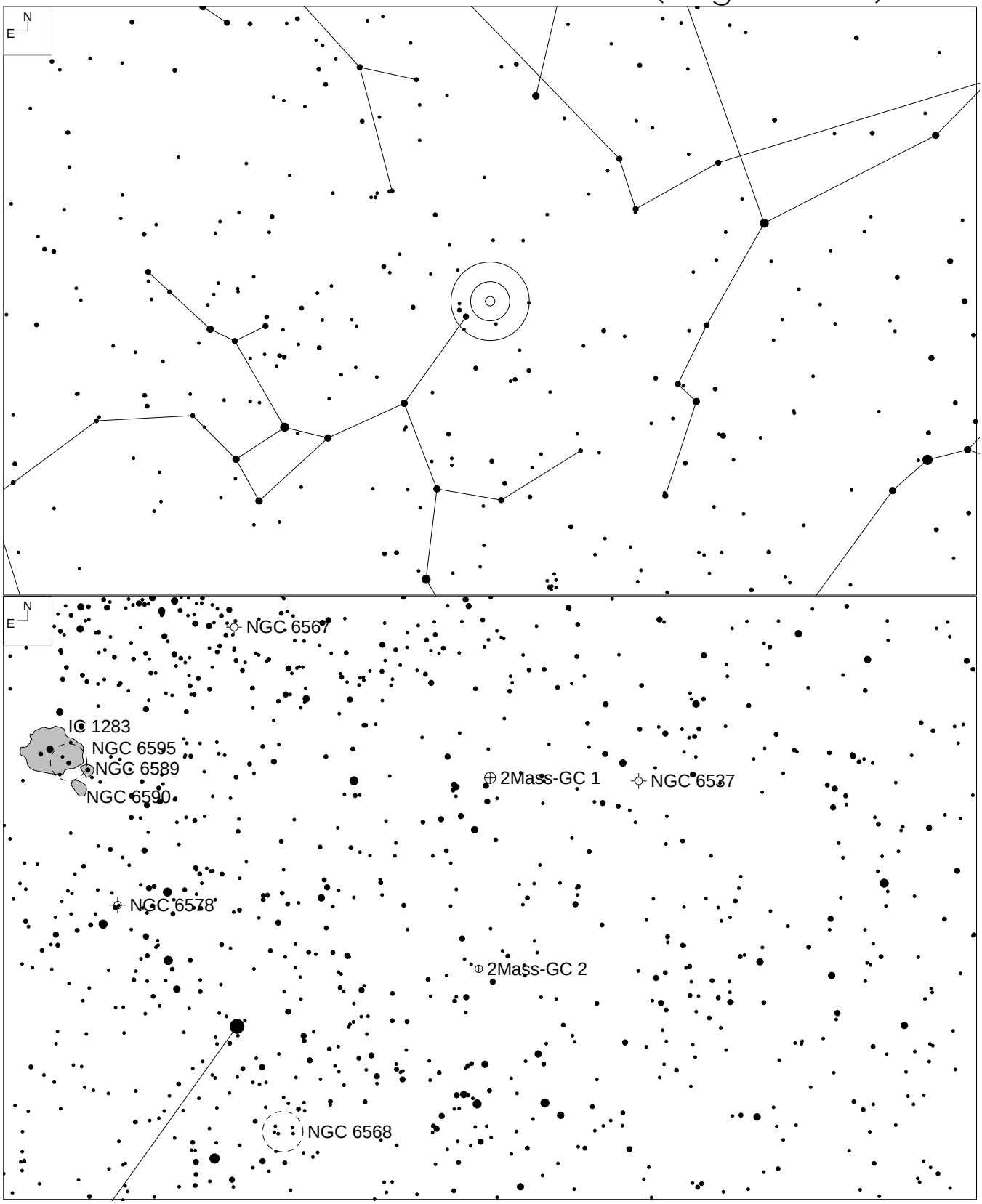
	RA	Dec	V_{mag}	HB_{Mag}	Bt^*_{Mag}	SB	Size (')
NGC 6522	18 03 35.0	-30 02 02	9.9	16.9	14.1	14.8	9.4
NGC 6528	18 04 49.6	-30 03 21	9.6	17.1	15.5	13.1	5
NGC 6558	18 10 17.6	-31 45 47	8.6	16.7	-	-	-
NGC 6569	18 13 38.9	-31 49 35	8.4	17.5	14.9	12.4	6.4
NGC 6624	18 23 40.5	-30 21 40	7.6	16.1	14	12.3	8.8

UKS 1 (Sagittarius)



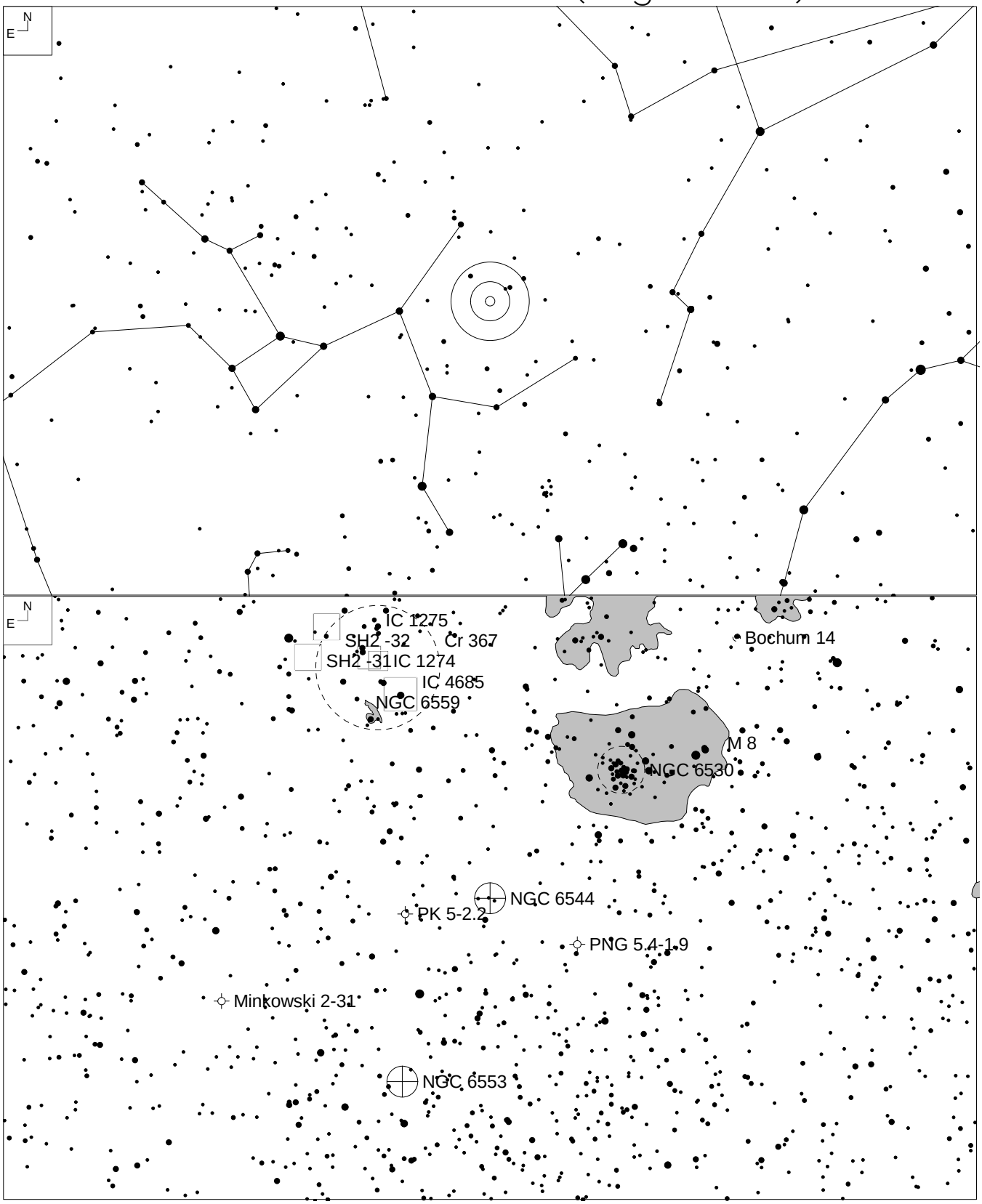
RA	Dec	V_{mag}	HB_{Mag}	Bt^*_{Mag}	SB	Size (')
17 54 27.2	-24 08 43	17.3	25.5	22	18.8	2

2MASS-GC1 and 2MASS-GC2 (Sagittarius)



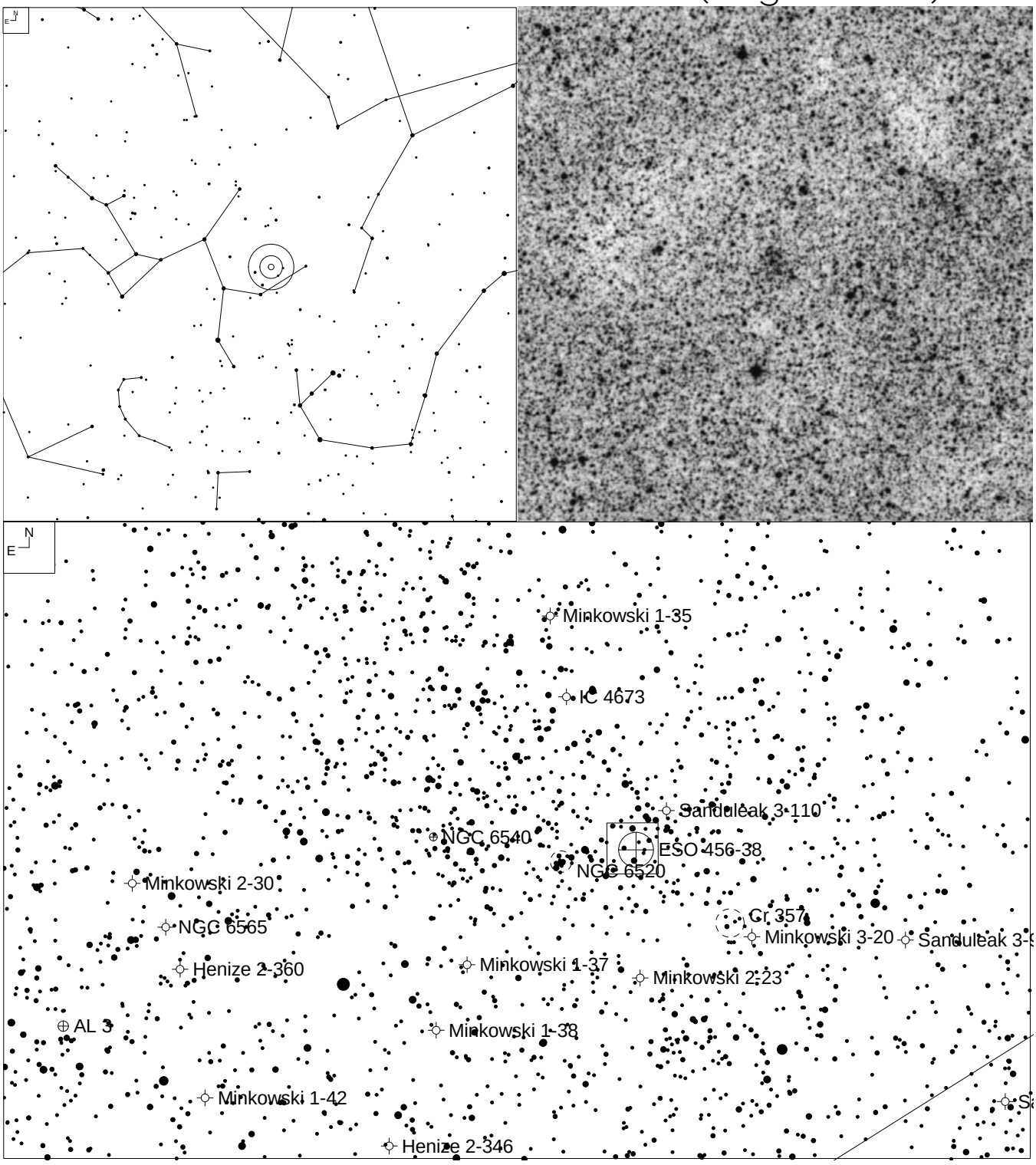
	RA	Dec	V_{mag}	HB_{Mag}	Bt^*_{Mag}	SB	Size (')
GC1	18 08 21.8	-19 49 47	-	-	-	-	3.3
GC2	18 08 36.5	-20 46 44	-	-	-	-	1.9

NGC 6544 and 6553 (Sagittarius)



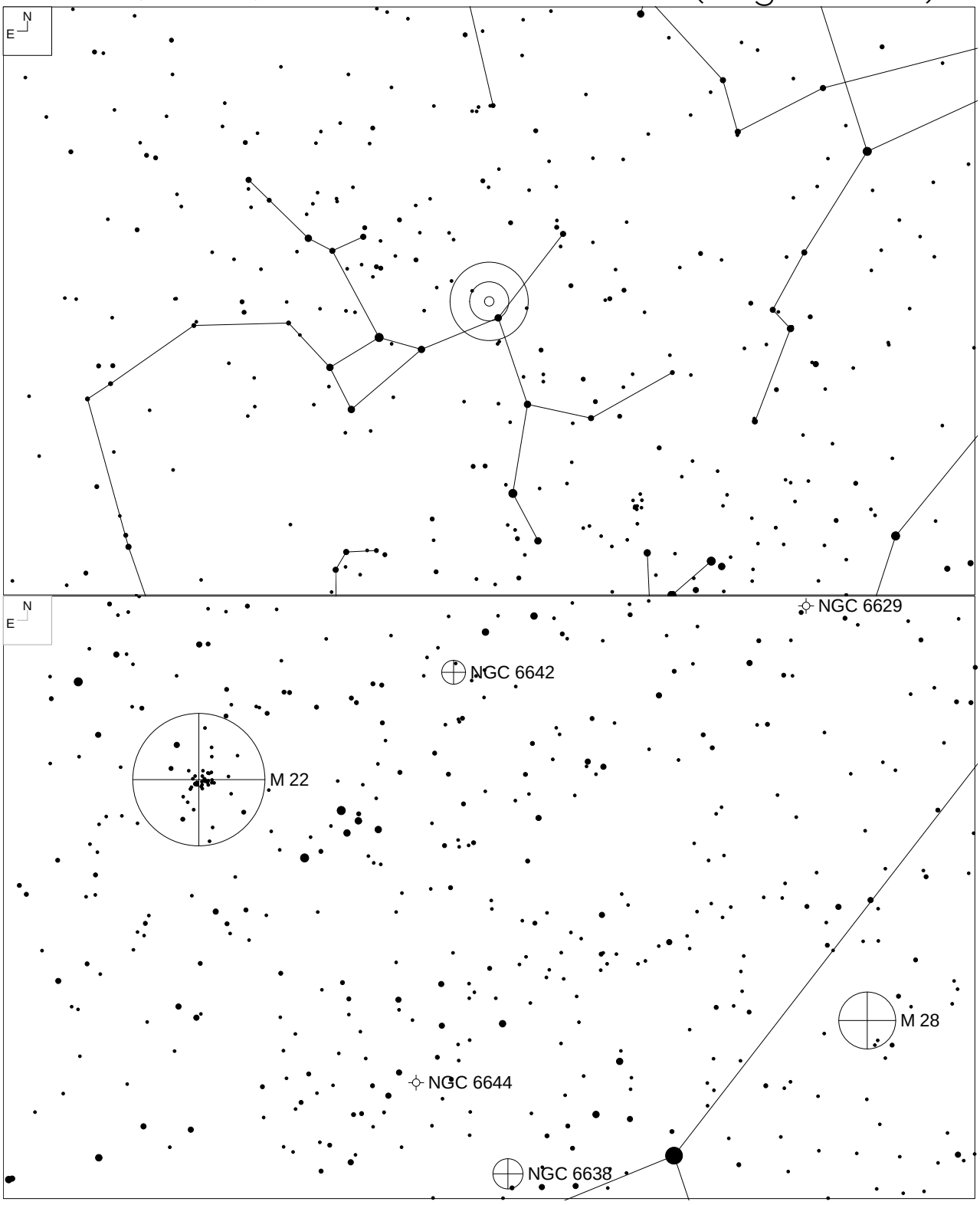
	RA	Dec	V_{mag}	HB_{Mag}	Bt^*_{Mag}	SB	Size (')
NGC 6544	18 07 20.6	-24 59 51	7.5	14.9	12.8	12.3	9.2
NGC 6553	18 09 17.3	-25 54 28	8.3	15.3	16.9	13.1	9.2

NGC 6540 and ESO 456-SC38 (Sagittarius)



	RA	Dec	V_{mag}	HB_{Mag}	Bt^*_{Mag}	SB	Size (‘)
NGC 6540	18 06 08.6	-27 45 44	8.3	16.9	15.3	13.1	9.2
ESO 456-38	18 01 49.1	-27 49 33	9.9	17.6	15.5	14.9	9.9

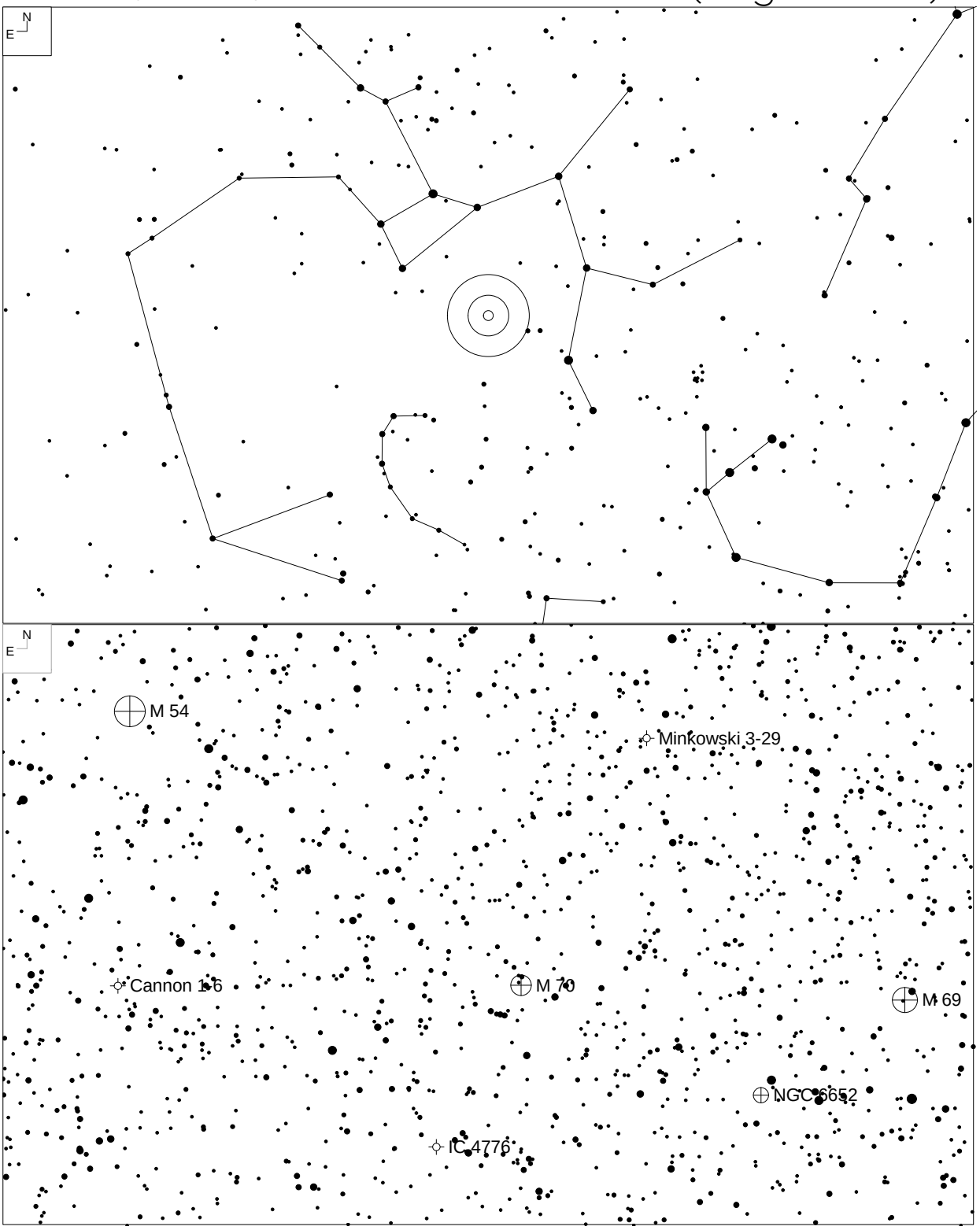
M22, M28, NGC 6638 and 6642 (Sagittarius)



Look for GJJC1 a Pne in M-22, see page 99

	RA	Dec	V_{mag}	HB_{Mag}	Bt^*_{Mag}	SB	Size (')
M22	18 36 24.2	-23 54 12	5.2	14.2	10.7	12.7	32
M28	18 24 32.9	-24 52 12	6.9	15.7	12	12.6	13.8
NGC 6638	18 30 56.2	-25 29 47	9.2	16.5	14.2	13.5	7.3
NGC 6642	18 31 54.3	-23 28 35	8.9	16.3	-	12.7	5.8

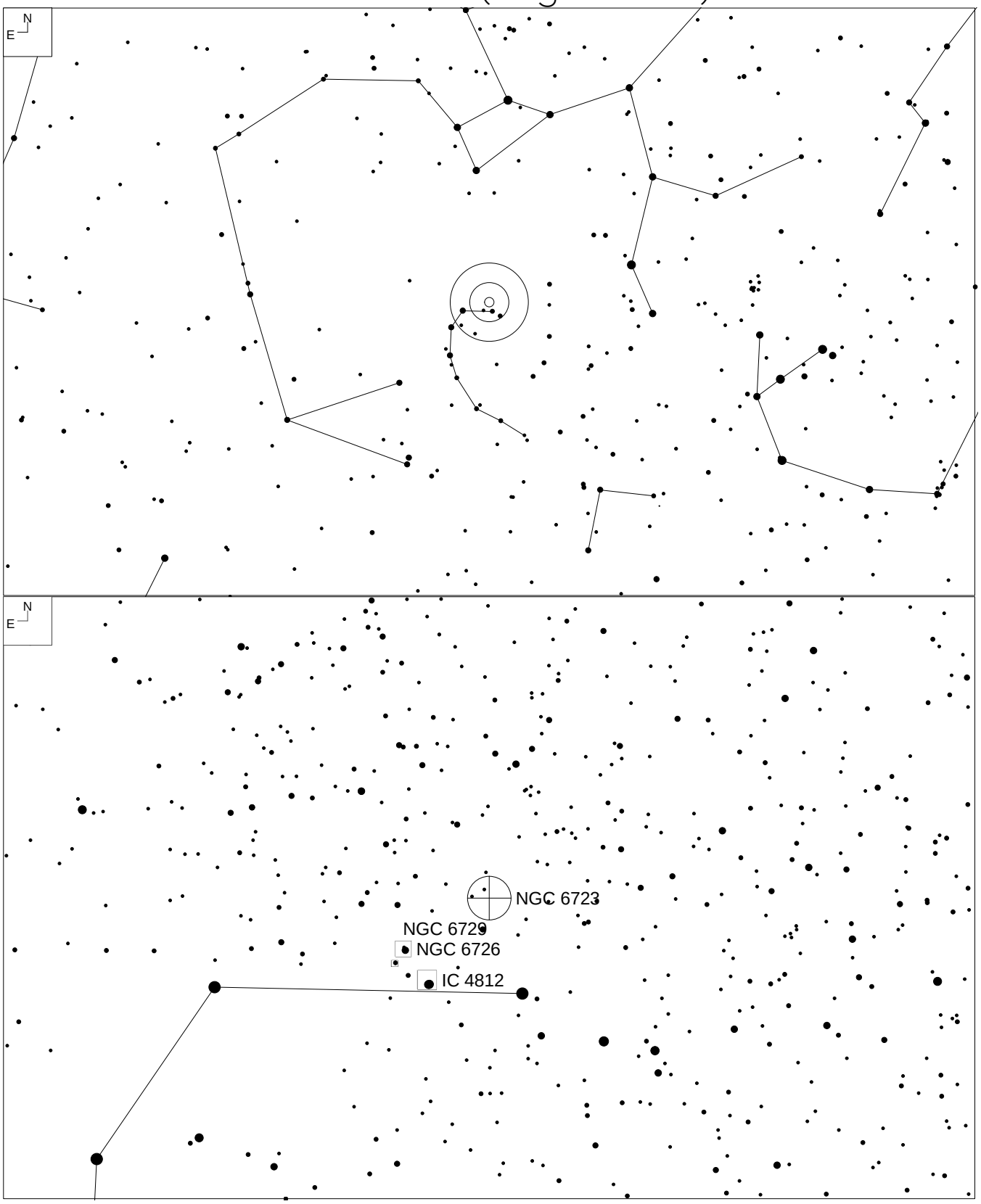
M54, M69, M70 and NGC 6652 (Sagittarius)



field: 6.3 x 3.9°

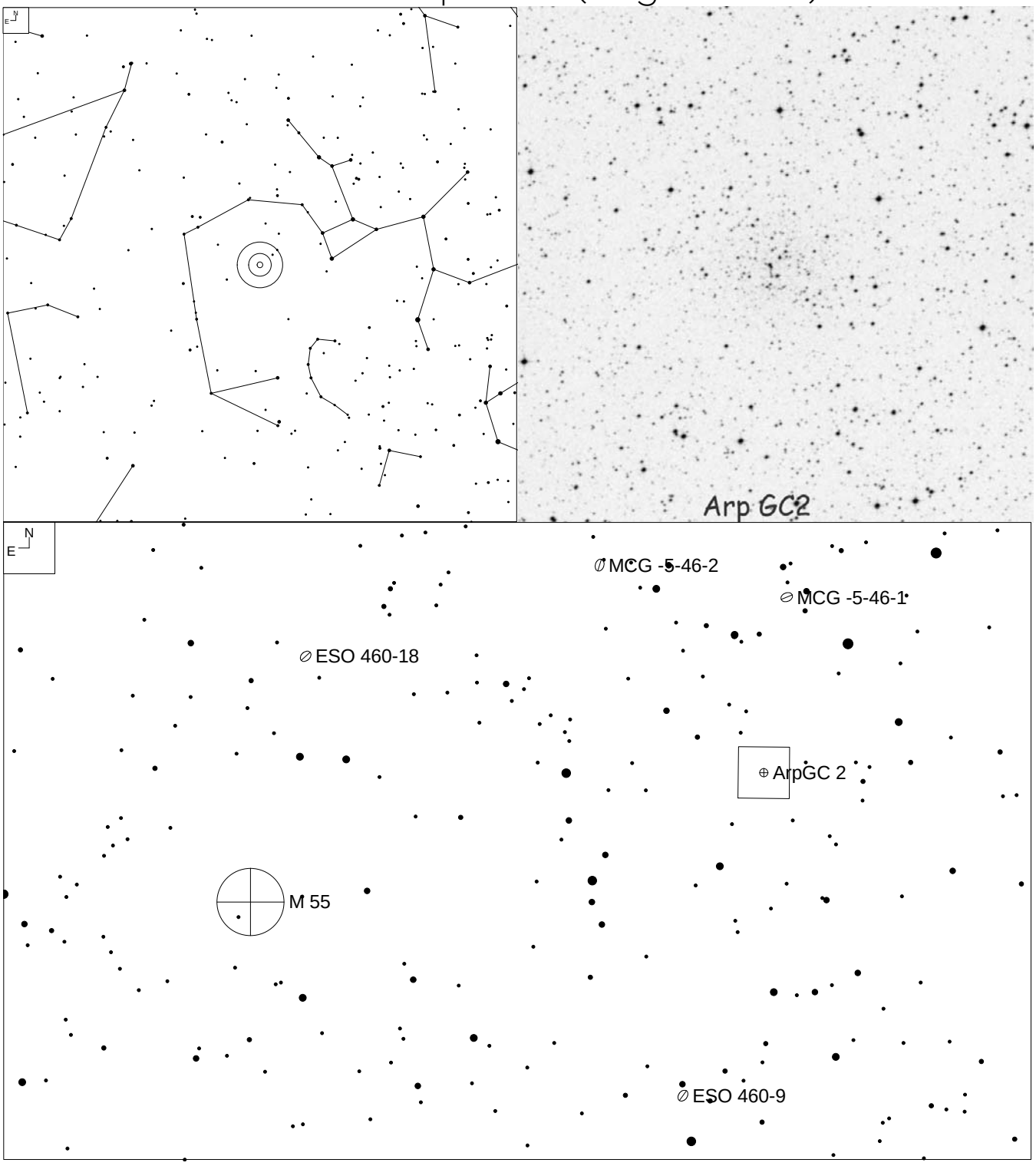
	RA	Dec	V_{mag}	HB_{Mag}	Bt^*_{Mag}	SB	Size (')
M54	18 55 03.3	-30 28 42	7.7	18.2	15.2	13.1	12
M69	18 31 23.2	-32 20 53	7.7	15.9	13.7	12.7	9.8
M70	18 43 12.7	-32 17 31	7.8	15.6	13	12.3	8
NGC 6652	18 35 45.7	-32 59 25	8.5	16	13.3	12.4	6

NGC 6723 (Sagittarius)



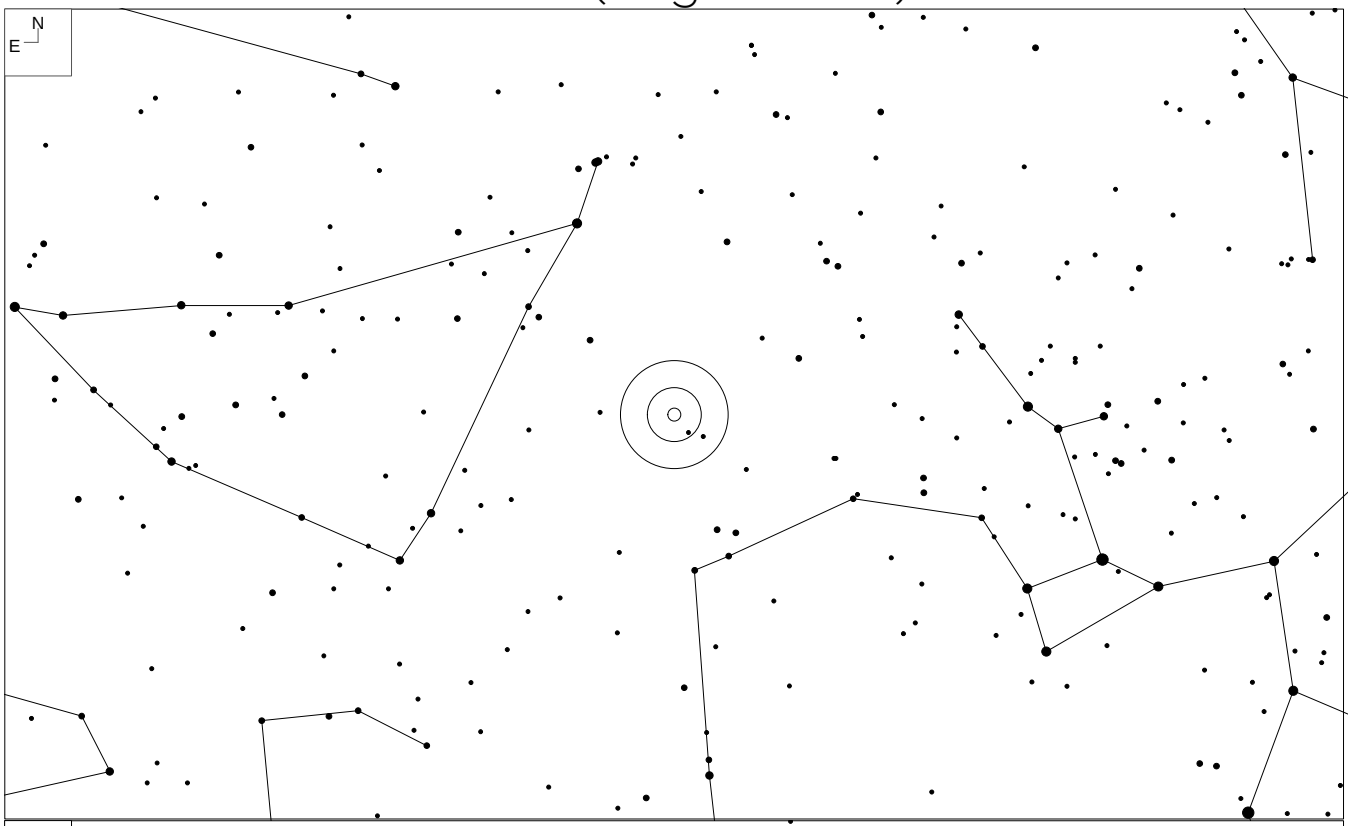
RA	Dec	V_{mag}	HB_{Mag}	Bt^*_{Mag}	SB	Size (')
18 59 33.2	-36 37 54	6.8	15.5	12.8	12.4	13

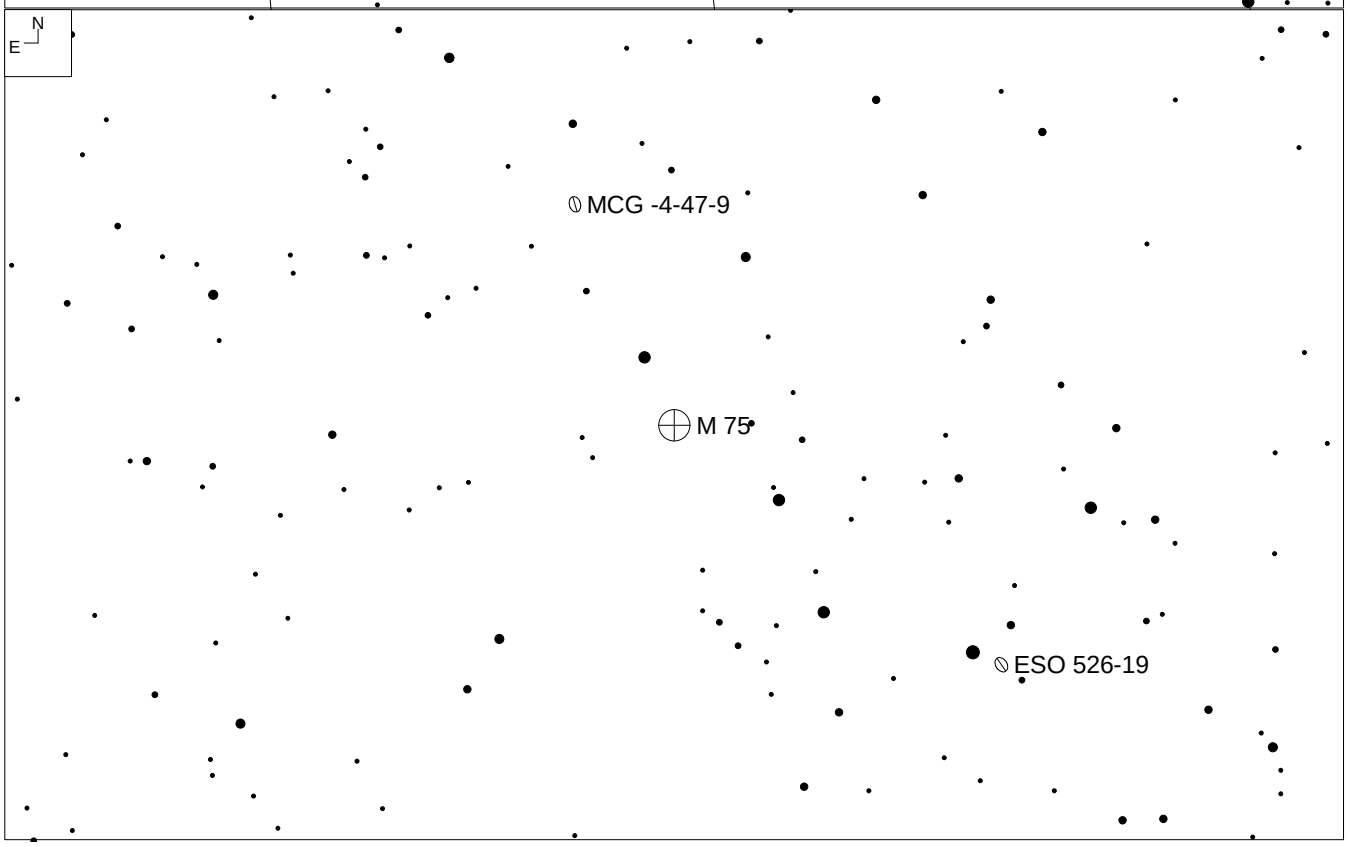
M55 and Arp GC2 (Sagittarius)



	RA	Dec	V_{mag}	HB_{Mag}	Bt^*_{Mag}	SB	Size (')
M55	19 39 59.4	-30 57 44	6.3	14.4	11.2	12.7	19
Arp GC 2	19 28 44.1	-30 21 14	13	18.2	15.5	14.8	2.3

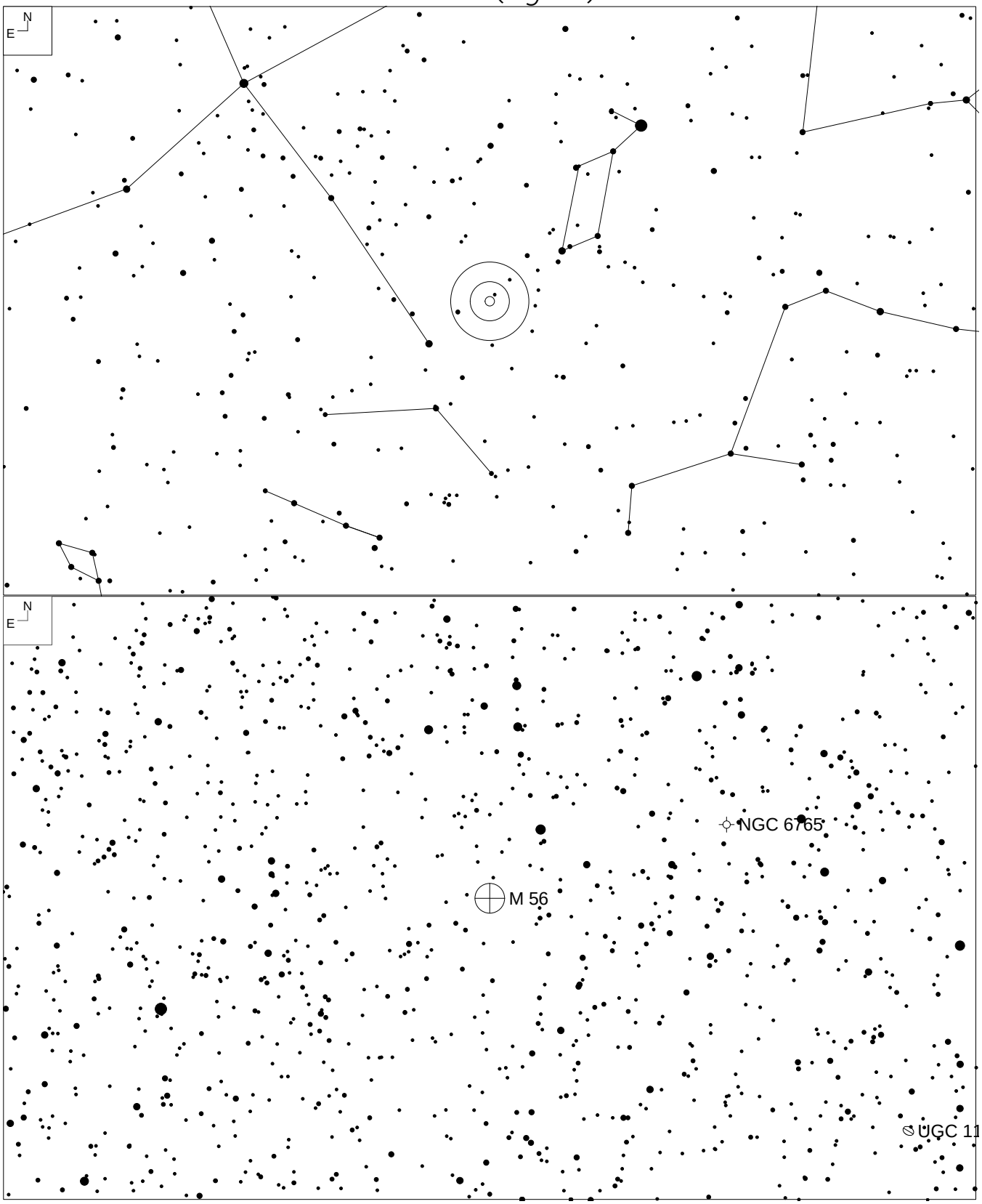
M75 (Sagittarius)





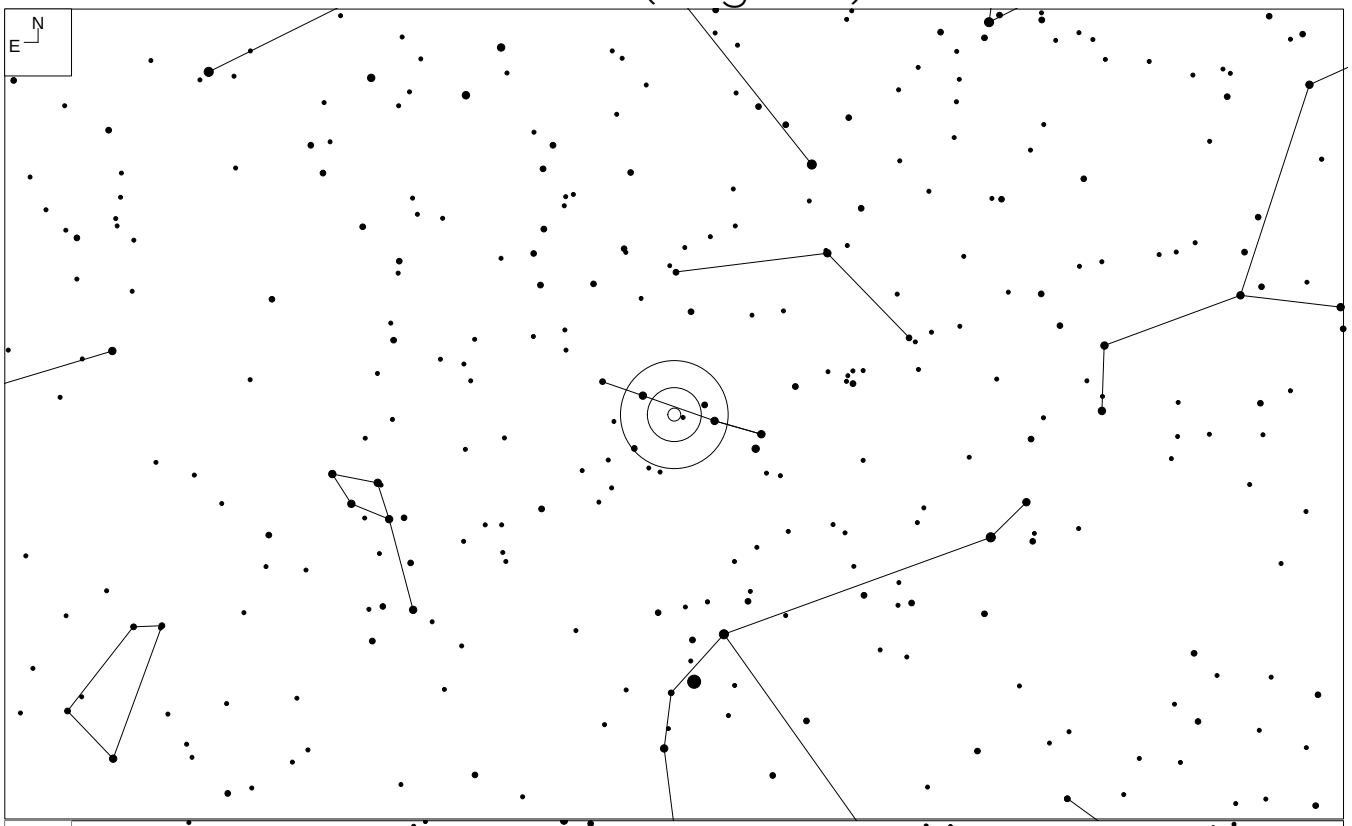
RA	Dec	V_{mag}	HB_{Mag}	Bt^*_{Mag}	SB	Size (‘)
20 06 04.8	-21 55 17	8.6	17.5	14.6	12.8	6.8

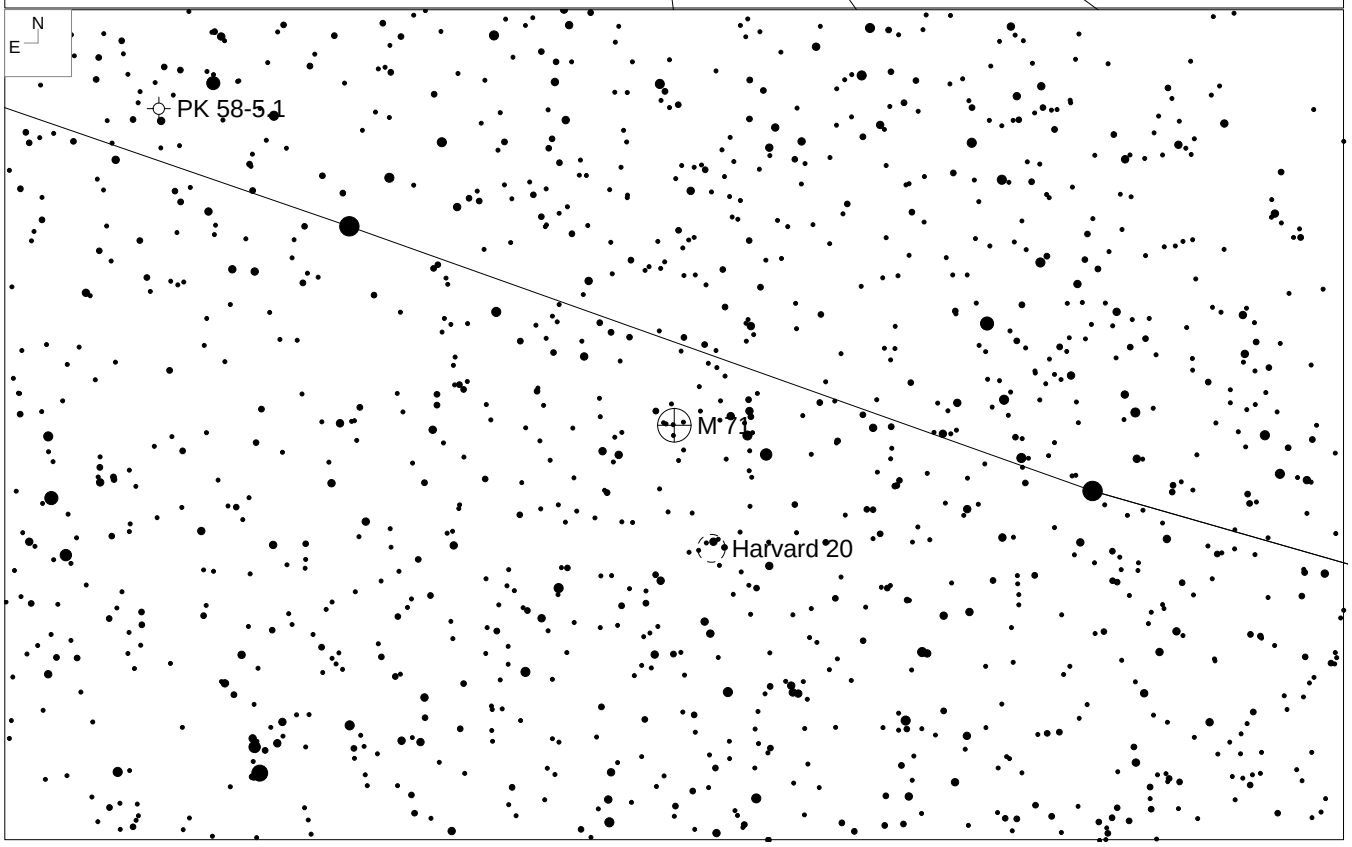
M56 (Lyra)



RA	Dec	V_{mag}	HB_{Mag}	Bt^*_{Mag}	SB	Size (')
19 16 35.5	+30 11 05	8.4	16.3	13.2	13.1	8.8

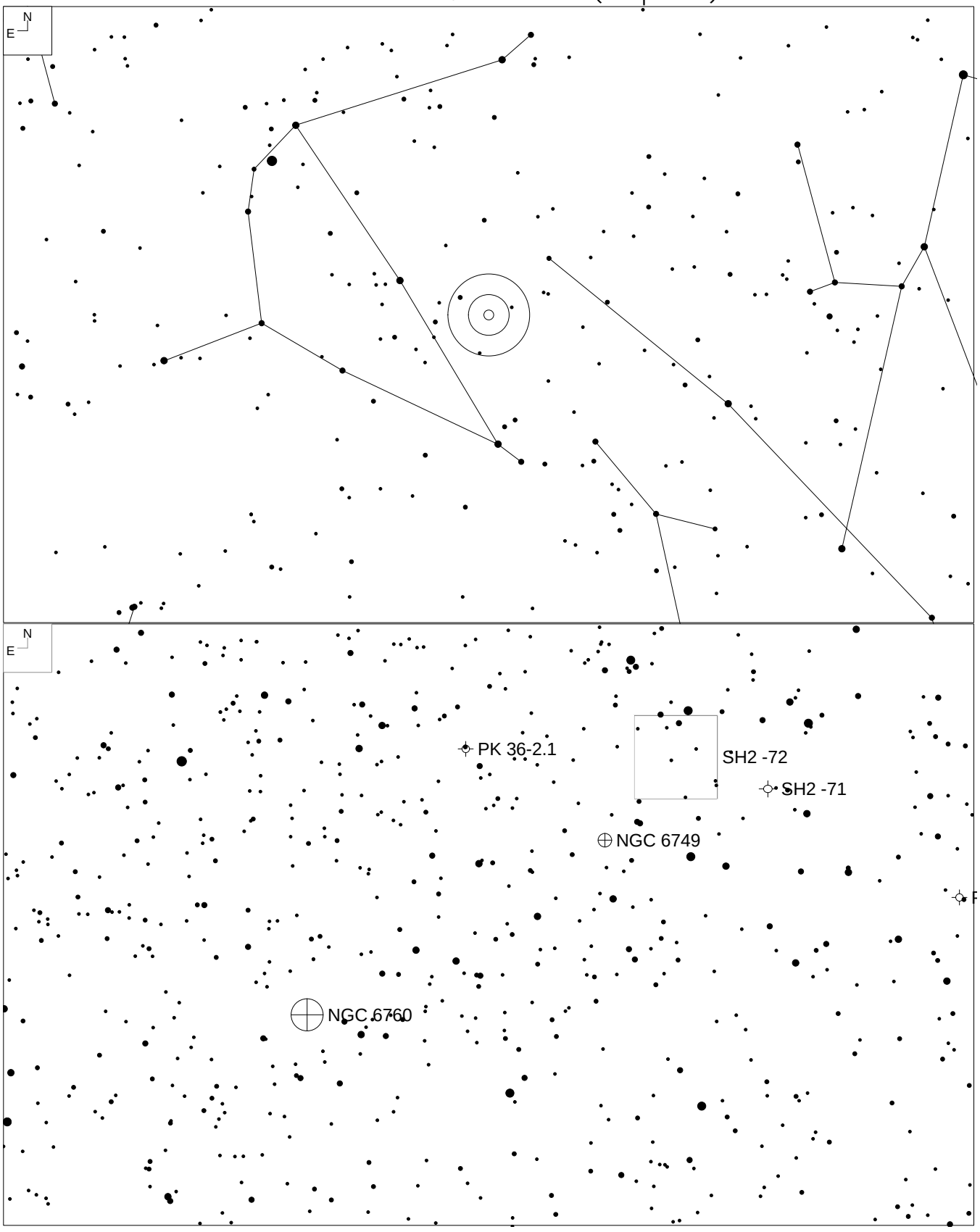
M71 (Sagitta)





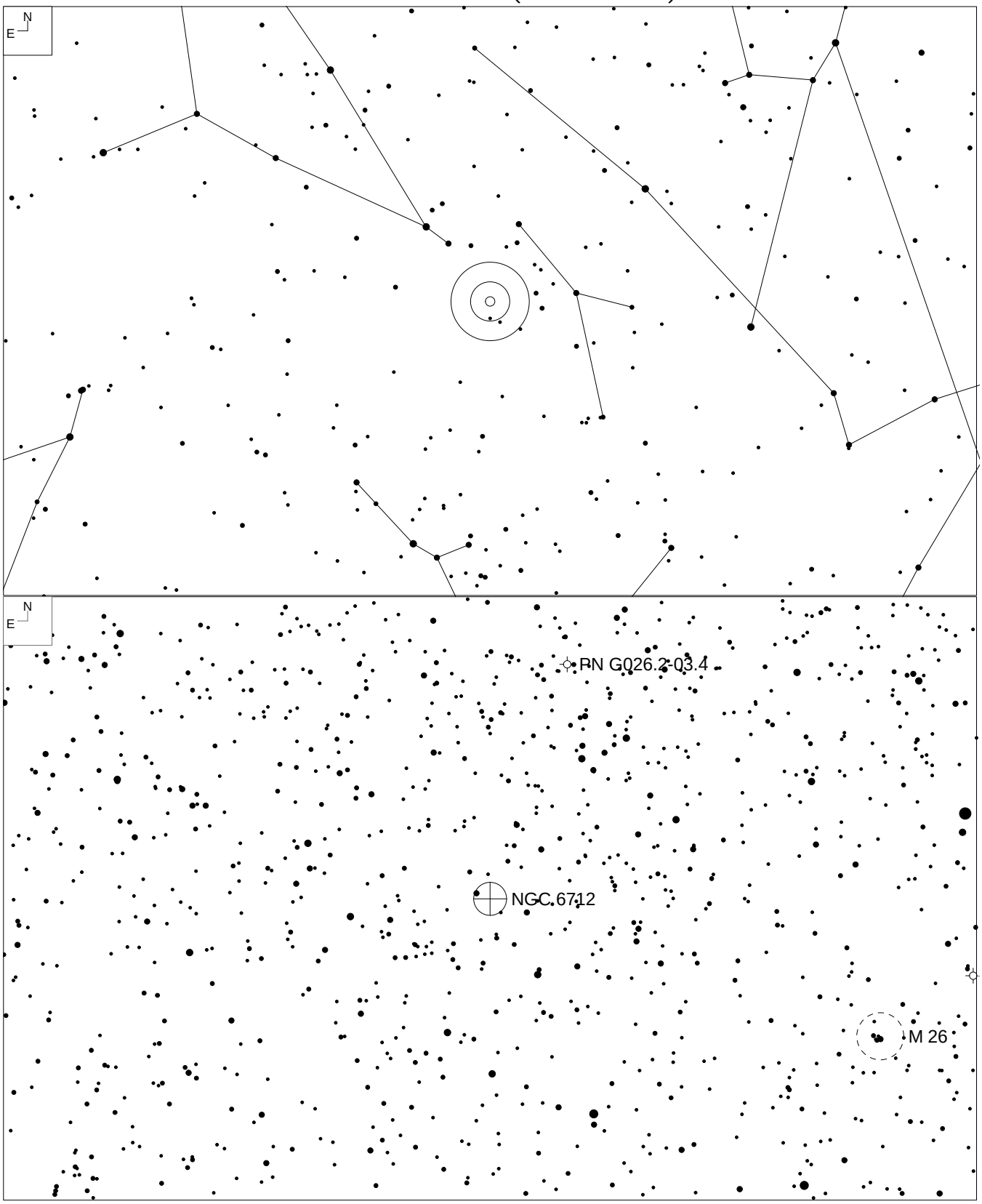
RA	Dec	V_{mag}	HB_{Mag}	Bt^*_{Mag}	SB	Size (‘)
19 53 46.1	+18 46 42	8.4	14.5	12.1	-	-

NGC 6749, 6760 (Aquila)



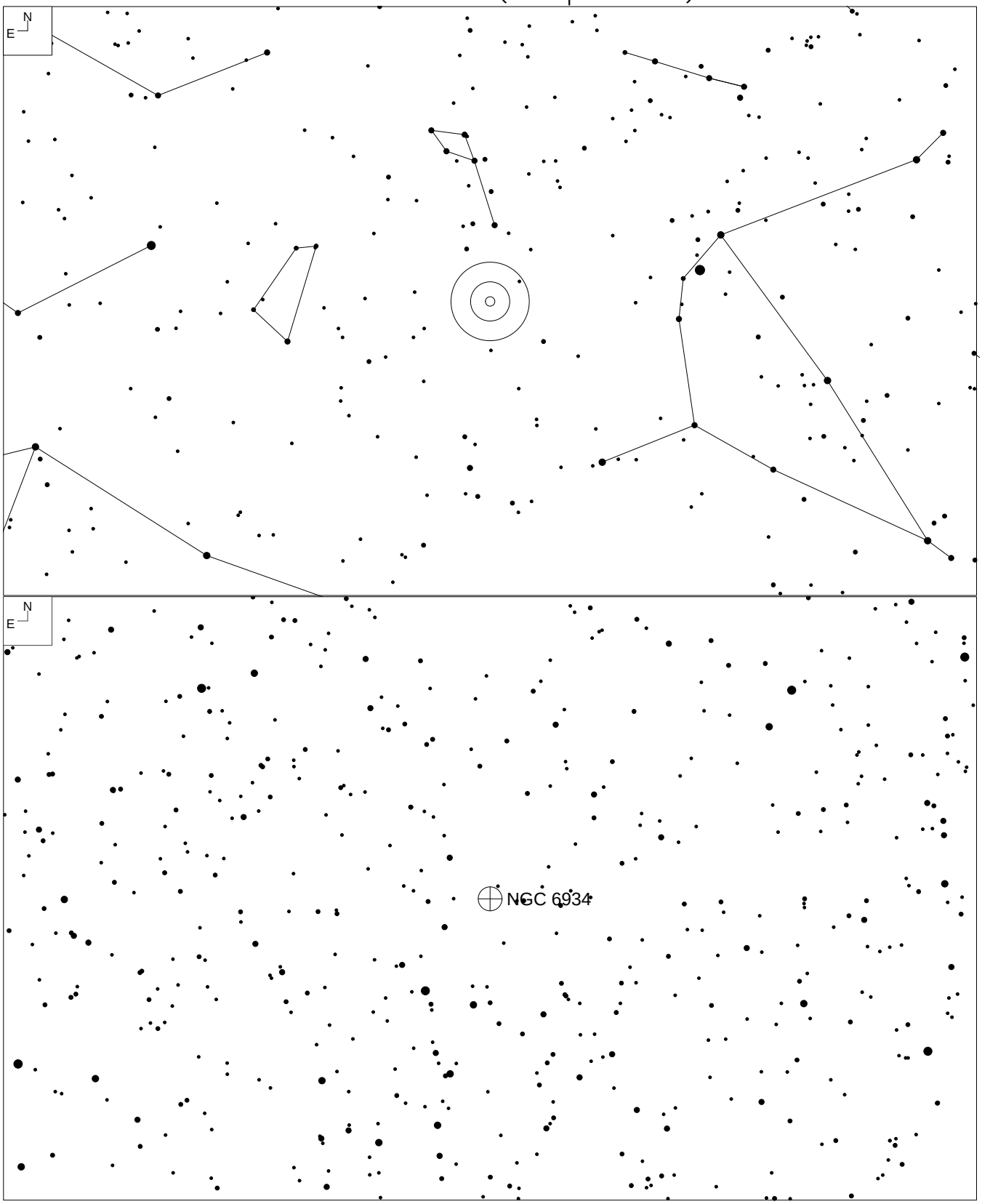
	RA	Dec	V_{mag}	HB_{Mag}	Bt^*_{Mag}	SB	Size (')
NGC 6749	19 05 15.3	+01 54 03	12.4	19.7	16.5	15.4	4
NGC 6760	19 11 12.1	+01 01 50	9	17.5	15.6	13.8	9

NGC 6712 (Scutum)



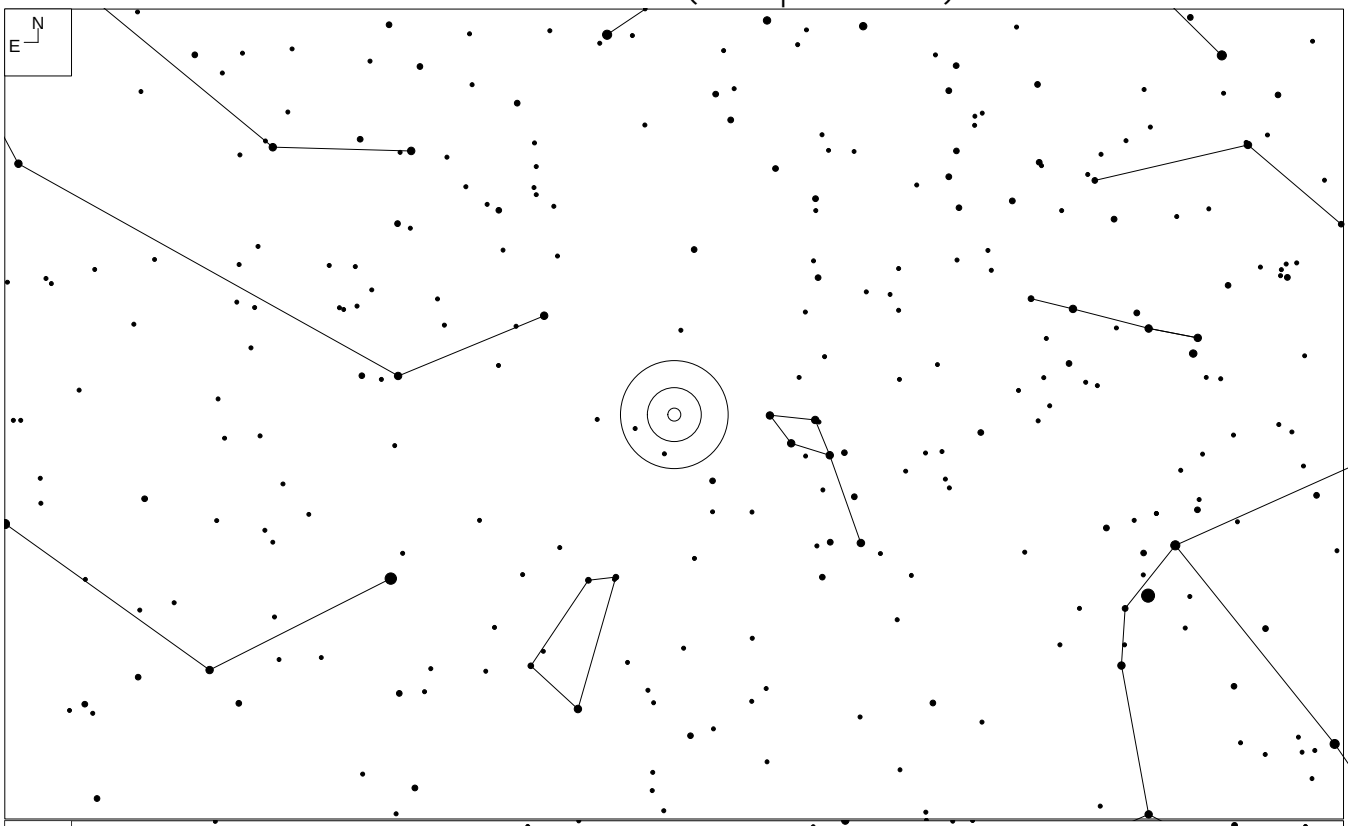
RA	Dec	V_{mag}	HB_{Mag}	Bt^*_{Mag}	SB	Size (‘)
18 53 04.3	-08 42 22	8.1	16.3	13.3	13.1	9.8

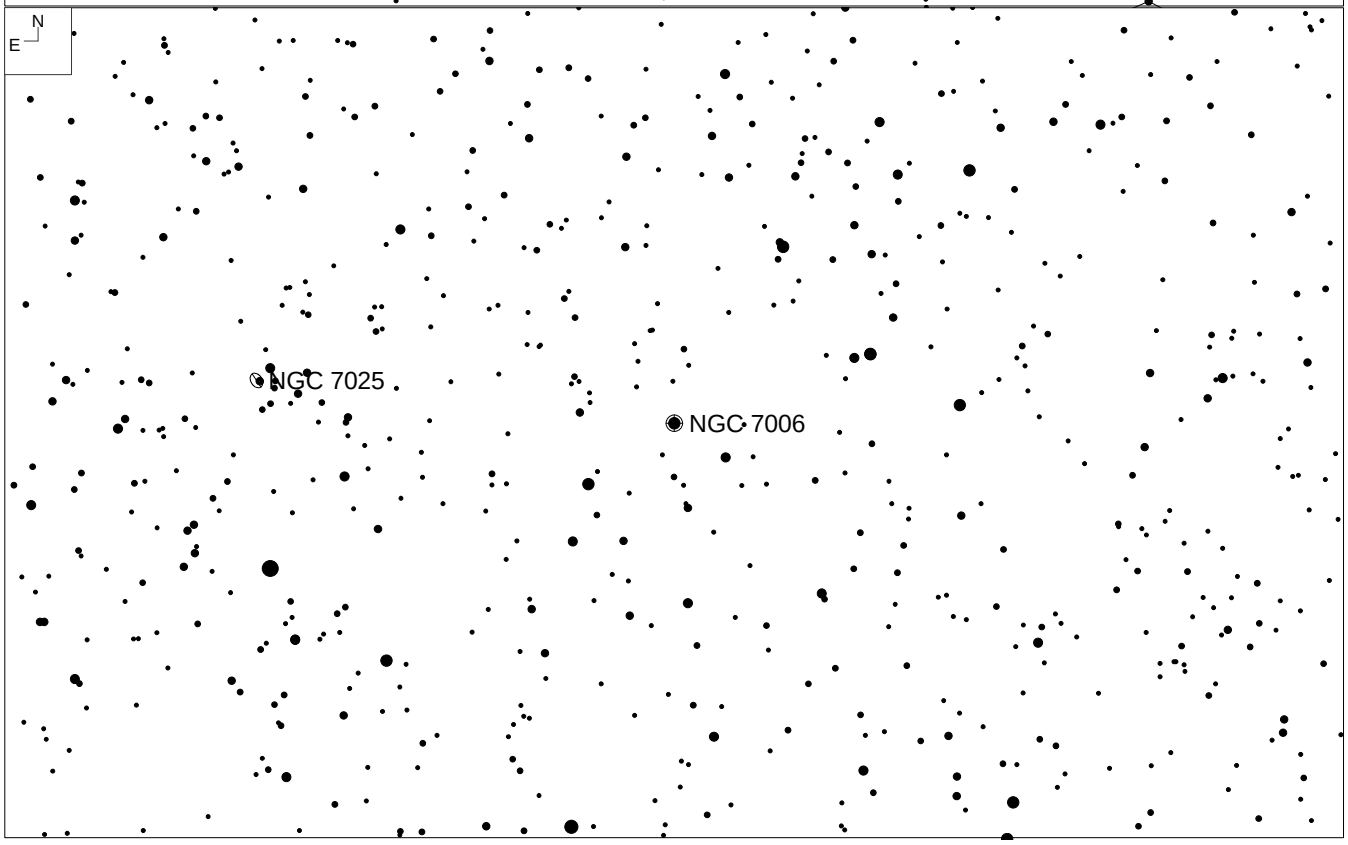
NGC 6934 (Delphinus)



RA	Dec	V_{mag}	HB_{Mag}	Bt^*_{Mag}	SB	Size (‘)
20 34 11.6	+07 24 15	8.9	17.1	13.8	13.2	7.1

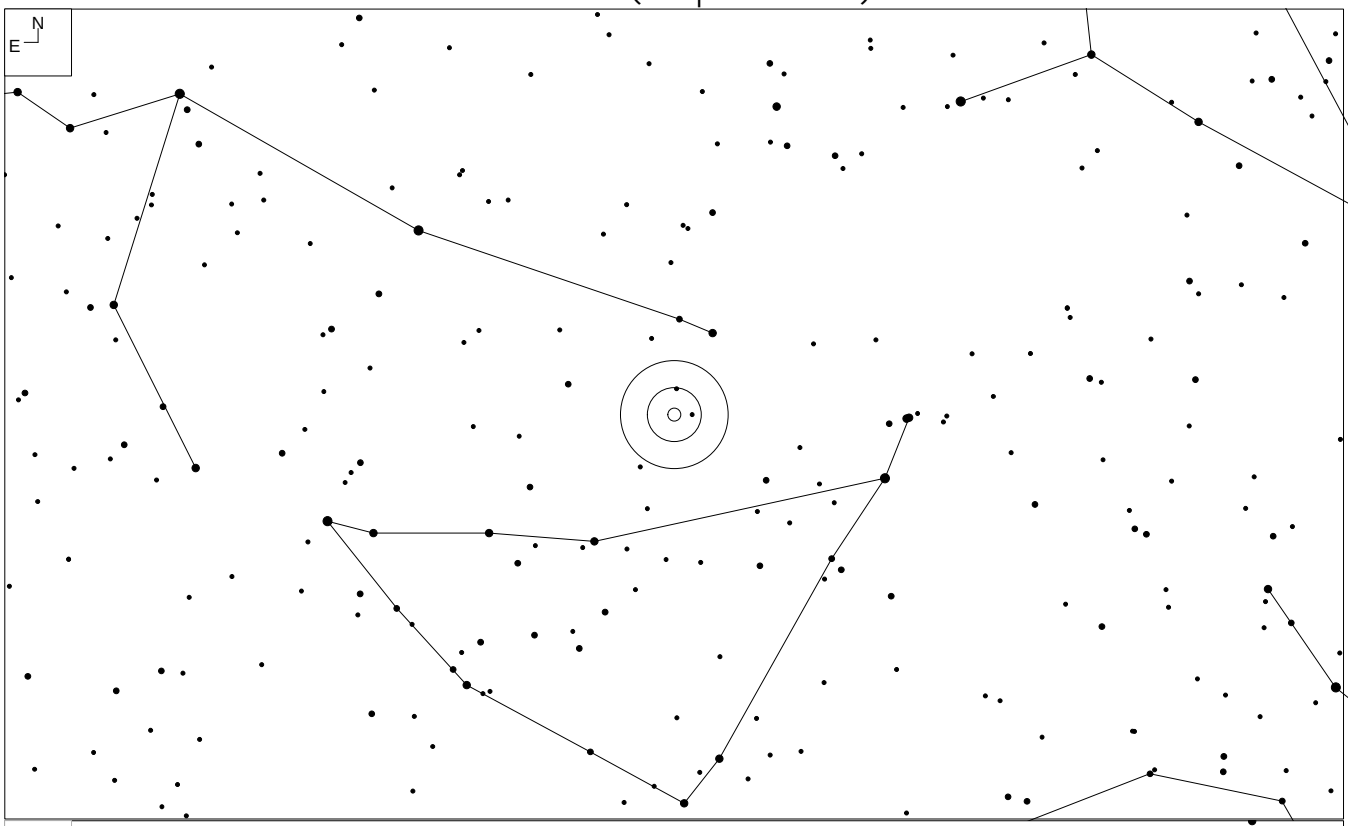
NGC 7006 (Delphinus)

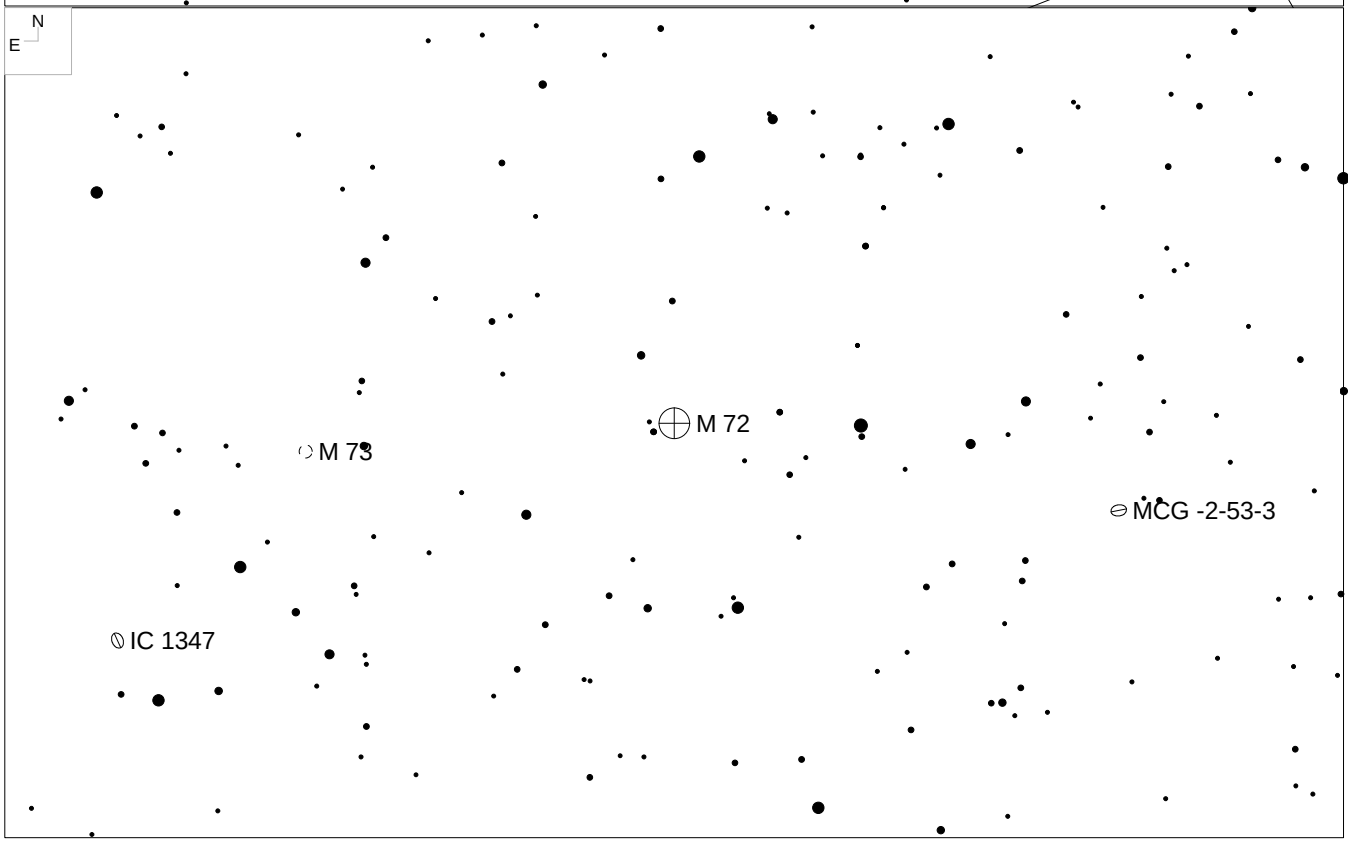




RA	Dec	V_{mag}	HB_{Mag}	$Bt*_{Mag}$	SB	Size (')
21 01 29.5	+16 11 15	10.6	18.8	15.6	13.4	3.6

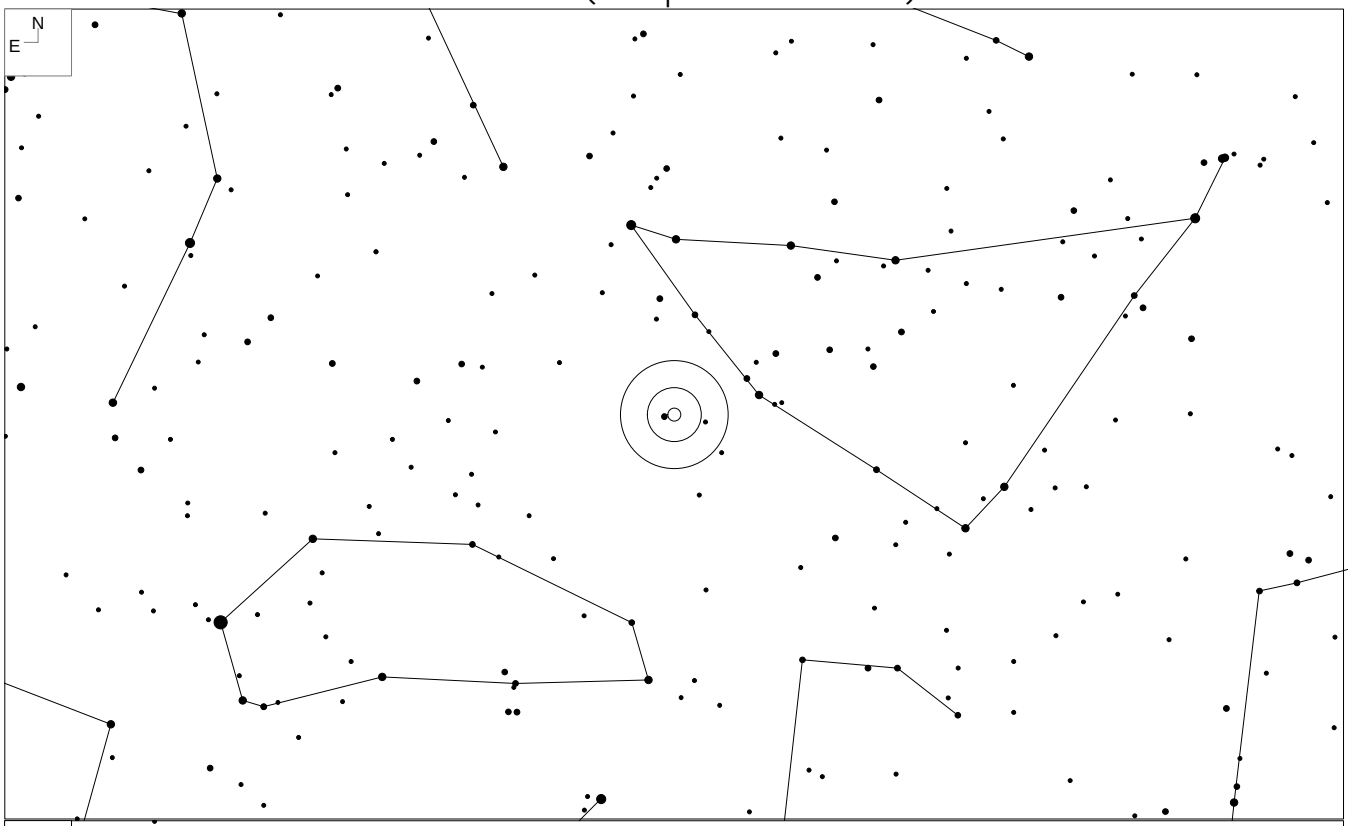
M72 (Aquarius)

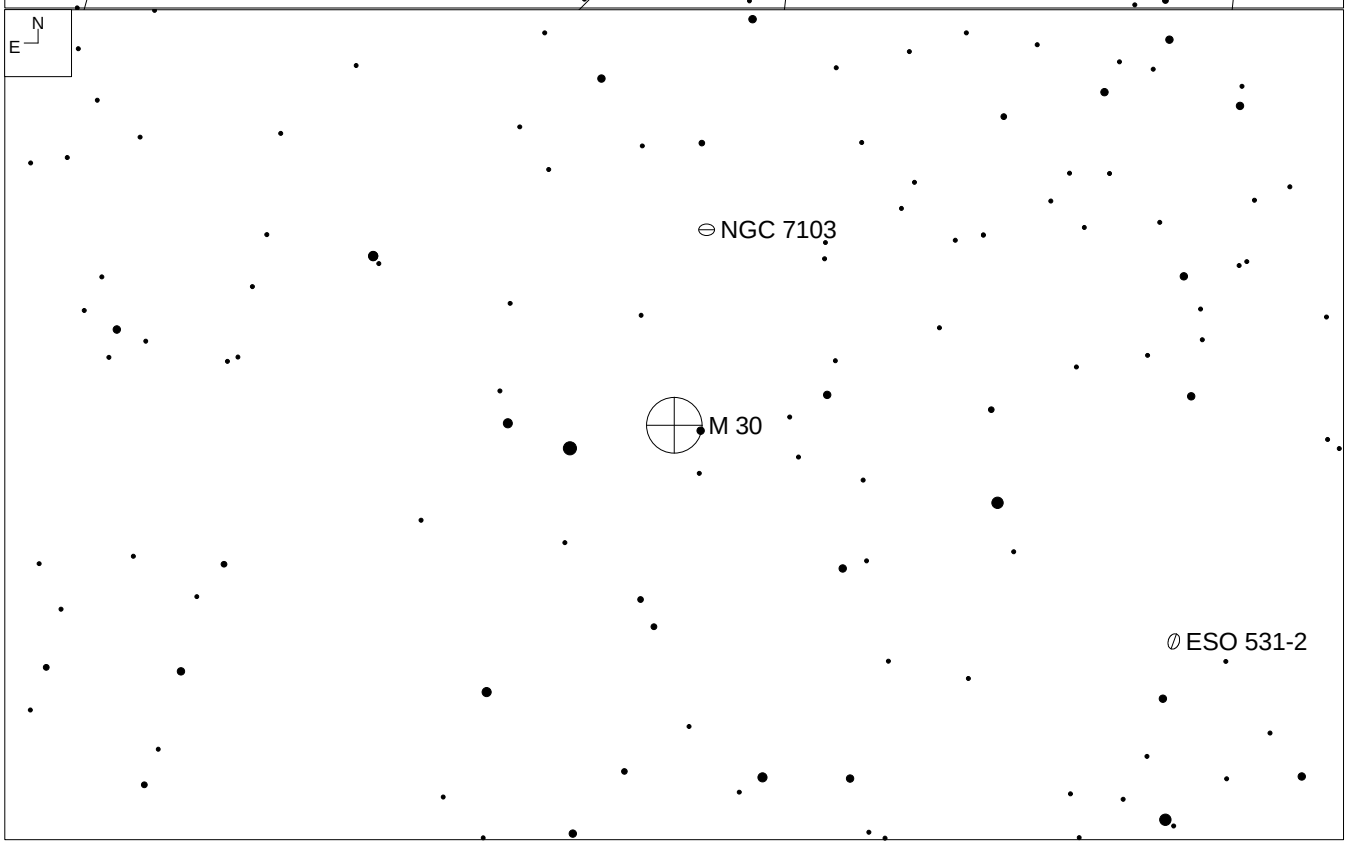




RA	Dec	V_{mag}	HB_{Mag}	Bt^*_{Mag}	SB	Size (‘)
20 53 27.9	-12 32 13	9.2	16.9	14.2	13.3	6.6

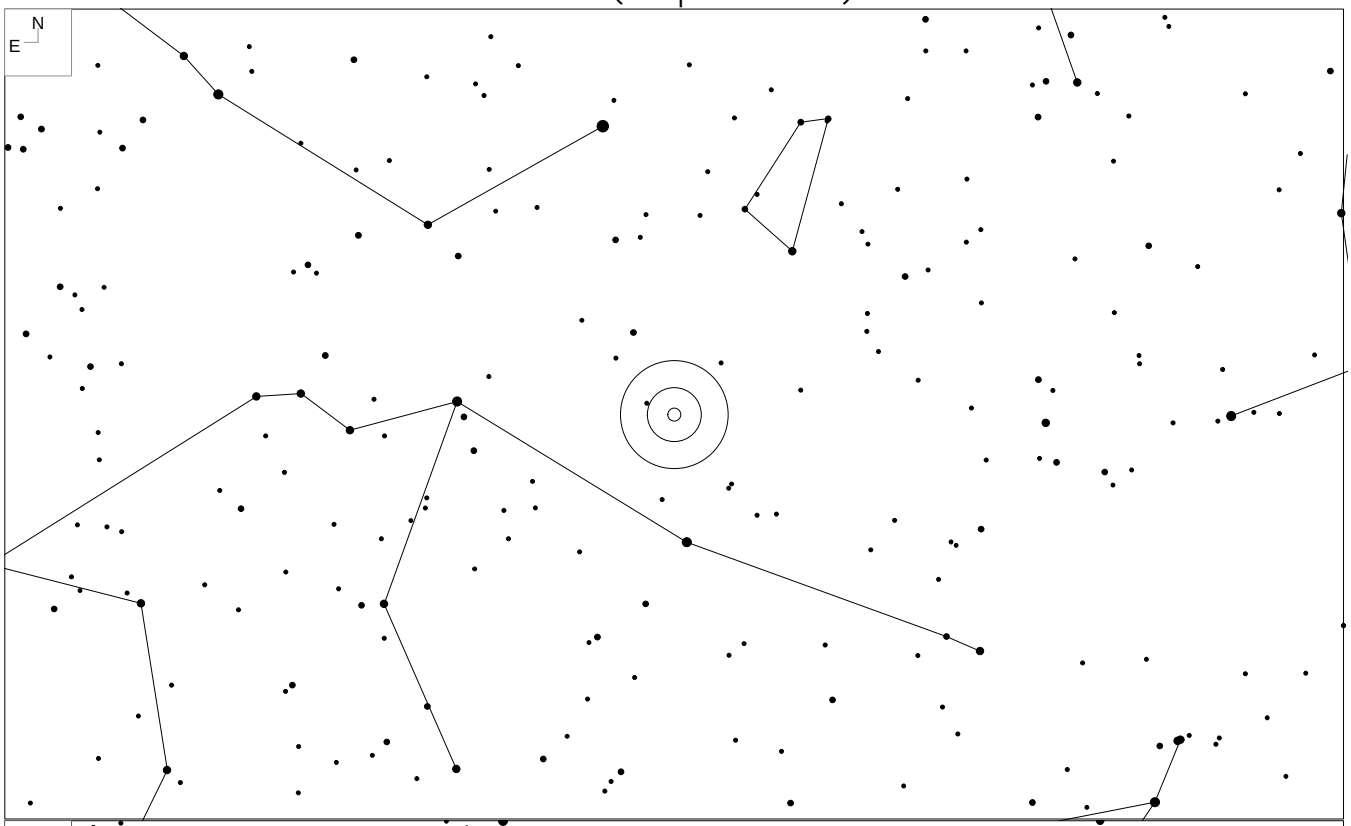
M30 (Capricornus)

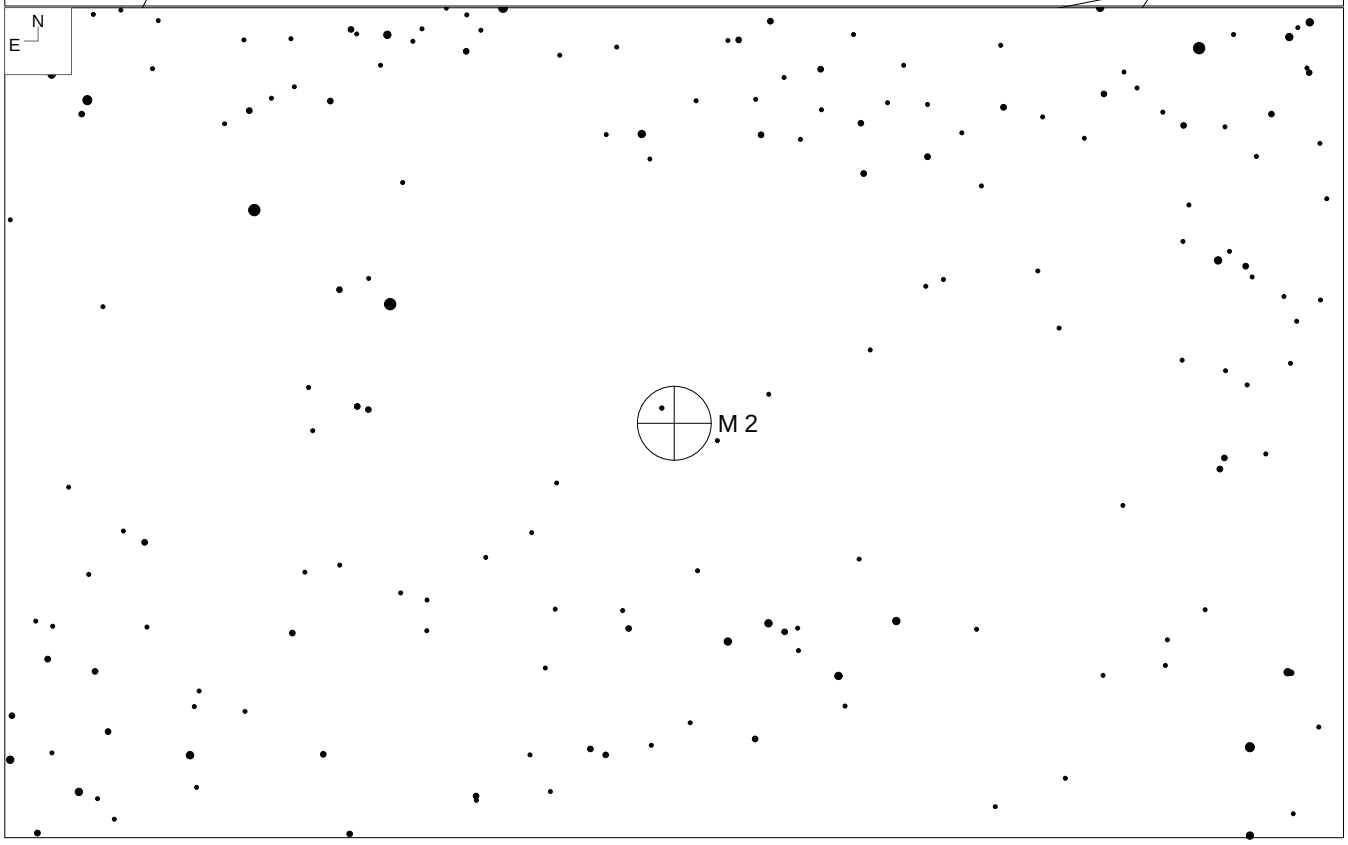




RA	Dec	V_{mag}	HB_{Mag}	Bt^*_{Mag}	SB	Size (')
21 40 22.0	-23 10 45	6.9	15.1	12.1	12.3	12

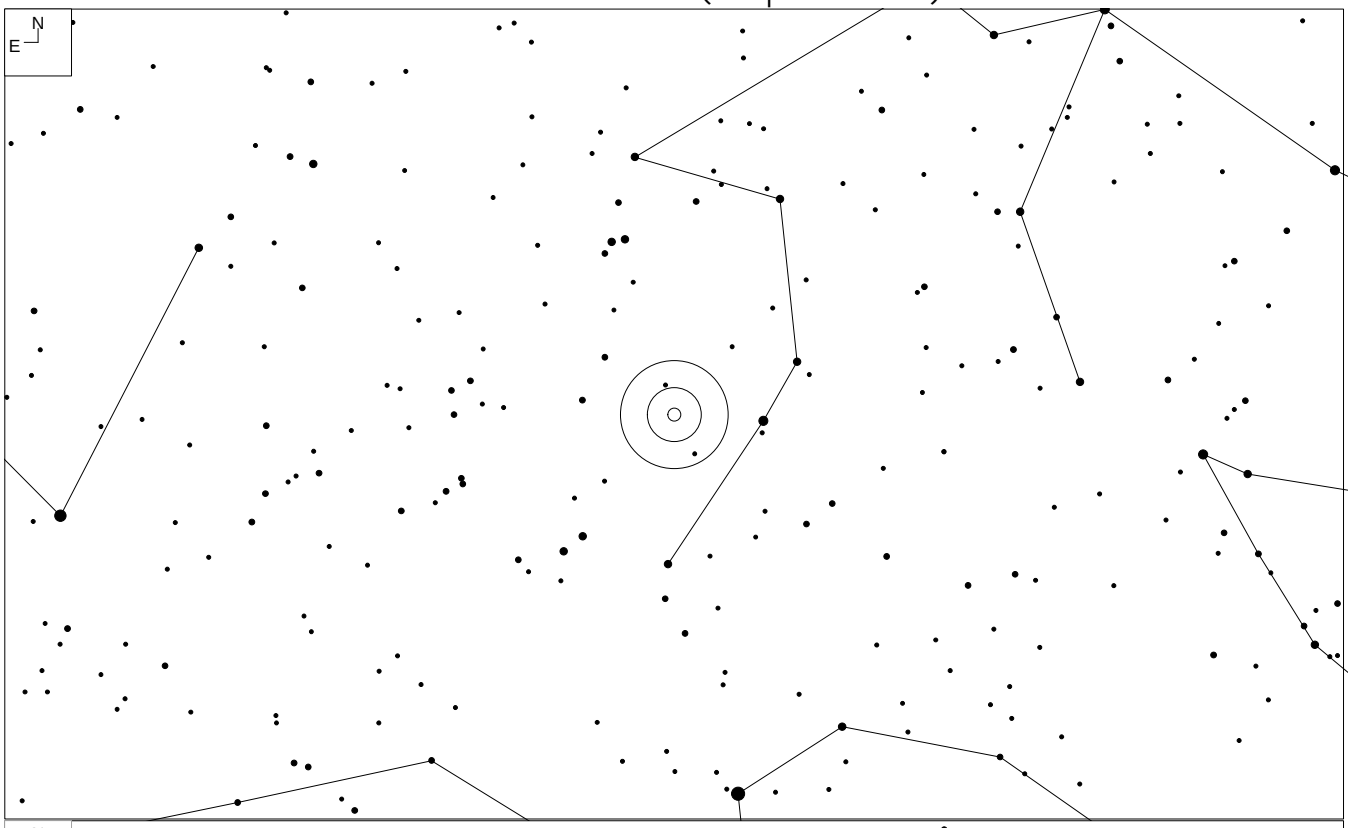
M2 (Aquarius)

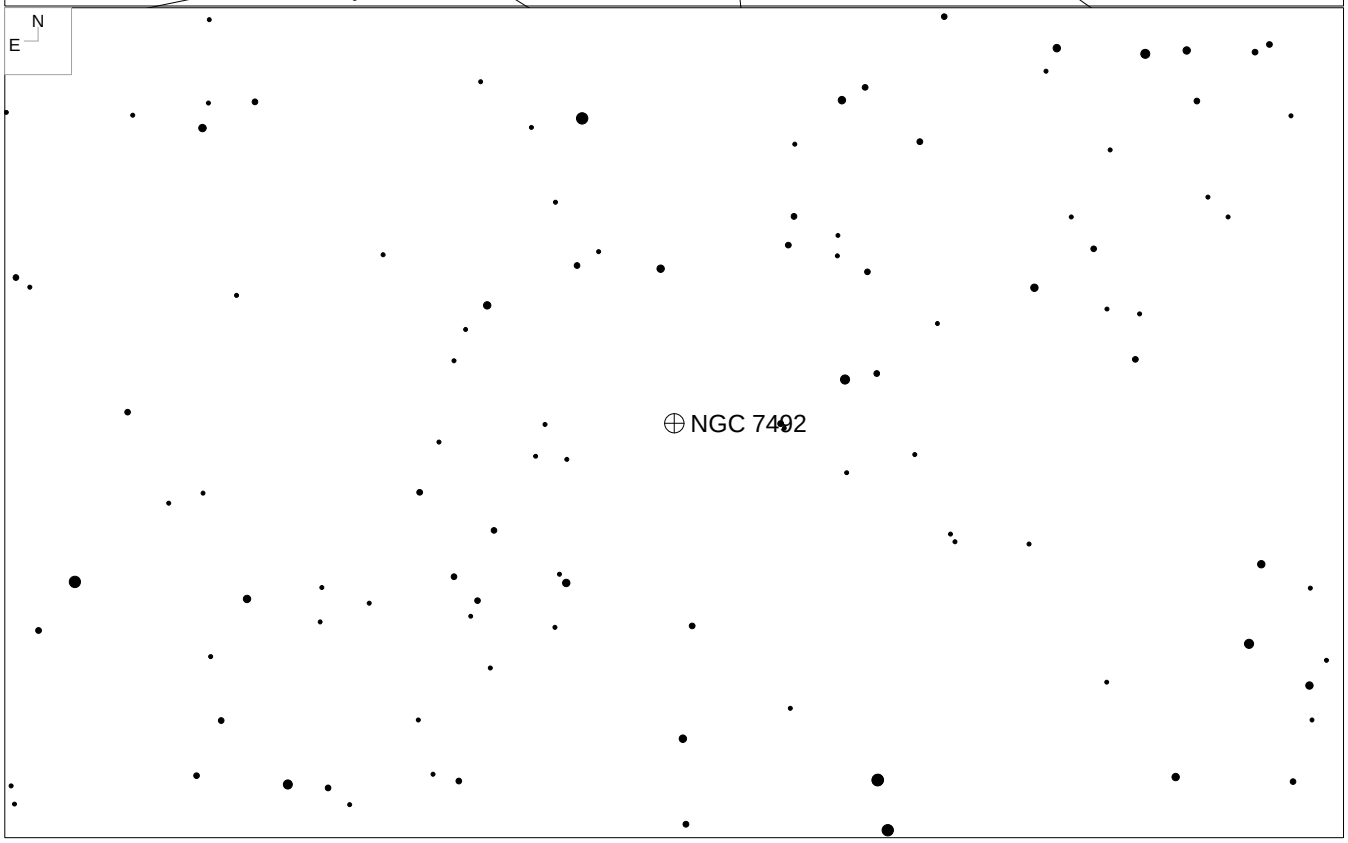




RA	Dec	V_{mag}	HB_{Mag}	Bt^*_{Mag}	SB	Size (‘)
21 33 27.0	-00 49 12	6.6	16.1	13.1	12.6	16

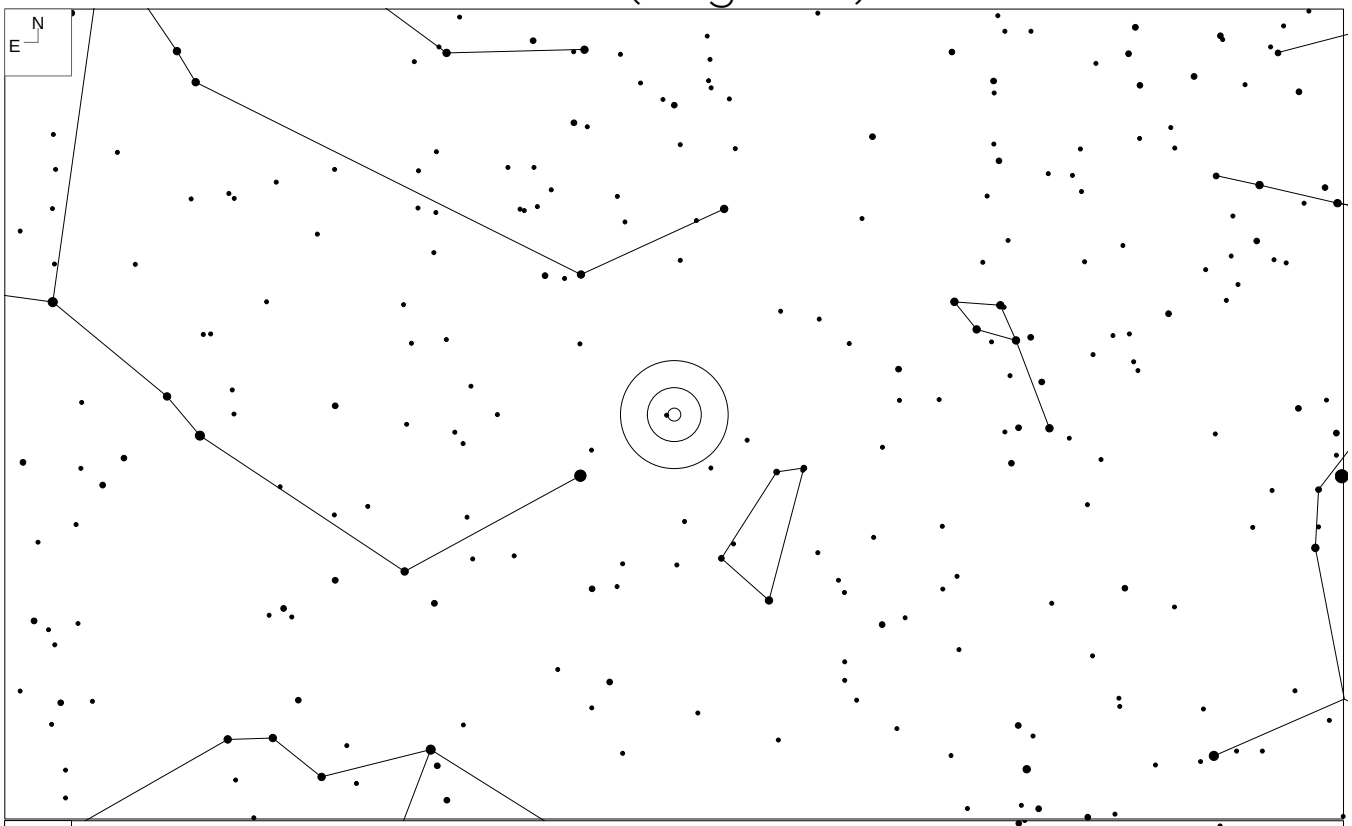
NGC 7492 (Aquarius)

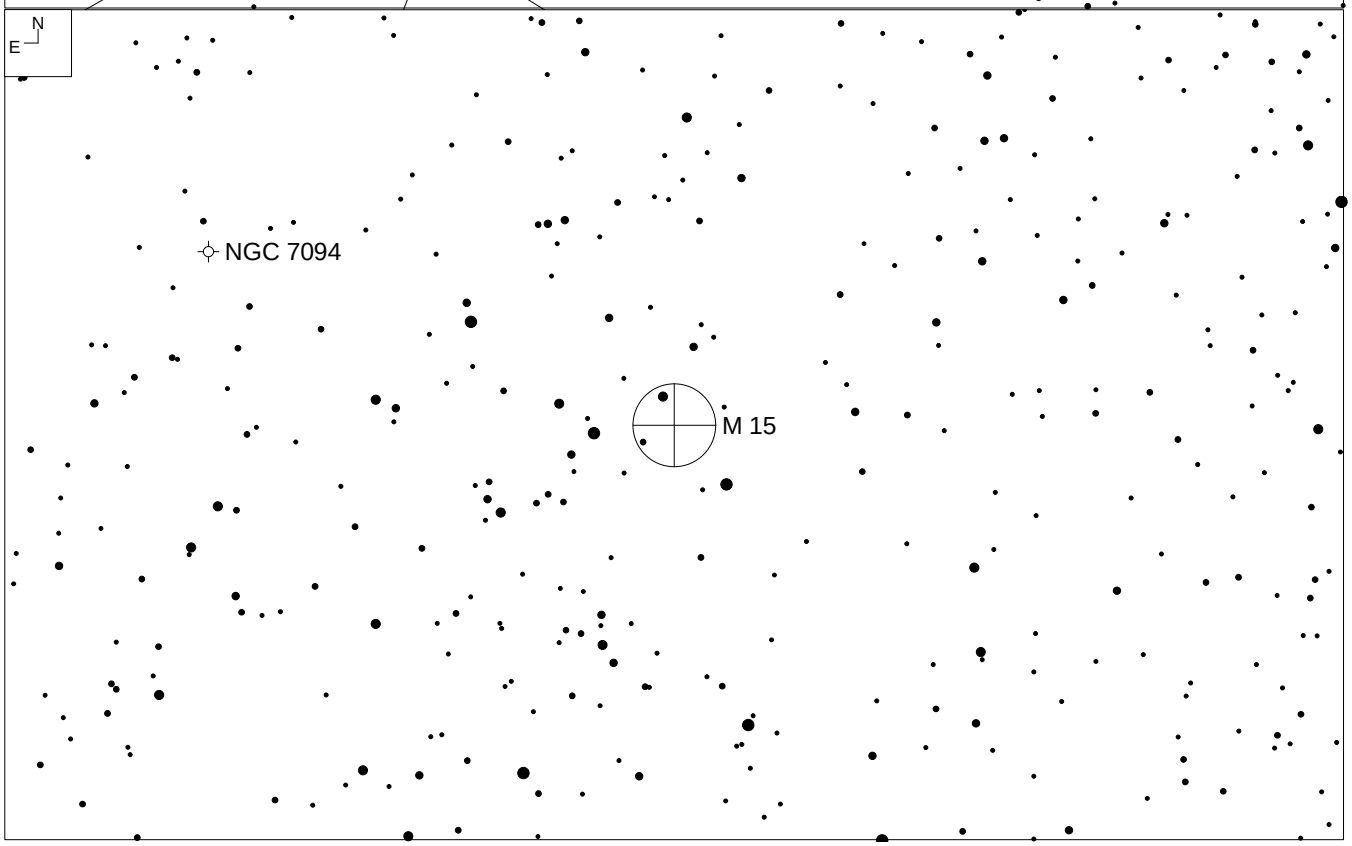




RA	Dec	V_{mag}	HB_{Mag}	$Bt*_{Mag}$	SB	Size (‘)
23 08 26.7	-15 36 41	11.2	17.6	15.5	14.3	4.2

M15 (Pegasus)

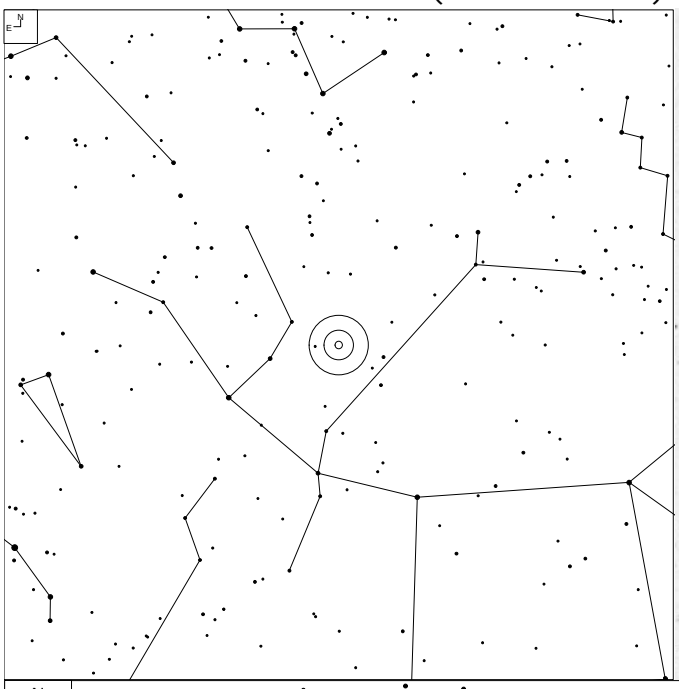


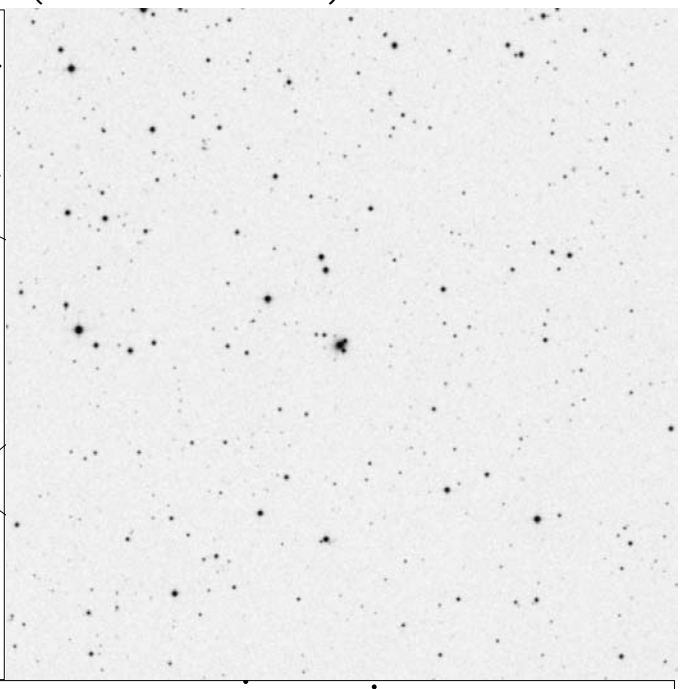


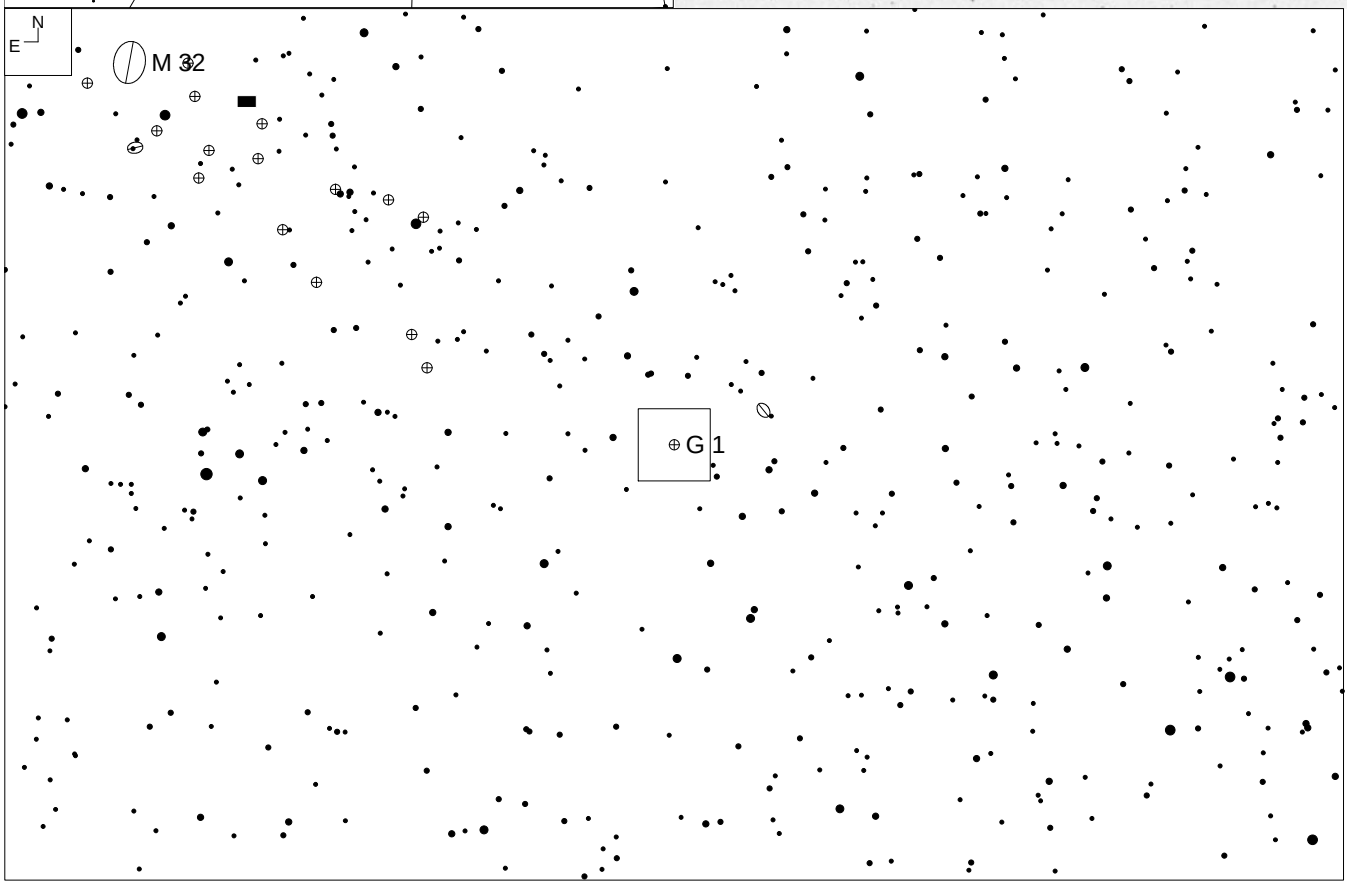
Look for Pease 1, see page 98

RA	Dec	V_{mag}	HB_{Mag}	Bt^*_{Mag}	SB	Size (')
21 29 58.3	+12 10 01	6.3	15.9	12.6	12.6	18

G1 (M31 GC) (Andromeda)

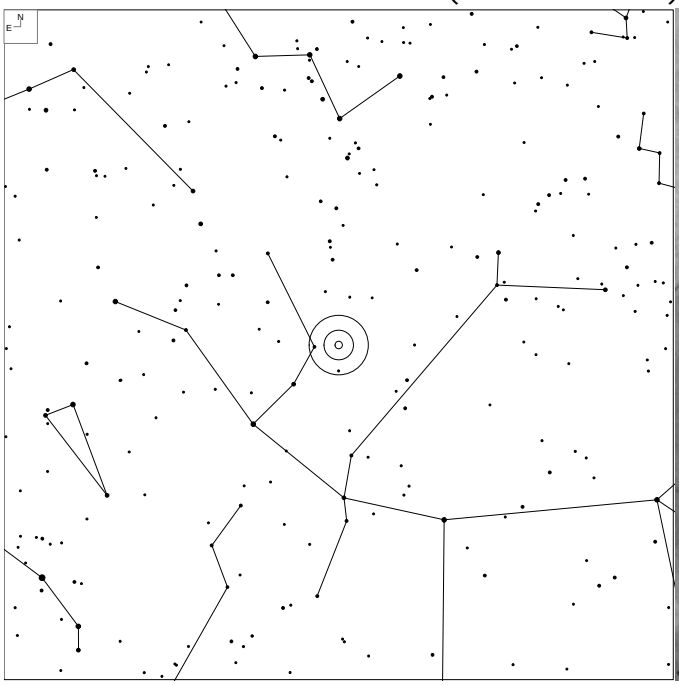


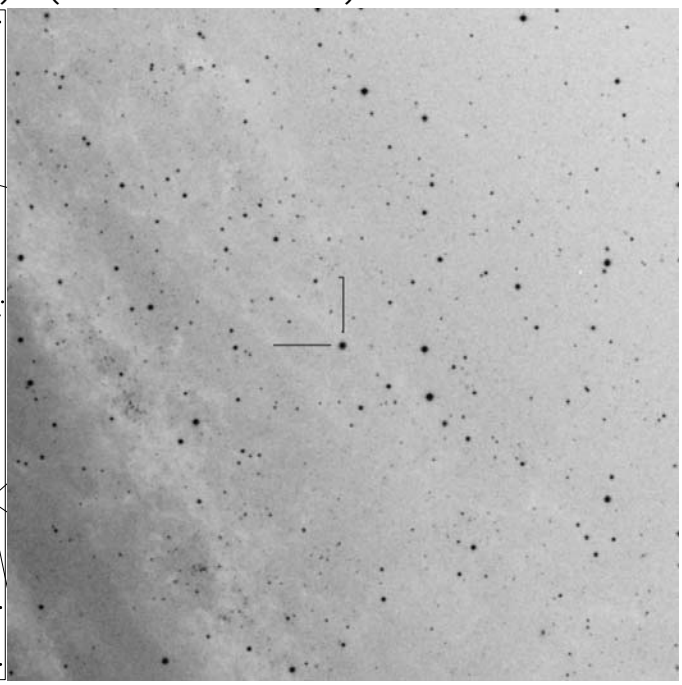


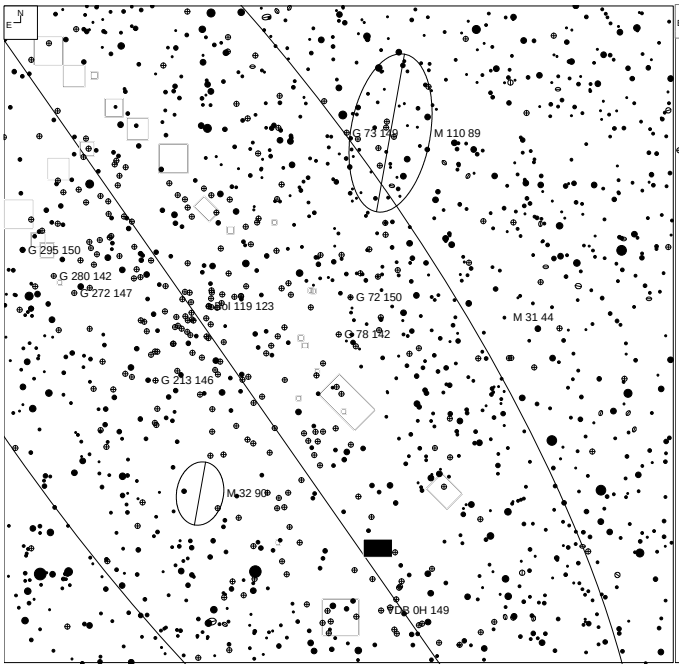


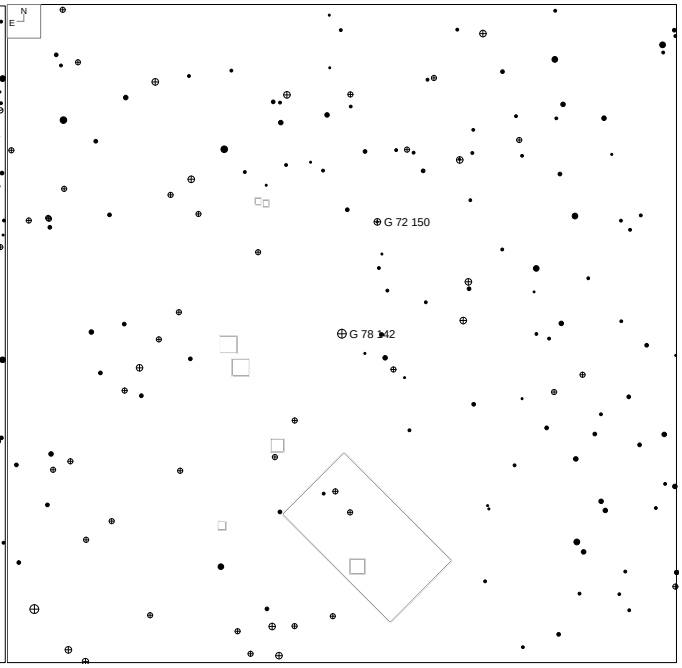
RA	Dec	V_{mag}	HB_{Mag}	Bt^*_{Mag}	SB	Size (')
00 32 46.3	+39 34 41	13.7	-	-	12.2	0.5

G78 (M31 GC) (Andromeda)



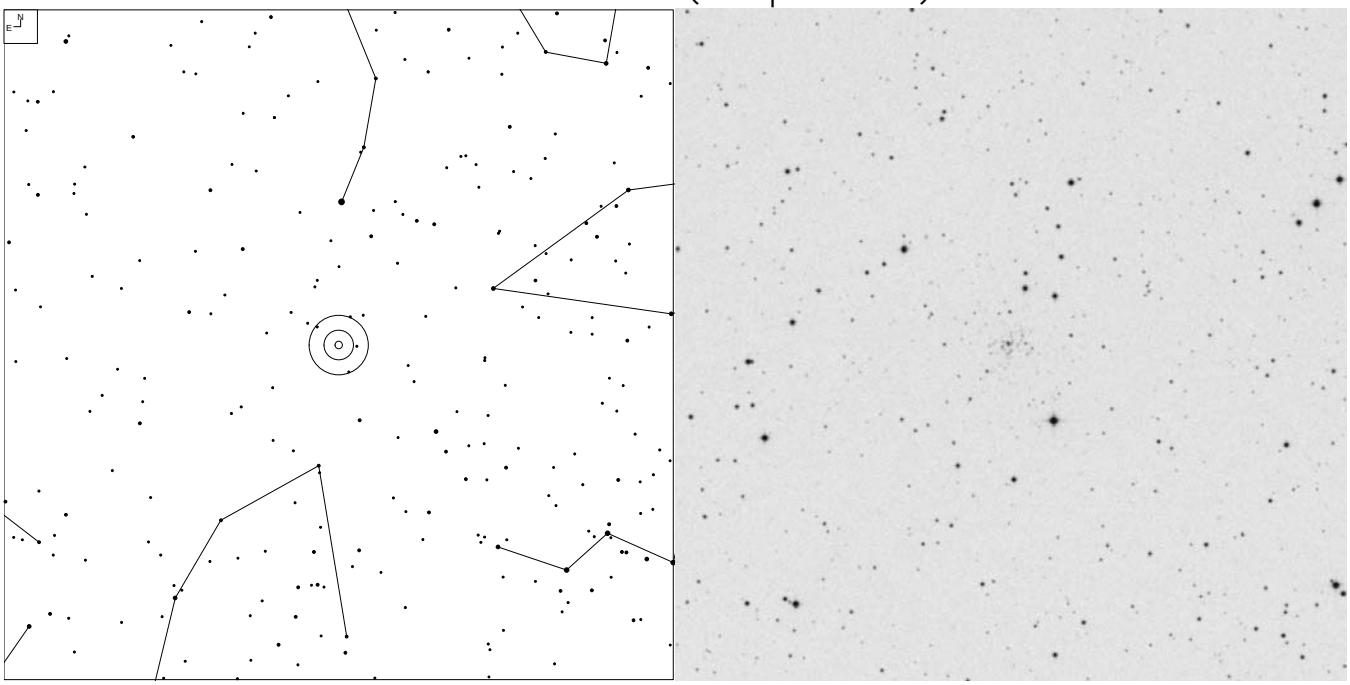


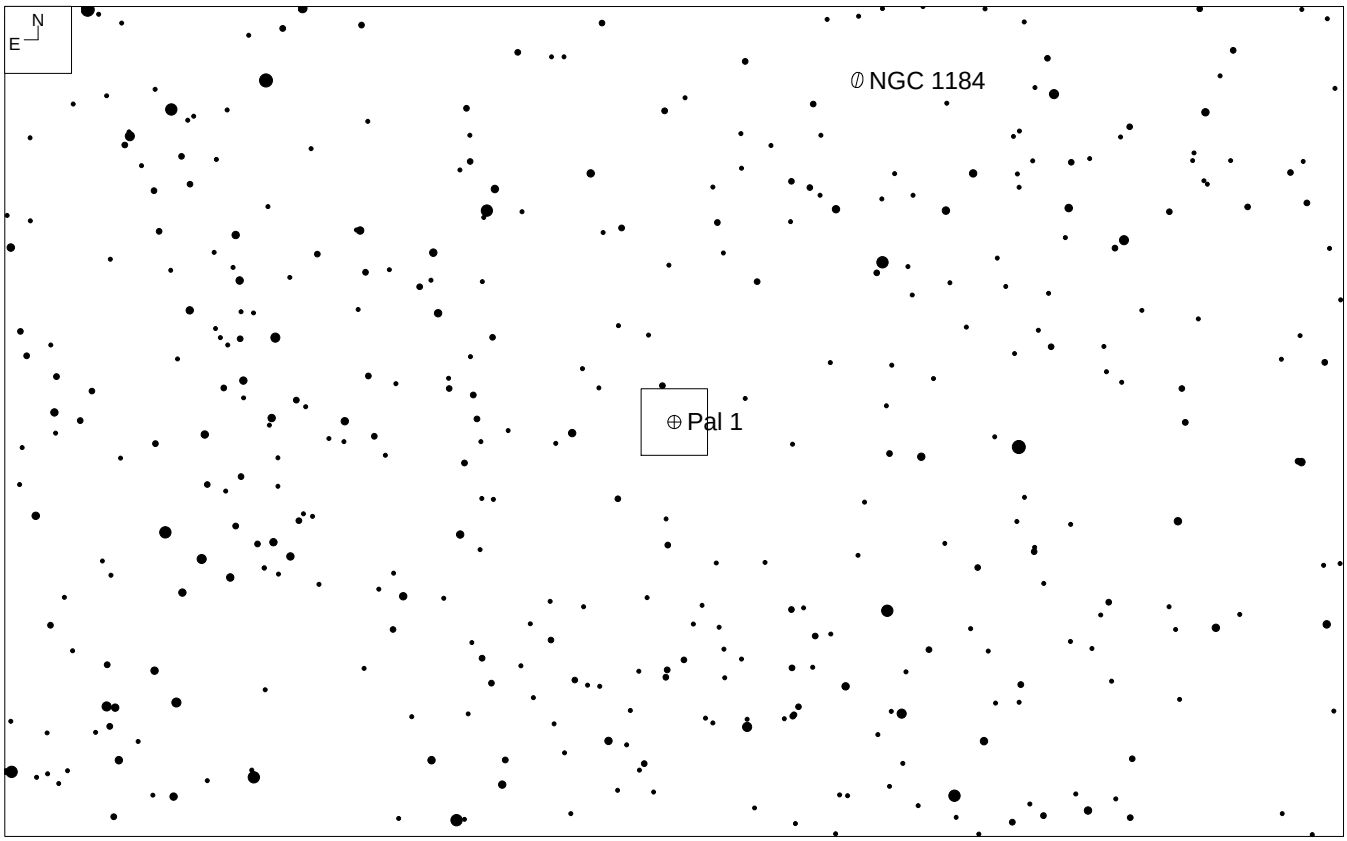




RA	Dec	V_{mag}	HB_{Mag}	Bt^*_{Mag}	SB	Size (‘)
00 41 01.1	+41 13 47	14.2	-	-	12.2	0.4

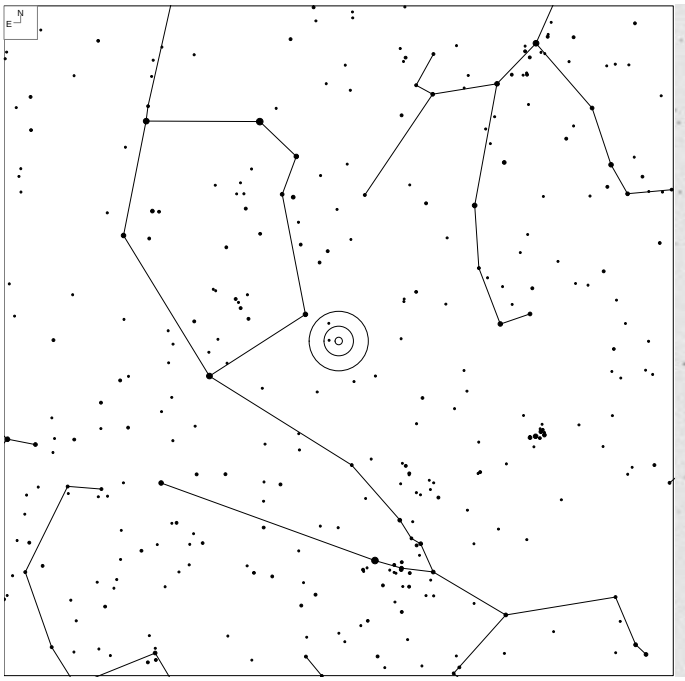
Palomar 1 (Cepheus)

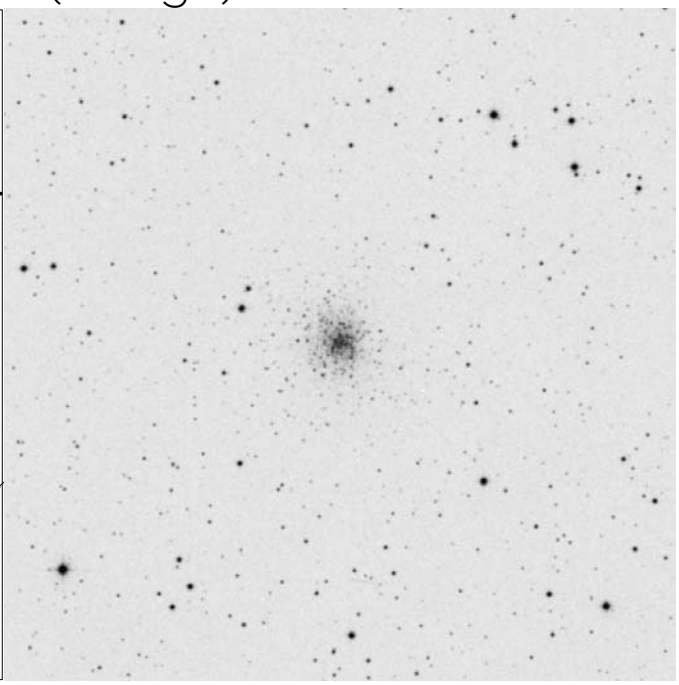


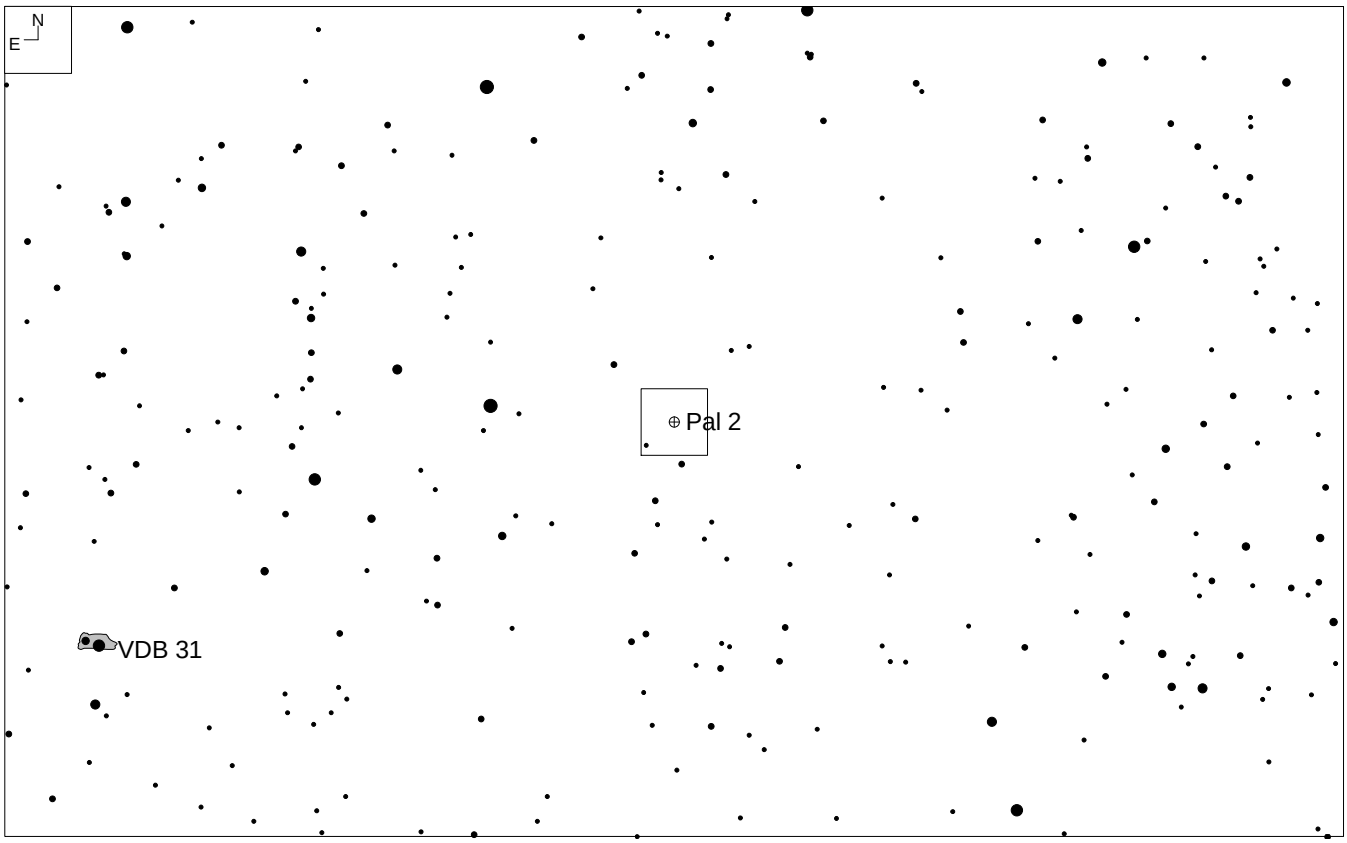


RA	Dec	V_{mag}	HB_{Mag}	$Bt*_{Mag}$	SB	Size (')
03 33 20.8	+79 34 57	13.6	16.8	16.3	15.8	2.8

Palomar 2 (Auriga)

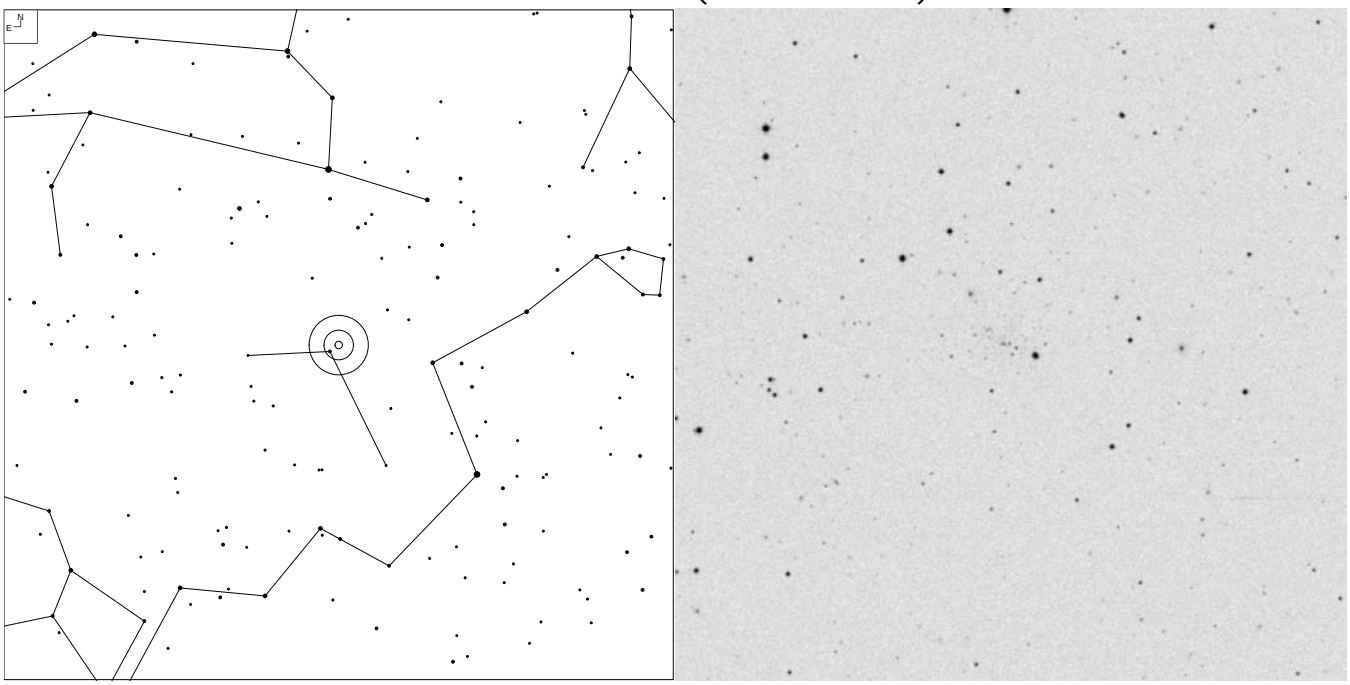


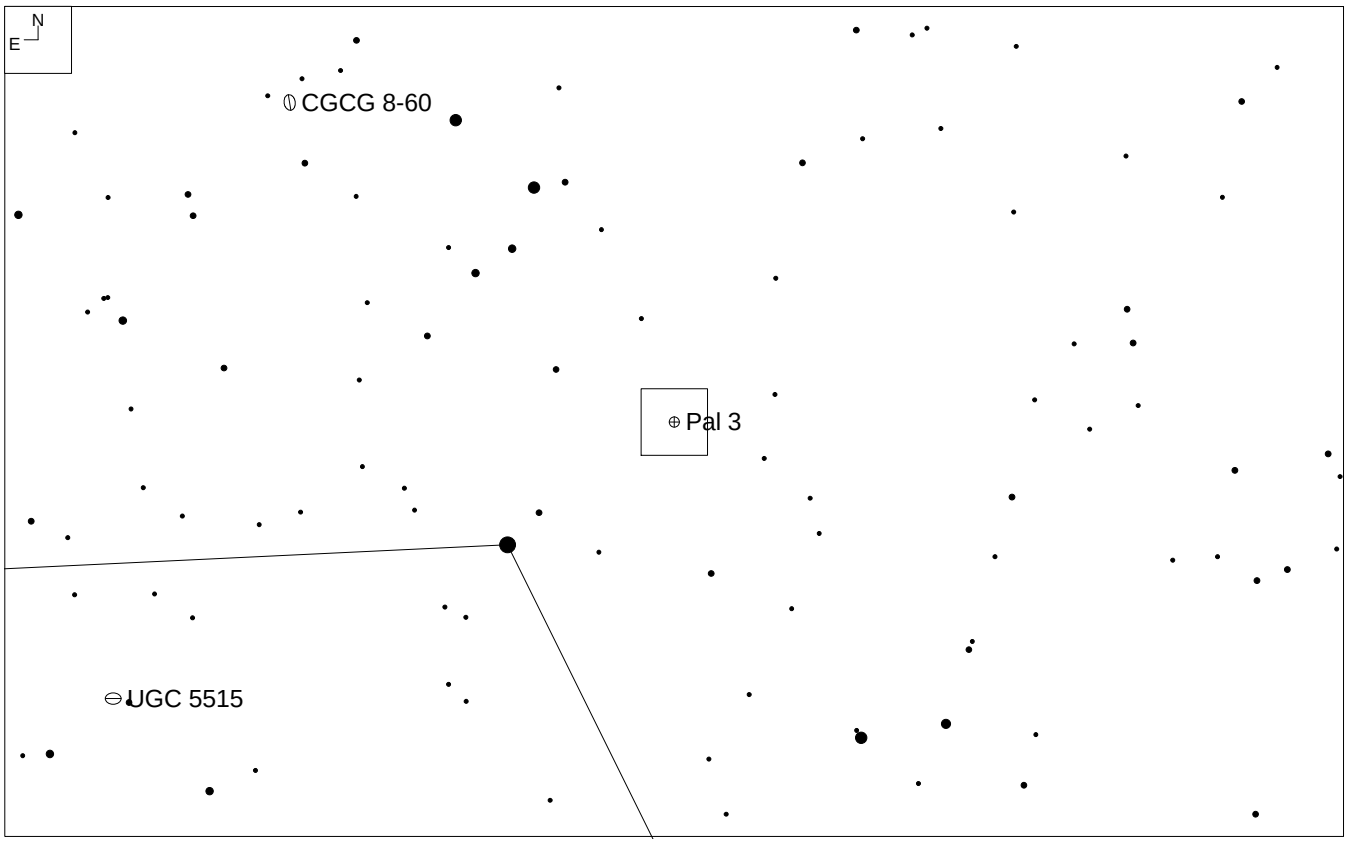




RA	Dec	V_{mag}	HB_{Mag}	Bt^*_{Mag}	SB	Size (')
04 46 05.9	+31 22 51	13	21.7	18.8	14.7	2.2

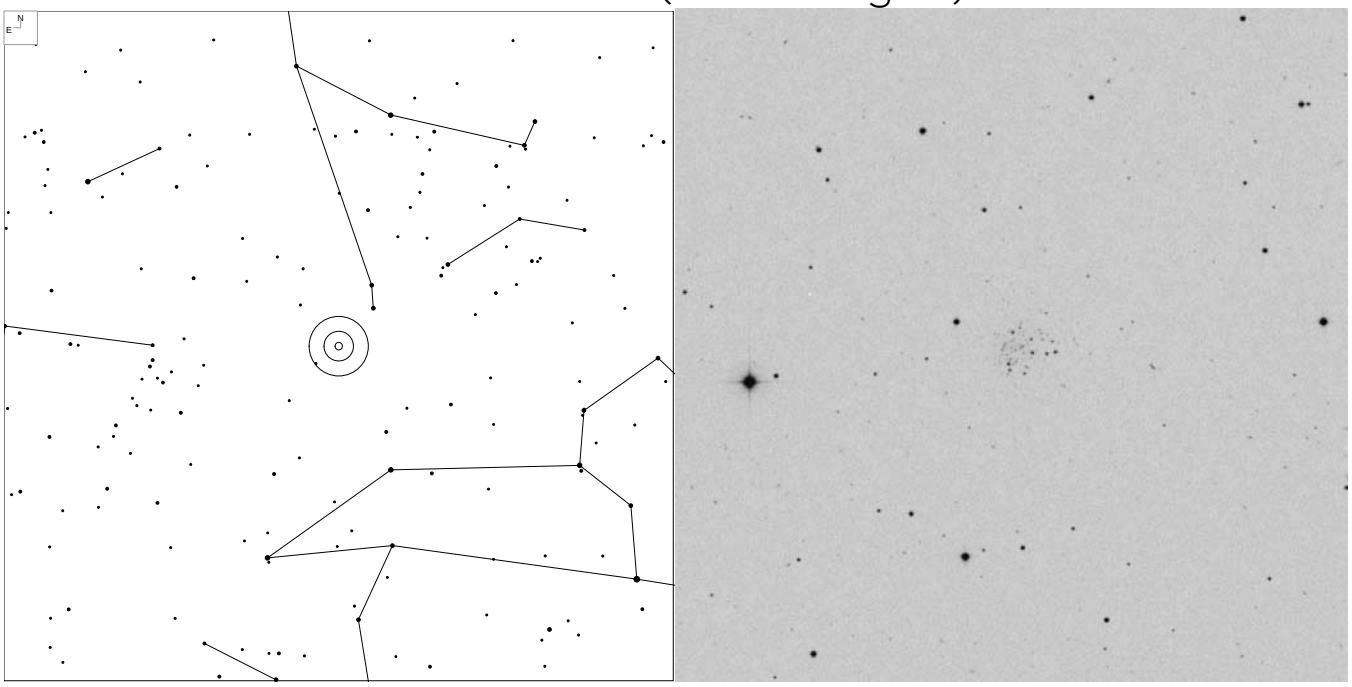
Palomar 3 (Sextans)

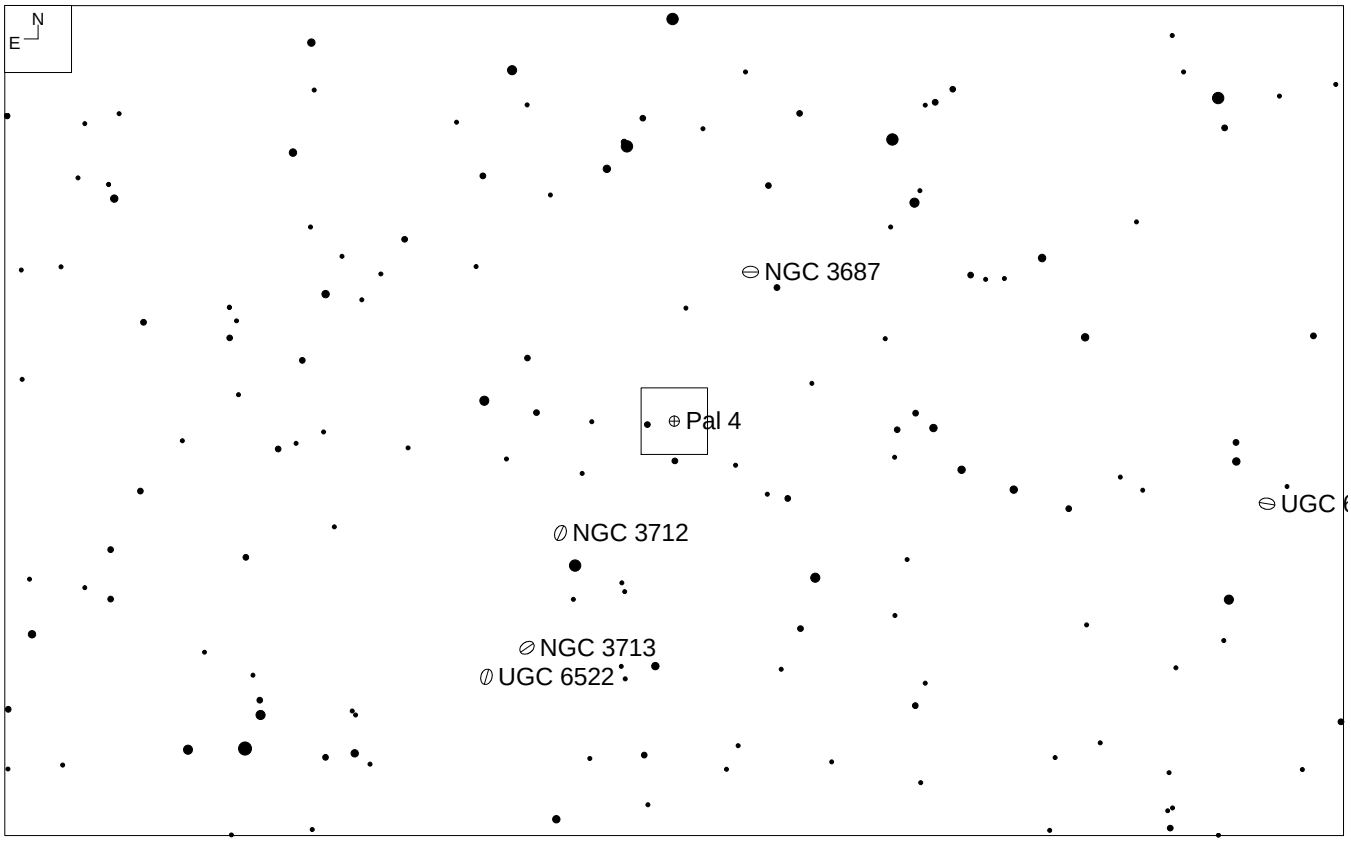




RA	Dec	V_{mag}	HB_{Mag}	$Bt*_{Mag}$	SB	Size (')
10 05 31.4	+00 04 17	13.9	20.5	18	14.9	1.6

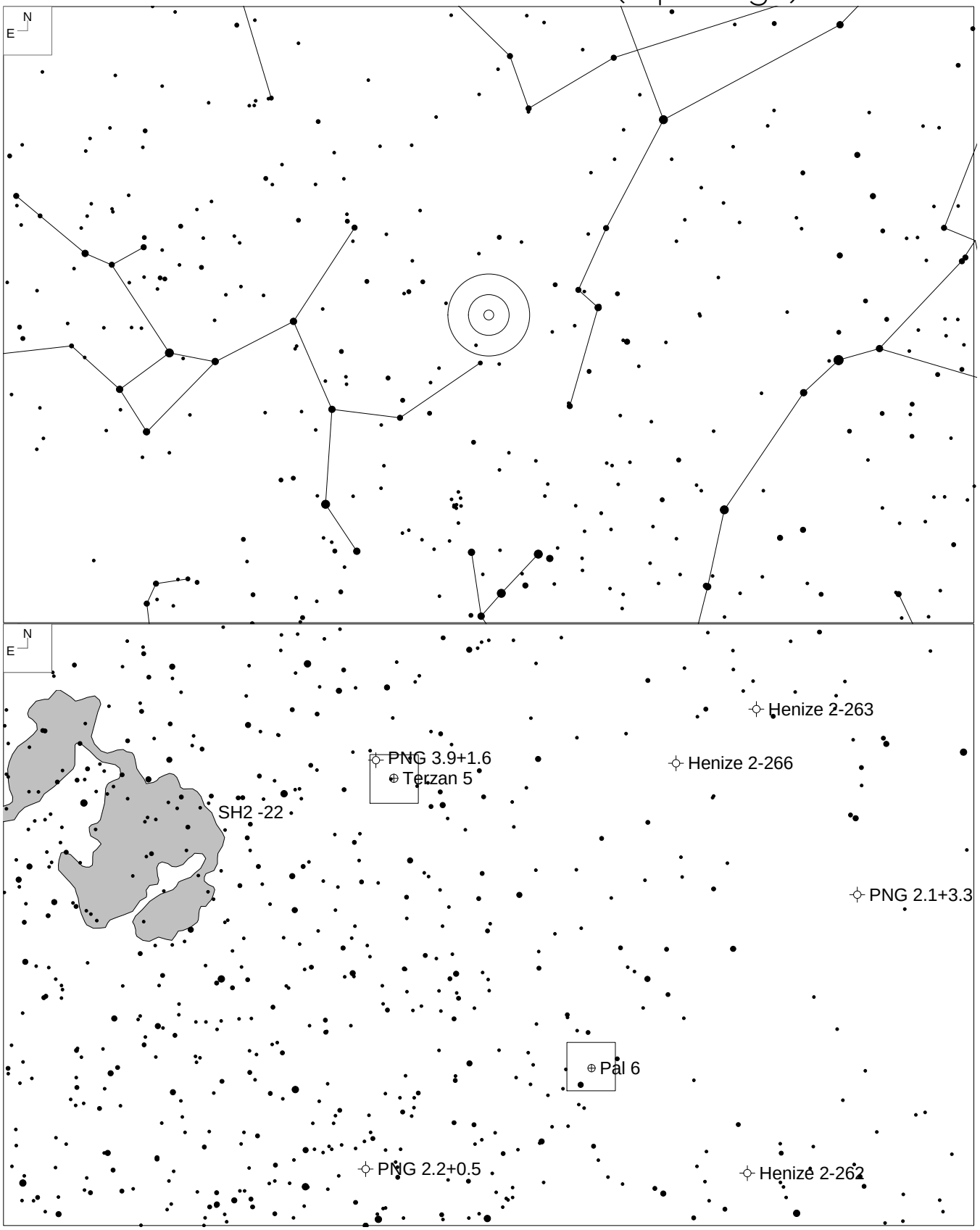
Palomar 4 (Ursa Major)





RA	Dec	V_{mag}	HB_{Mag}	$Bt*_{Mag}$	SB	Size (')
11 29 16.8	+28 58 25	14.2	20.8	18	14.8	1.3

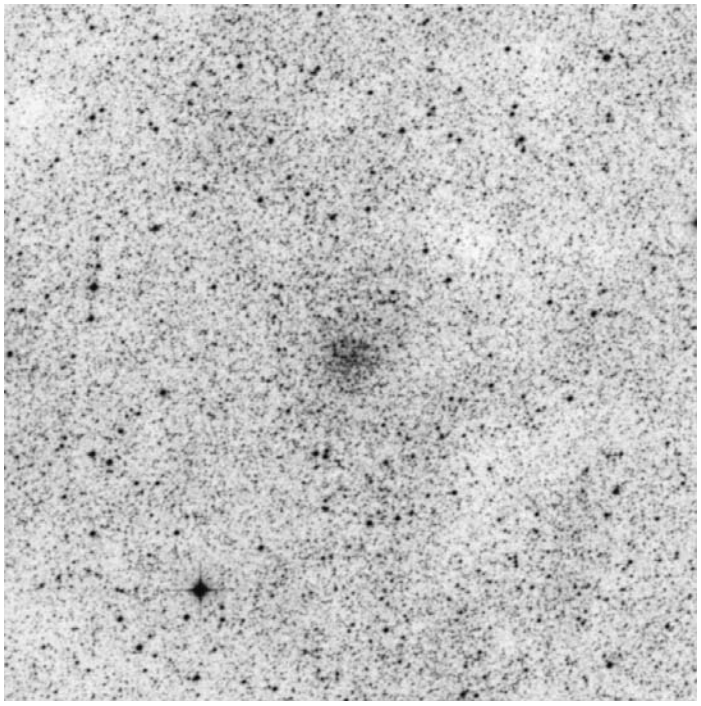
Palomar 6 and Terzan 5 (Oph/Sgr)



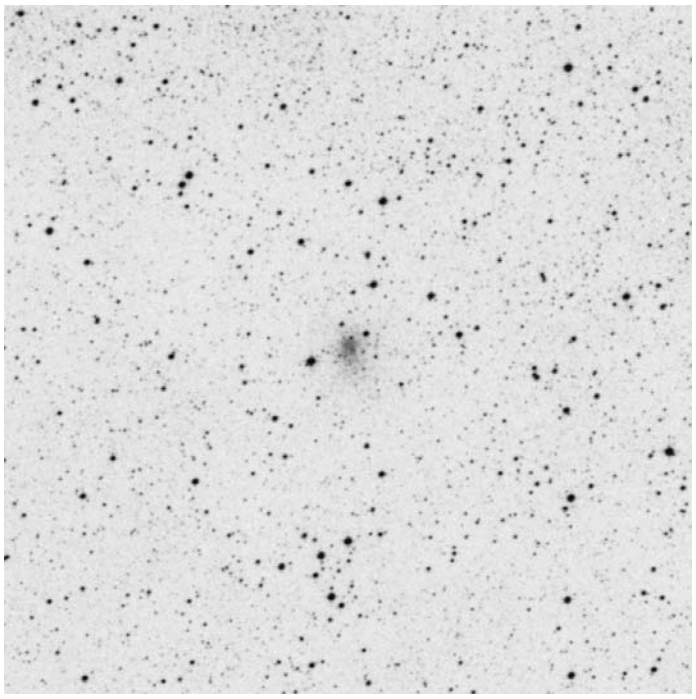
Look for JaFu1 a PNe in Palomar 6 on page 100

	RA	Dec	V_{mag}	HB_{Mag}	$Bt*_{Mag}$	SB	Size (‘)
Palomar 6	17 43 42.2	-26 13 21	11.6	19.1	-	12	1.2
Terzan 5	17 48 04.9	-24 46 47	13.9	22.5	20.5	15.8	2.4

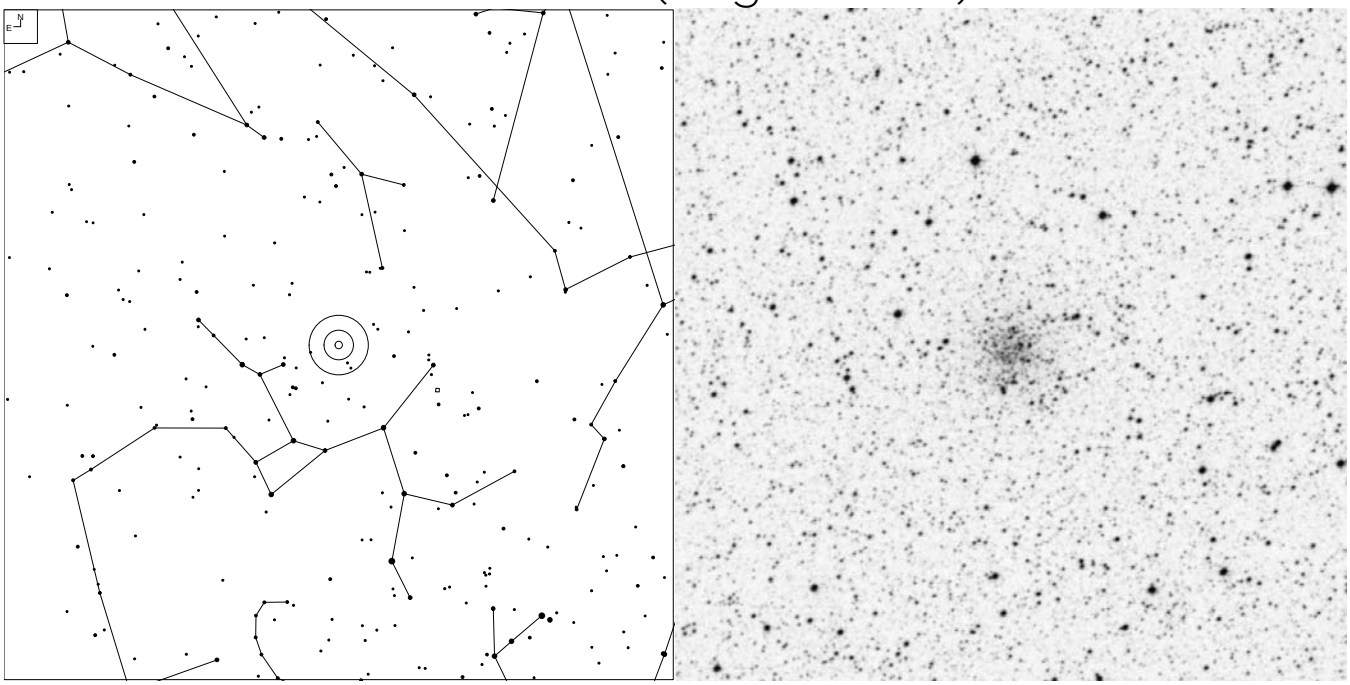
Palomar 6

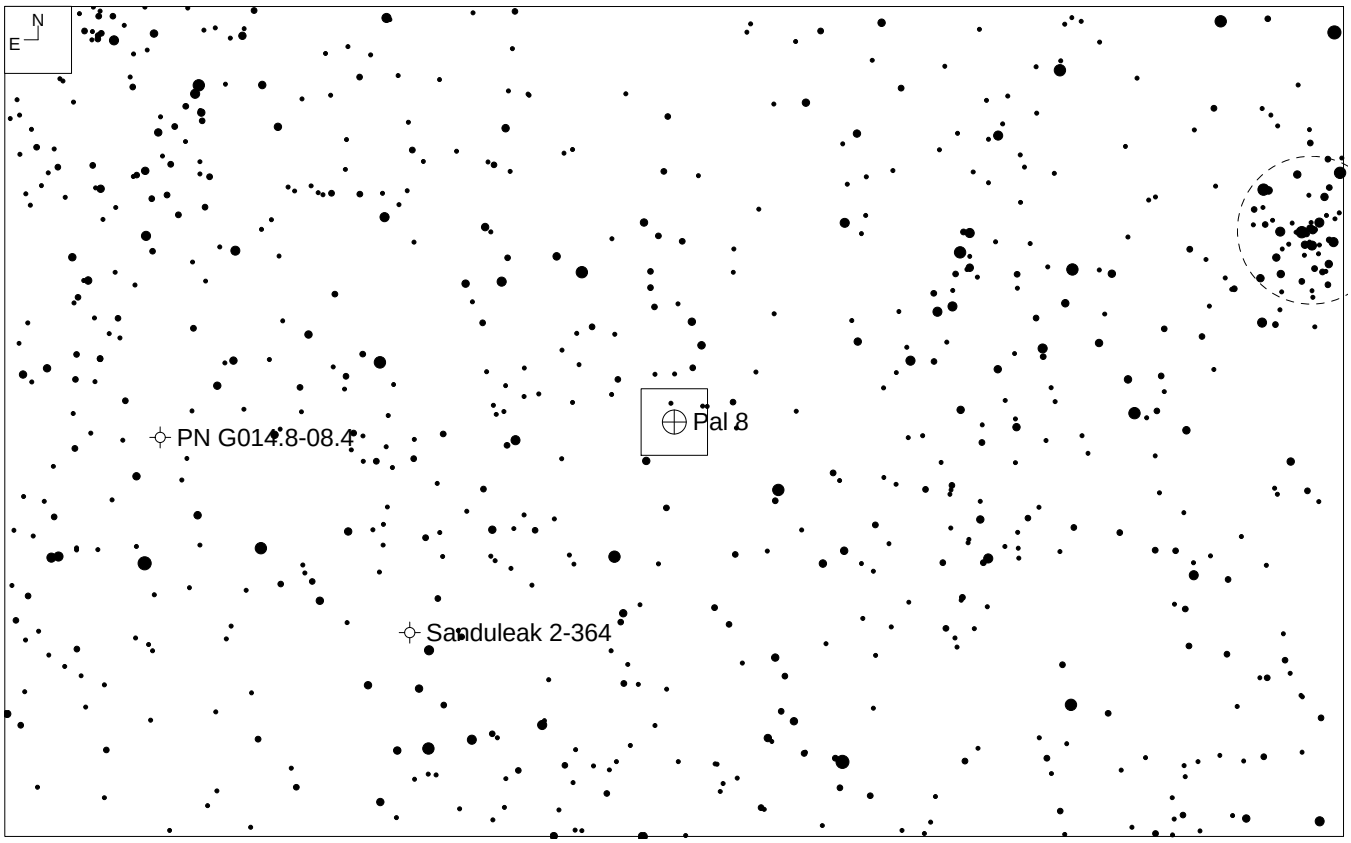


Terzan 5



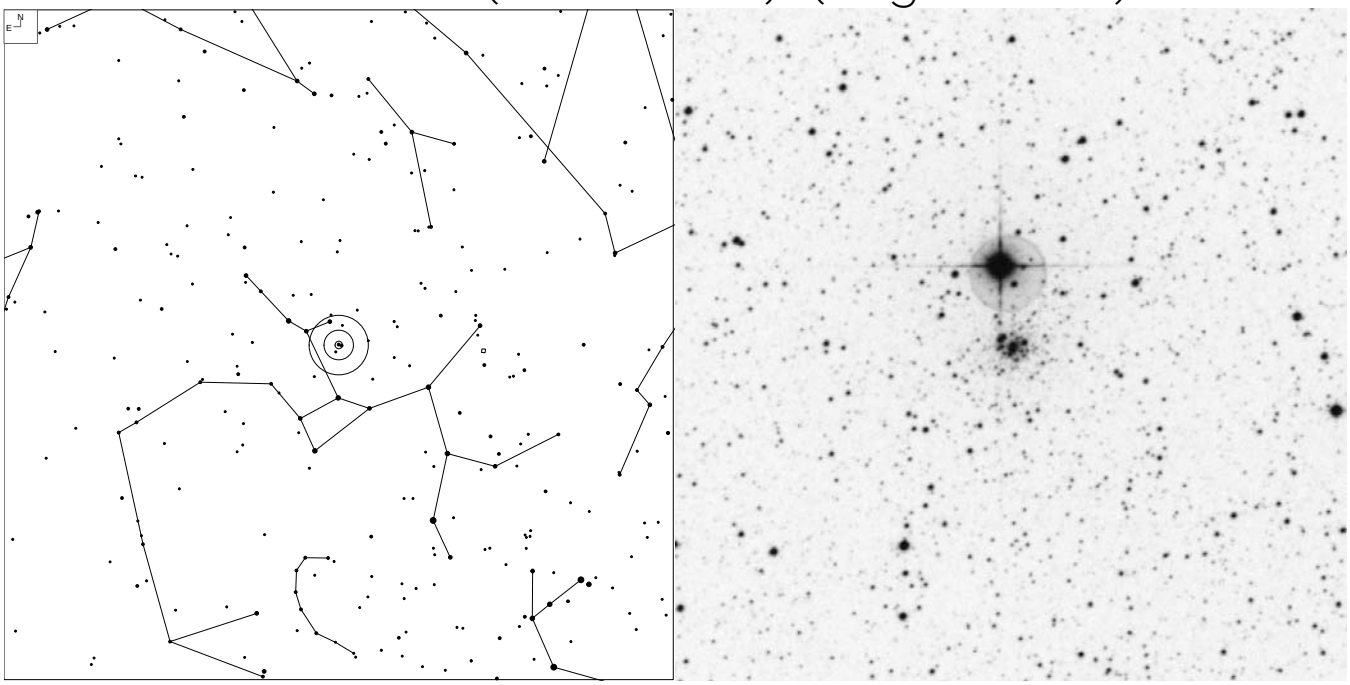
Palomar 8 (Sagittarius)

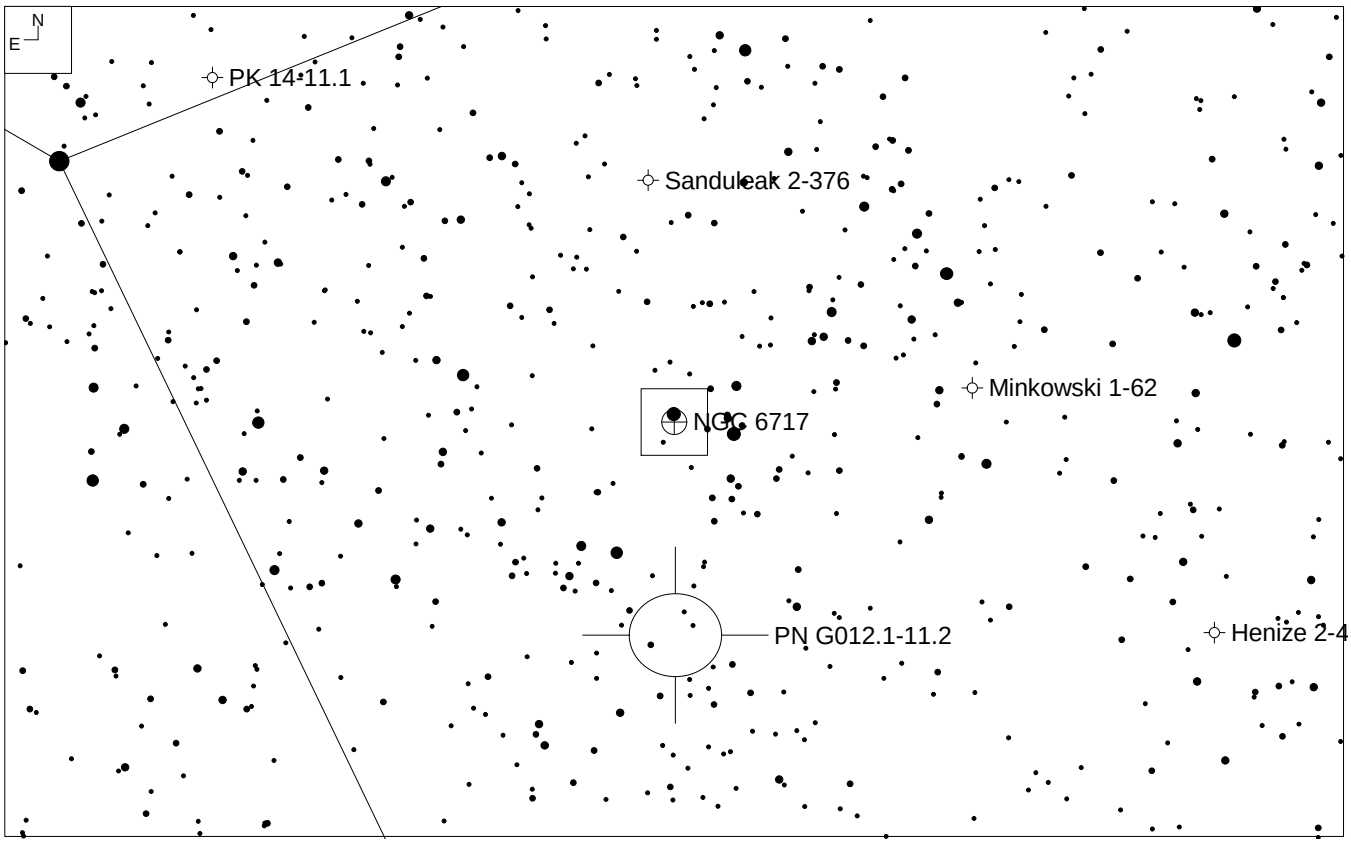




RA	Dec	V_{mag}	HB_{Mag}	$Bt*_{Mag}$	SB	Size (‘)
18 41 29.9	+19 49 33	10.9	17.3	15.4	14.5	5.2

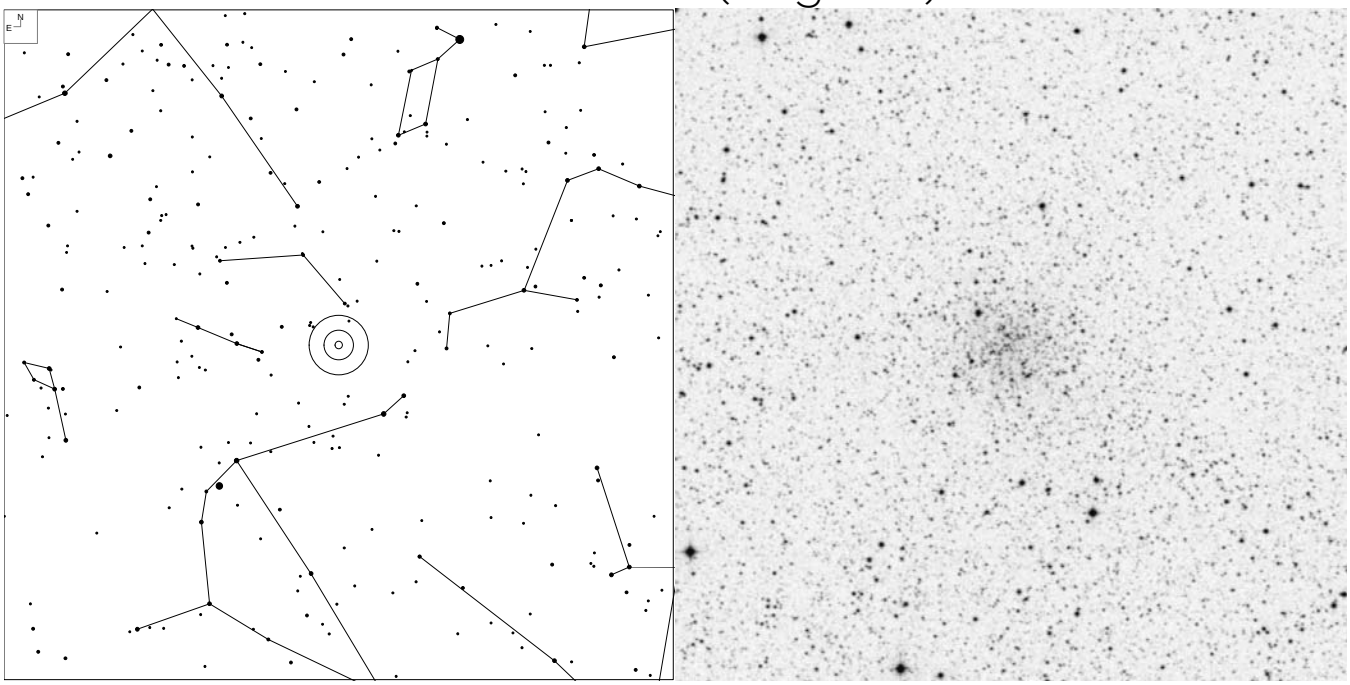
Palomar 9 (NGC 6717) (Sagittarius)

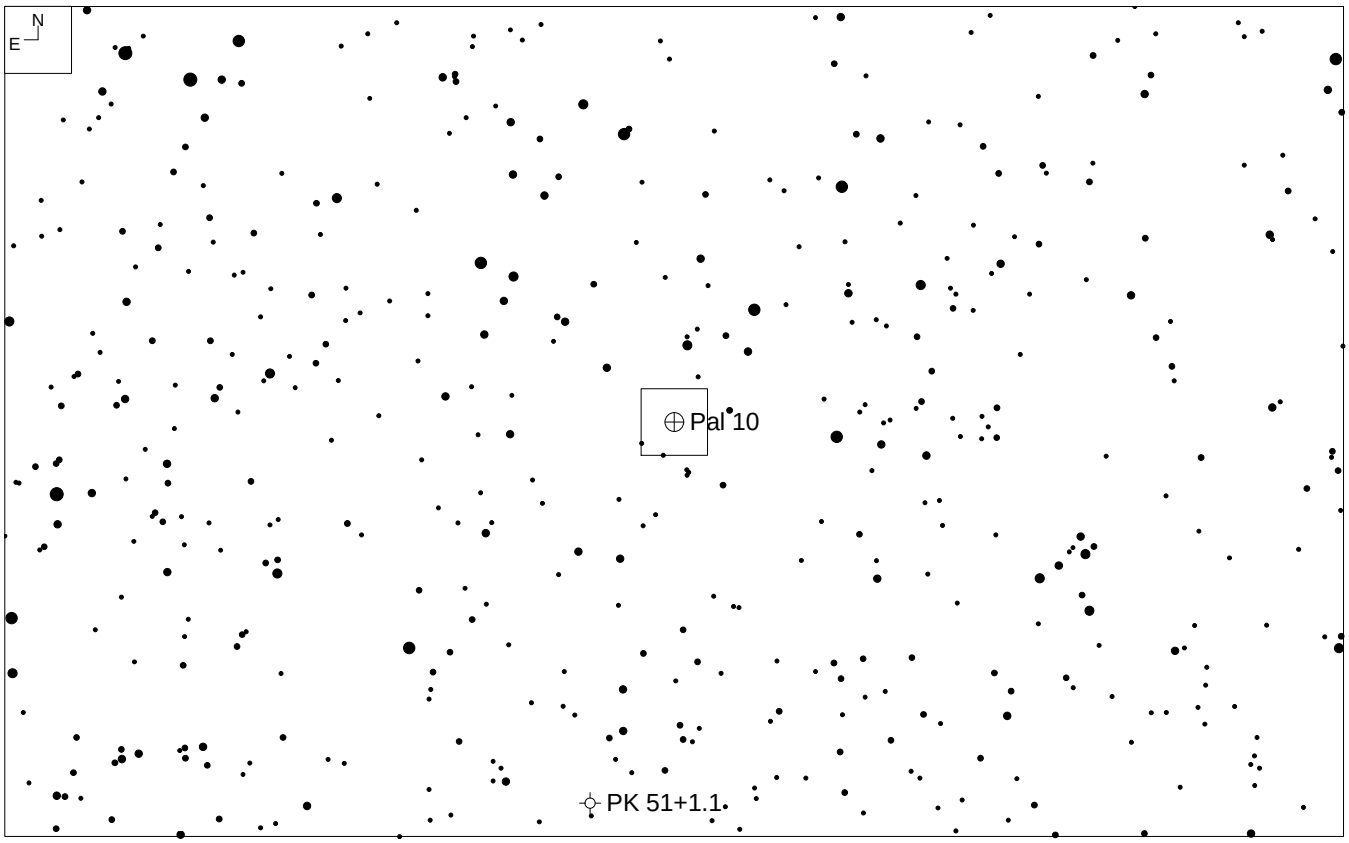




RA	Dec	V_{mag}	HB_{Mag}	$Bt*_{Mag}$	SB	Size (')
18 55 06.2	-22 42 03	8.4	15.6	14	12.1	5.4

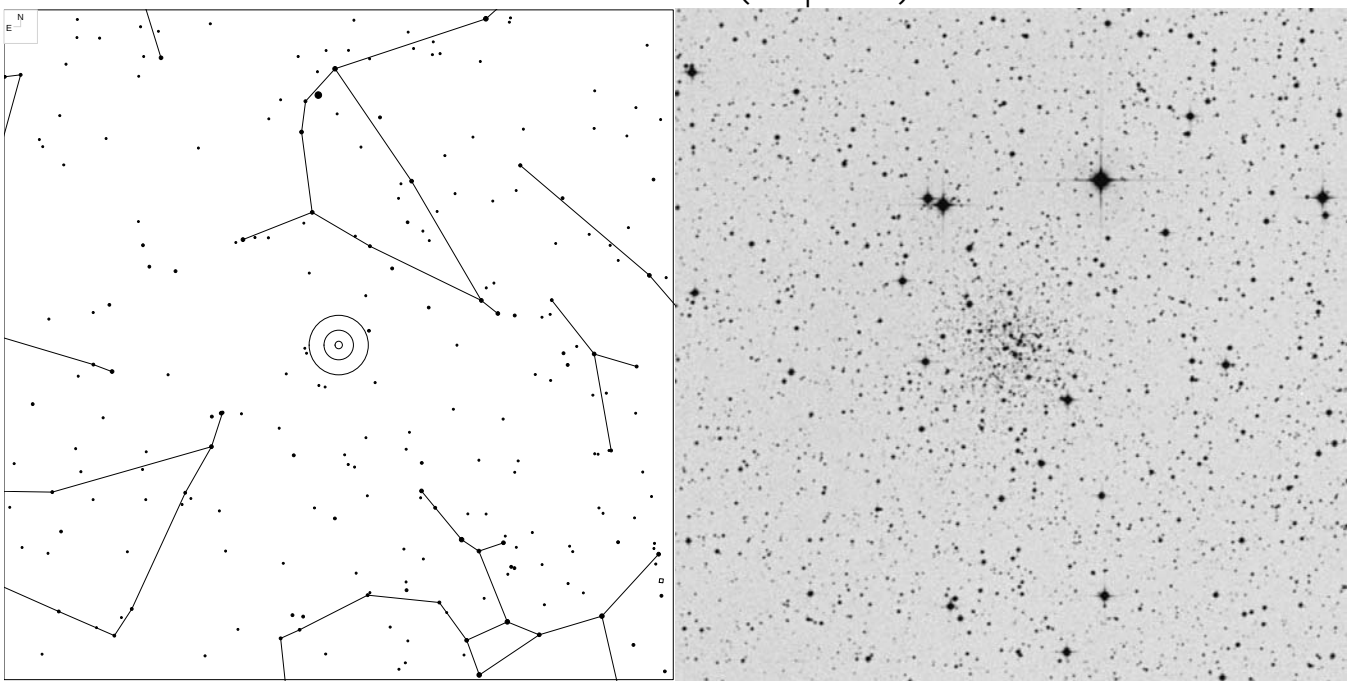
Palomar 10 (Sagitta)

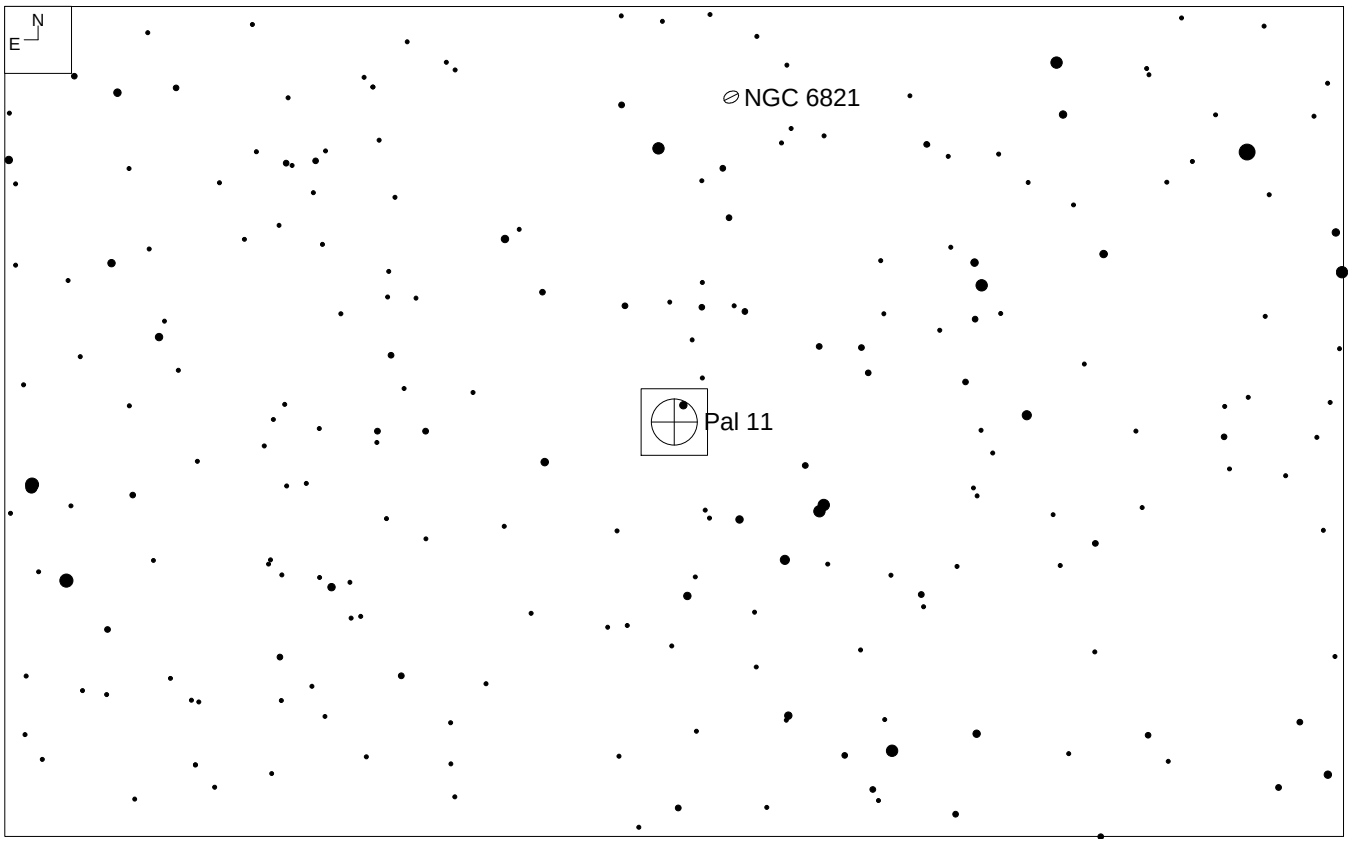




RA	Dec	V_{mag}	HB_{Mag}	$Bt*_{Mag}$	SB	Size (')
19 18 02.1	+18 34 18	13.2	19.4	18	16.2	4

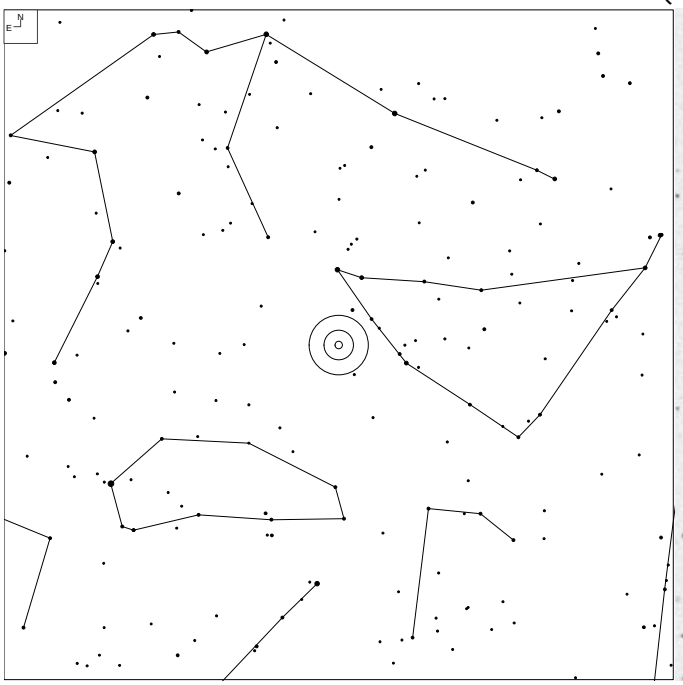
Palomar 11 (Aquila)

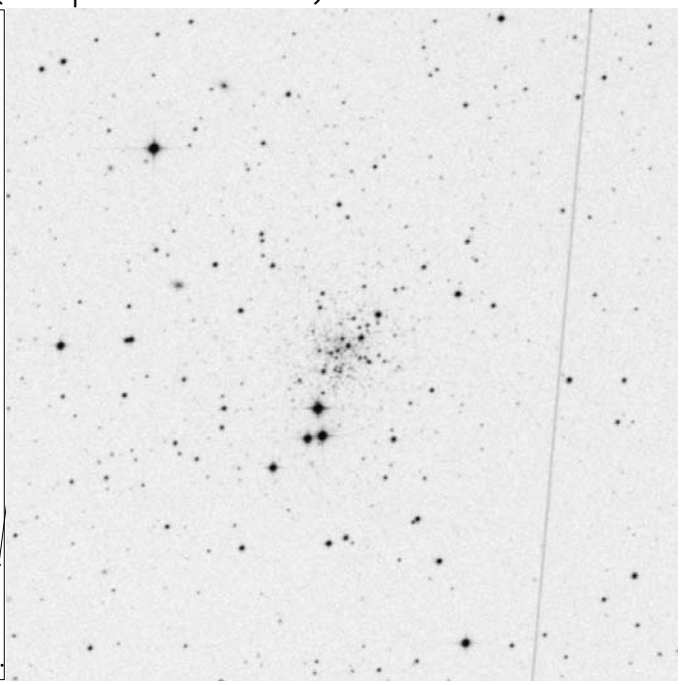


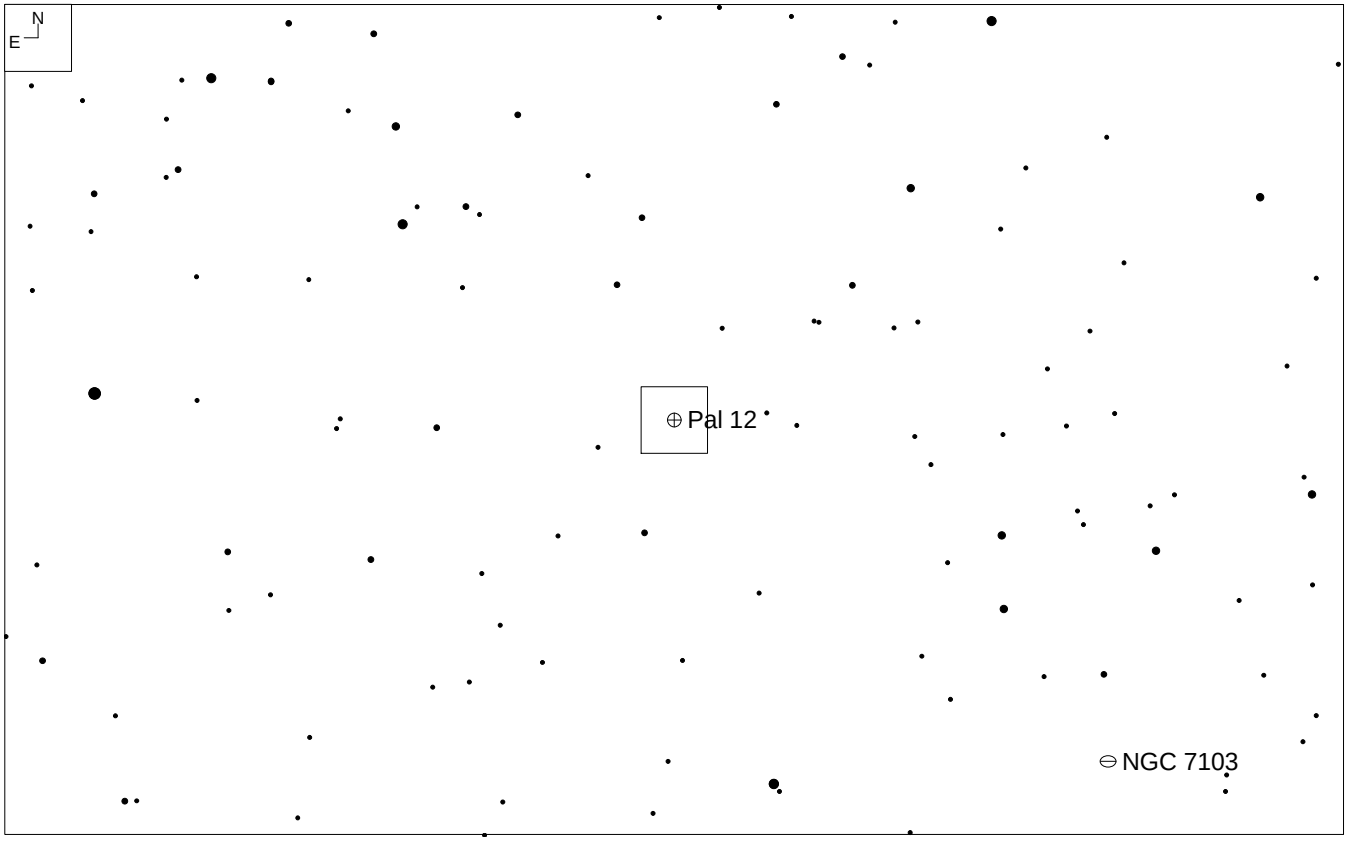


RA	Dec	V_{mag}	HB_{Mag}	Bt^*_{Mag}	SB	Size (')
19 45 14.4	-08 00 26	9.8	17.4	15.5	14.8	10

Palomar 12 (Capricornus)

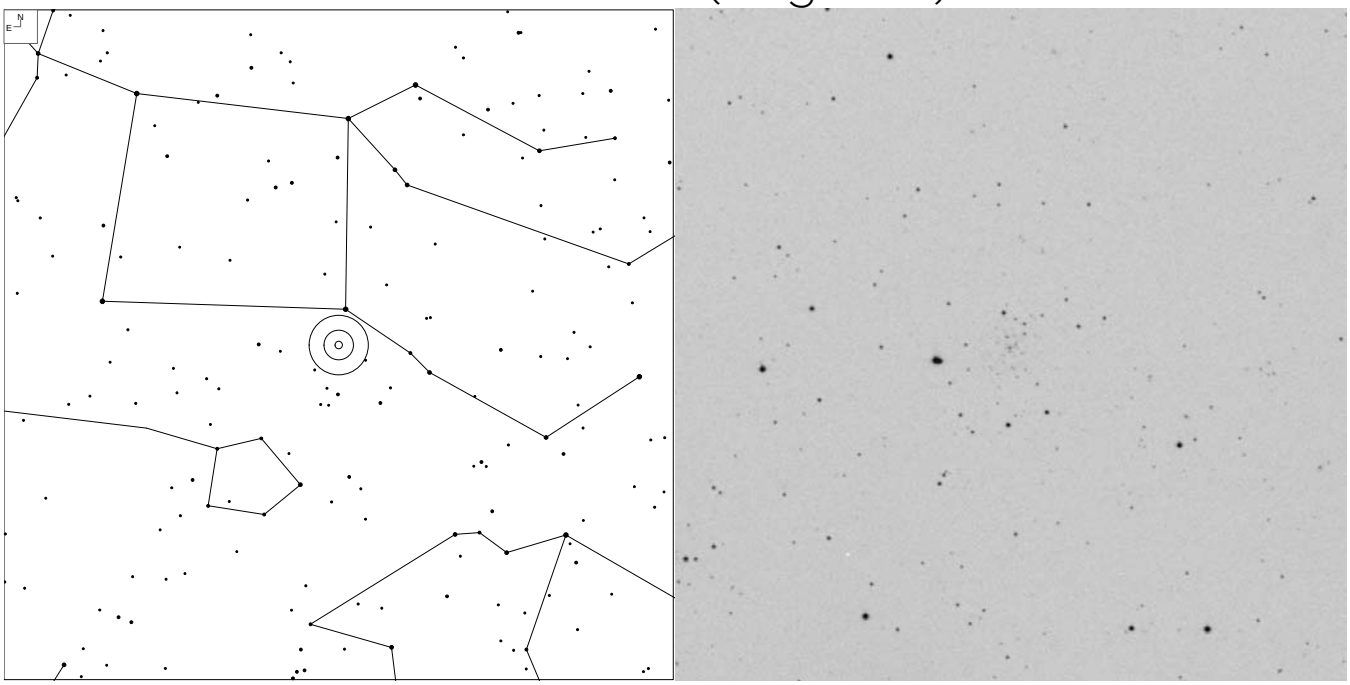


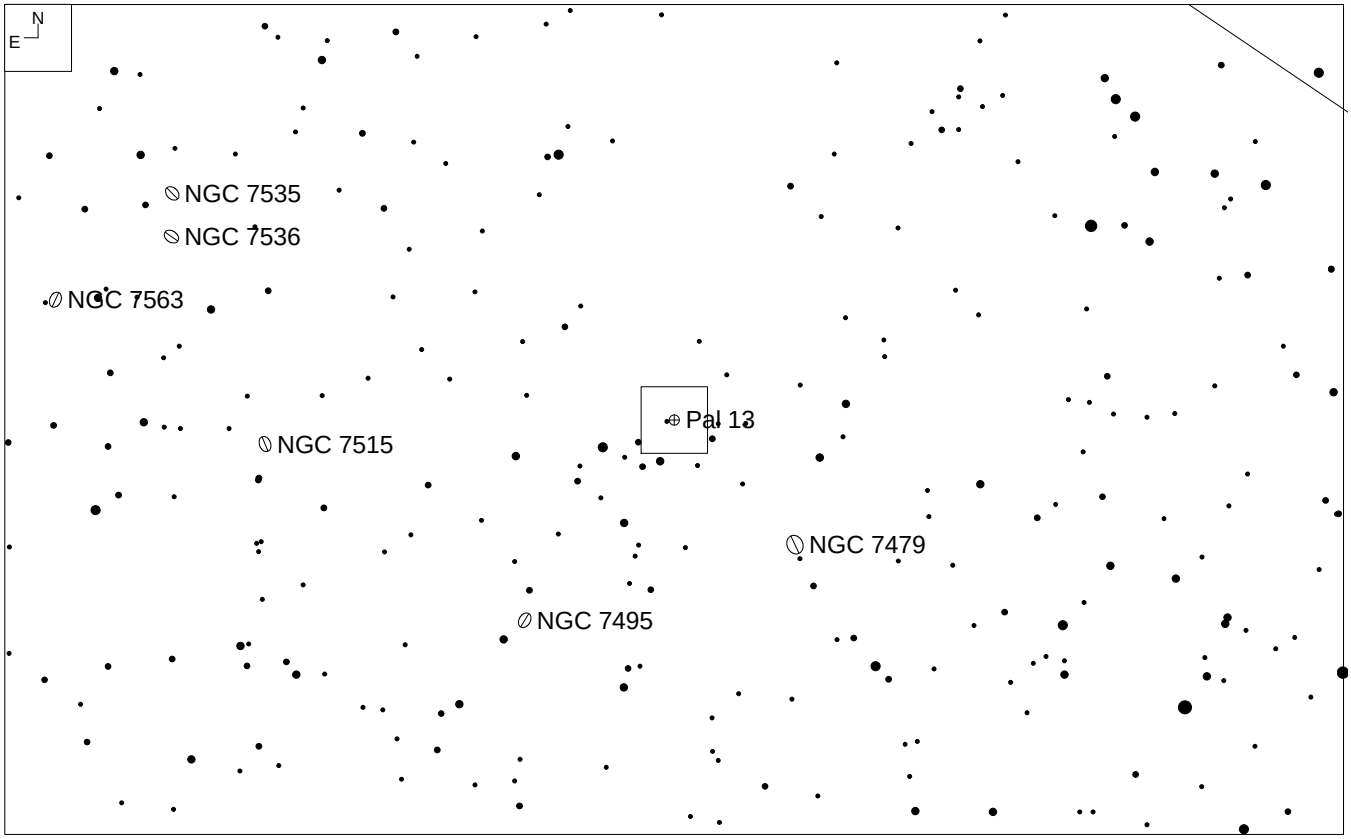




RA	Dec	V_{mag}	HB_{Mag}	Bt^*_{Mag}	SB	Size (')
21 46 38.8	-21 15 03	11.7	17.1	14.6	14	2.9

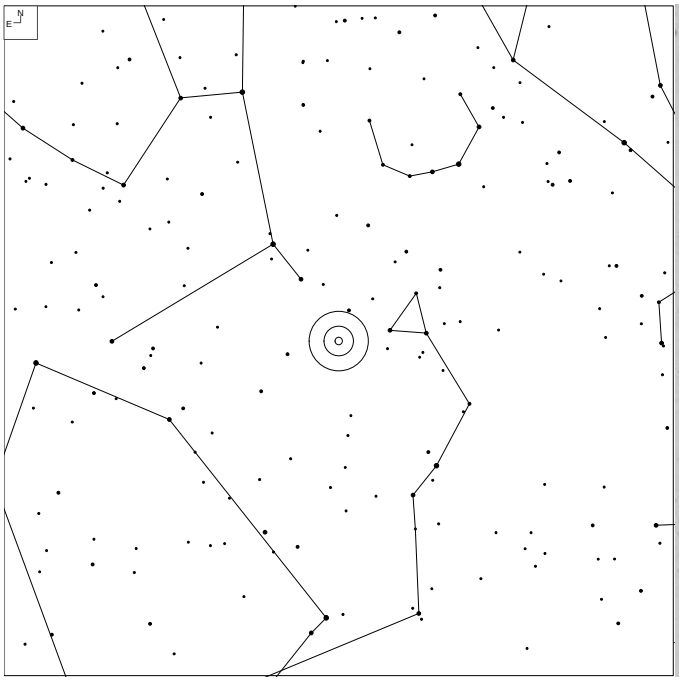
Palomar 13 (Pegasus)

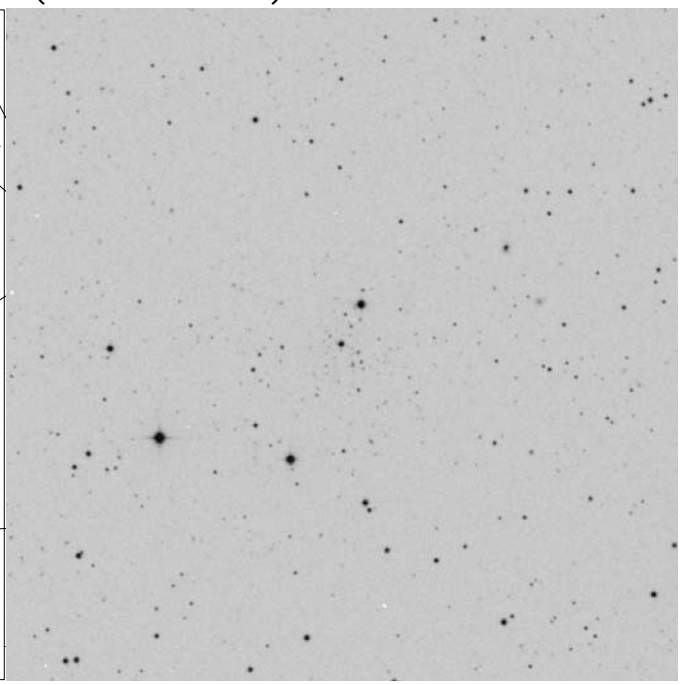


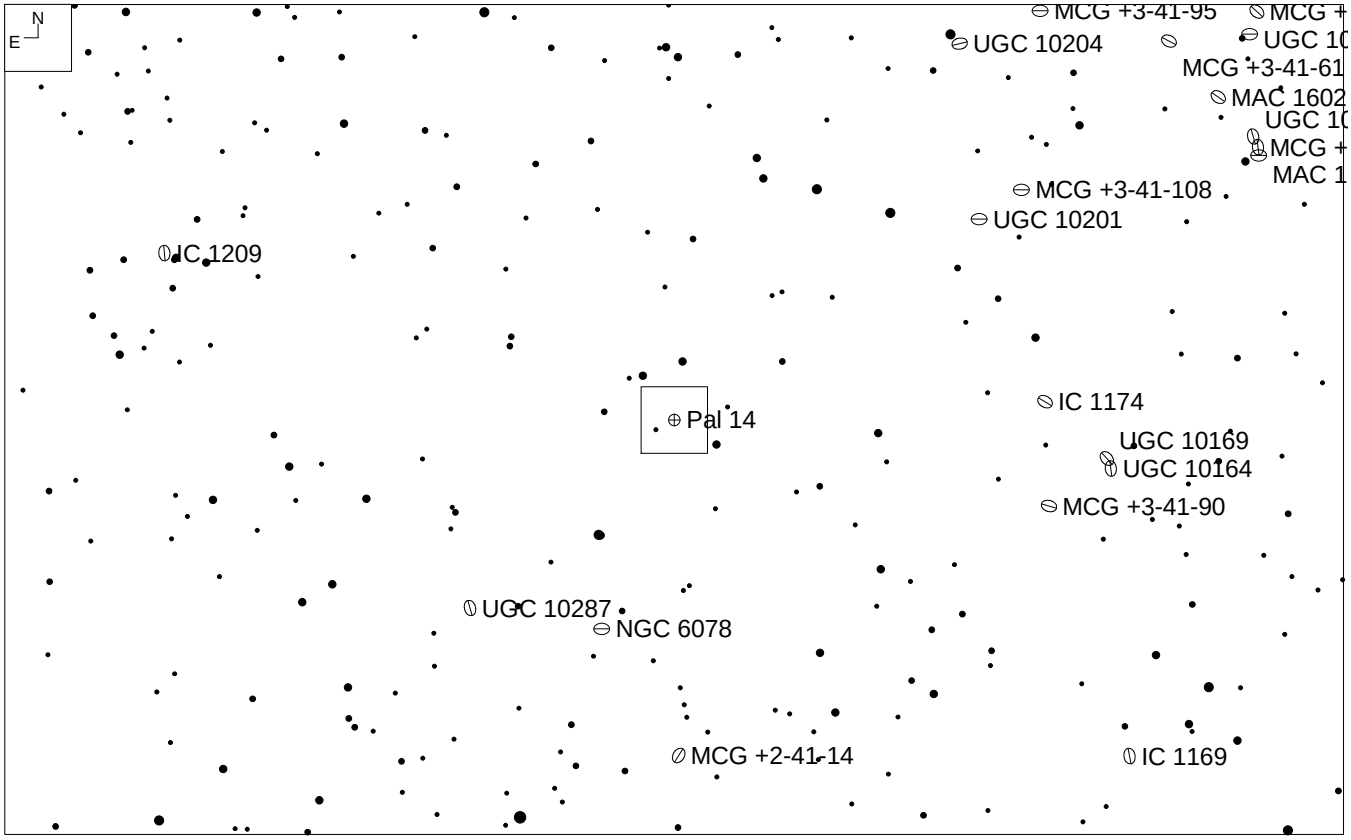


RA	Dec	V_{mag}	HB_{Mag}	$Bt*_{Mag}$	SB	Size (')
23 06 44.4	+12 46 19	13.8	17.7	17	13	0.7

Palomar 14 (Hercules)

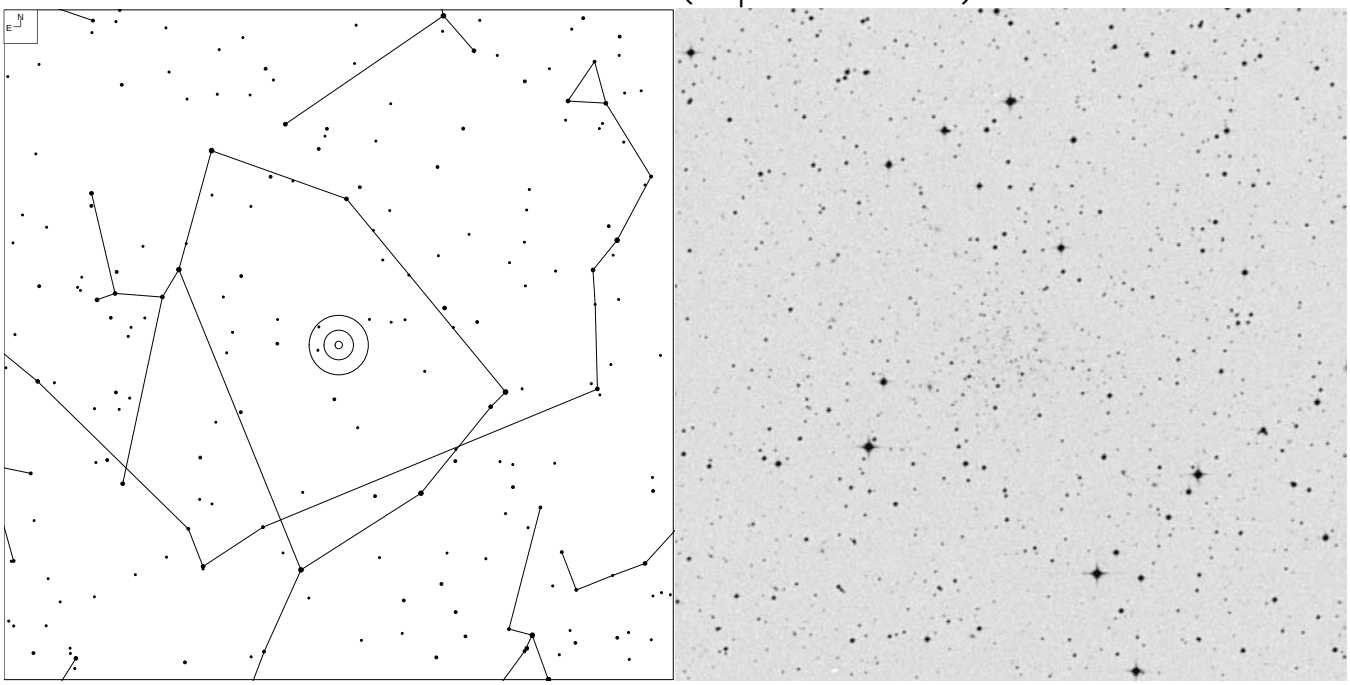


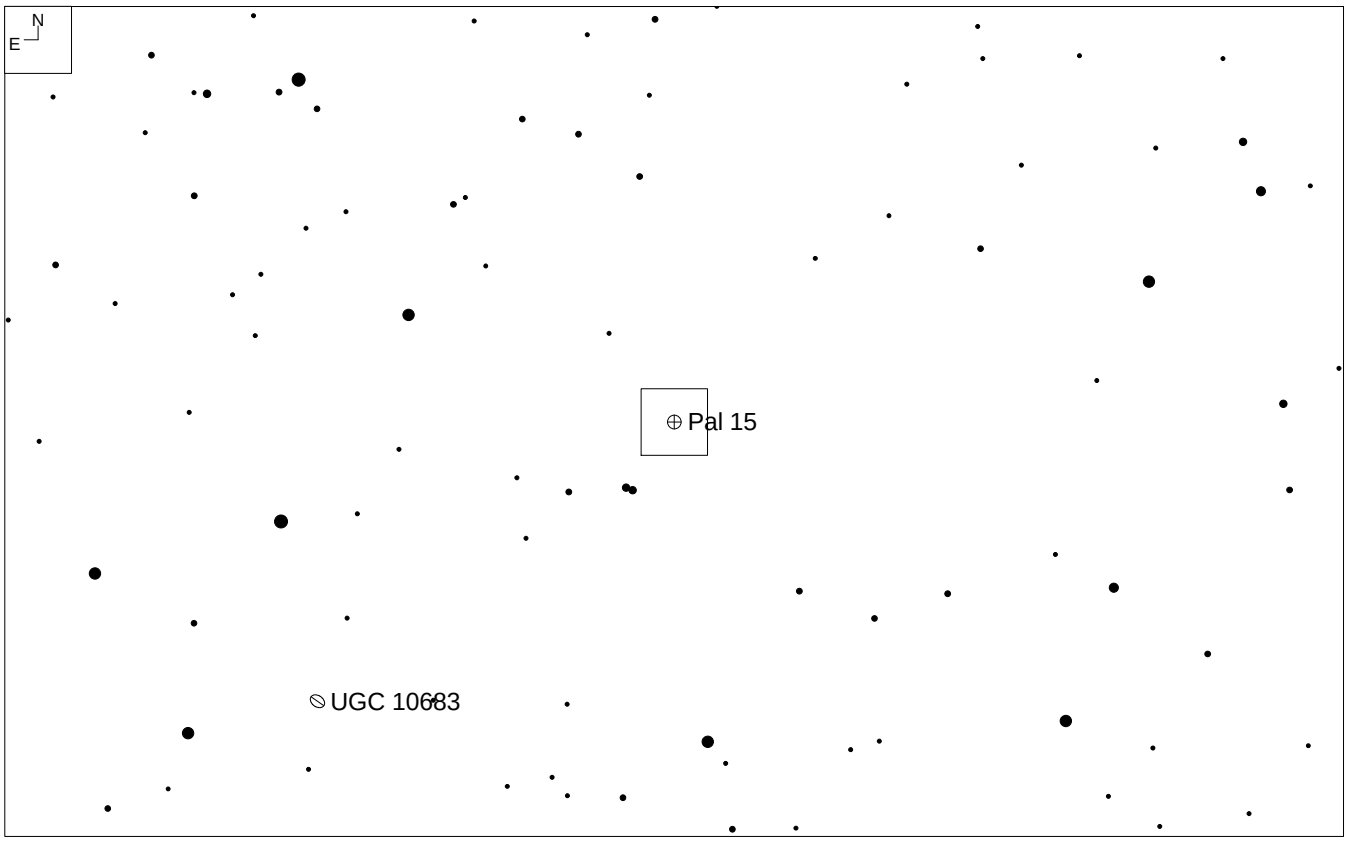




RA	Dec	V_{mag}	HB_{Mag}	$Bt*_{Mag}$	SB	Size (')
16 11 00.3	+14 57 49	14.7	20	17.6	16.7	2.5

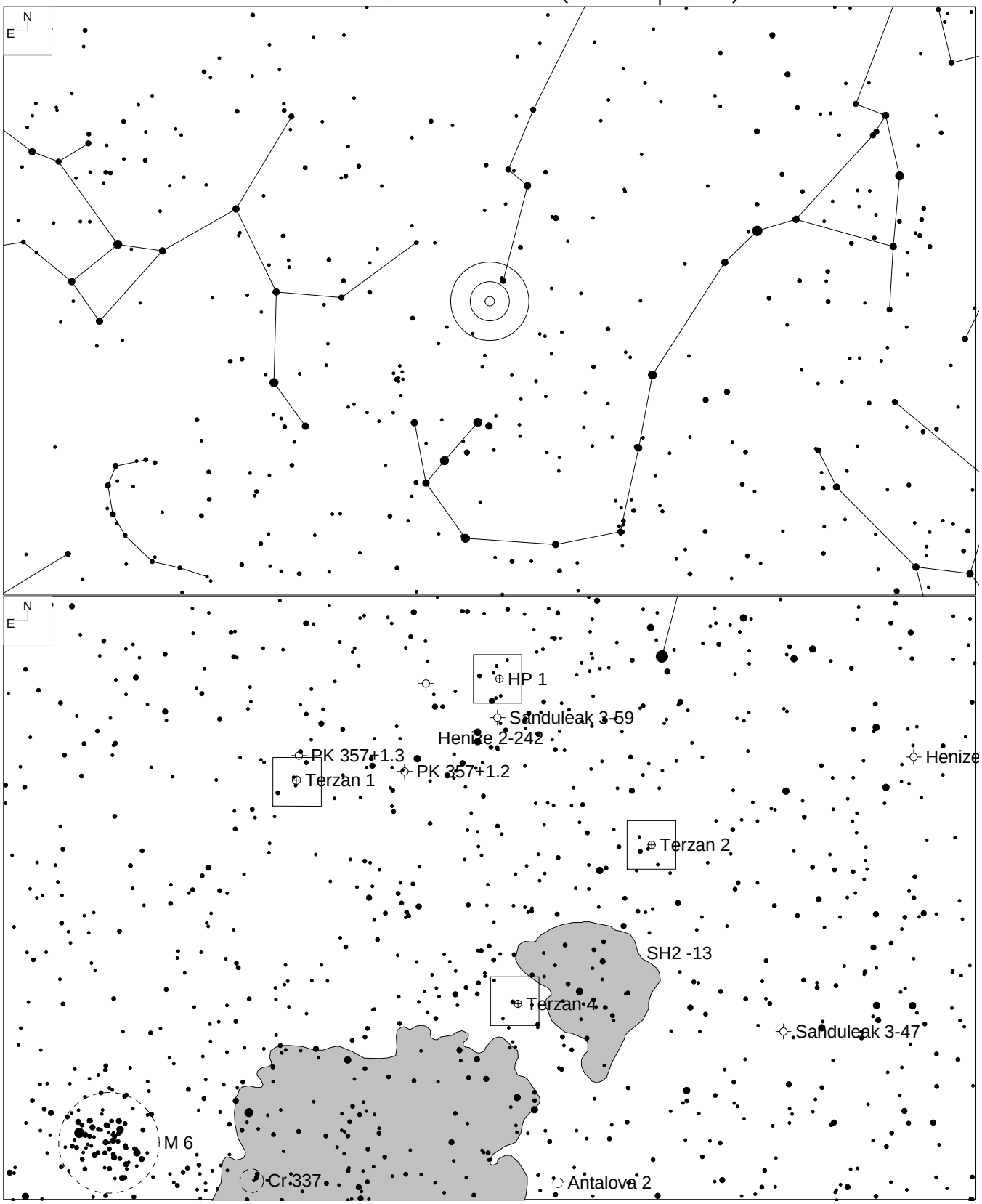
Palomar 15 (Ophiuchus)





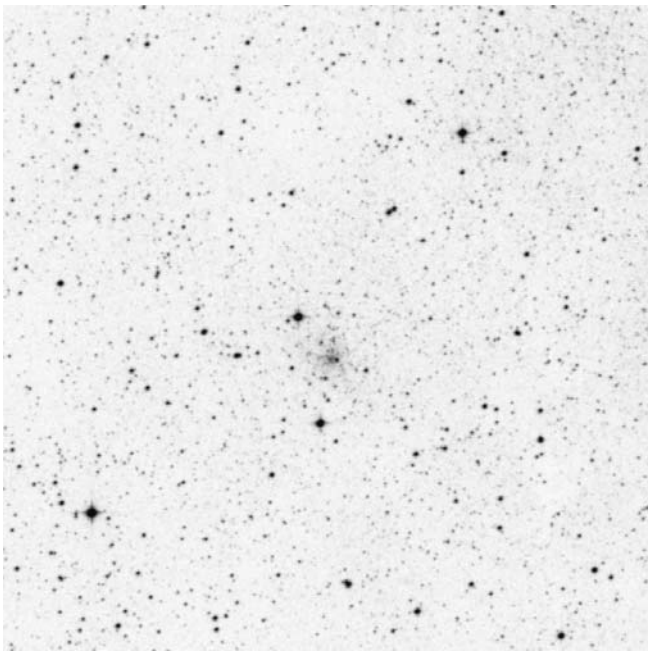
RA	Dec	V_{mag}	HB_{Mag}	Bt^*_{Mag}	SB	Size (')
16 59 50.7	-00 31 59	14.2	19.9	17.1	-	-

Terzan 1, 2 and 4 (Scorpius)

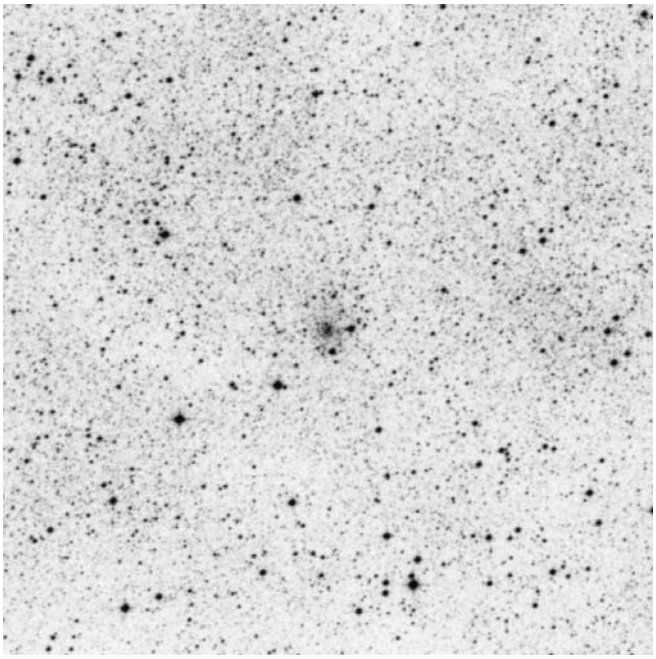


	RA	Dec	V_{mag}	HB_{Mag}	Bt^*_{Mag}	SB	Size (')
Terzan 1	17 35 47.0	-30 28 46	15.9	21.4	18.5	-	-
Terzan 2	17 27 33.4	-30 48 08	14.3	19.8	-	13.2	0.6
Terzan 4	17 30 38.9	-31 35 44	16	21.6	-	-	-

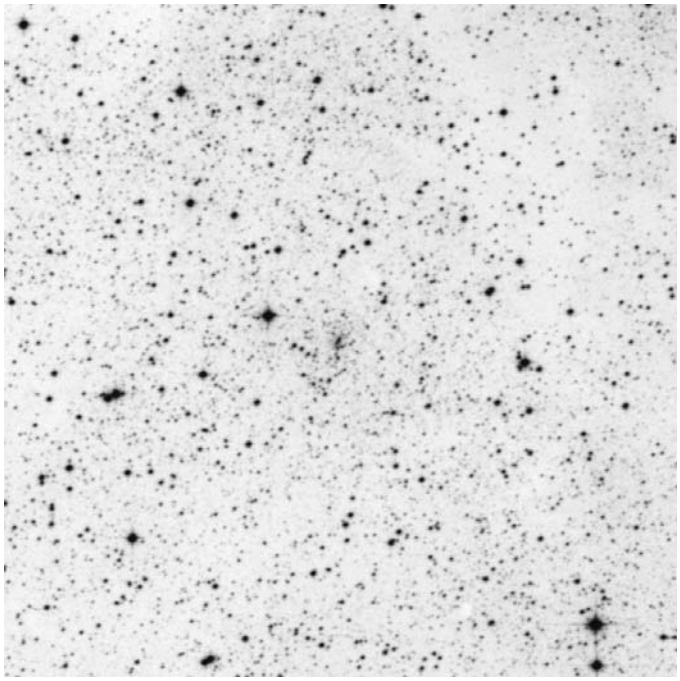
Terzan 1



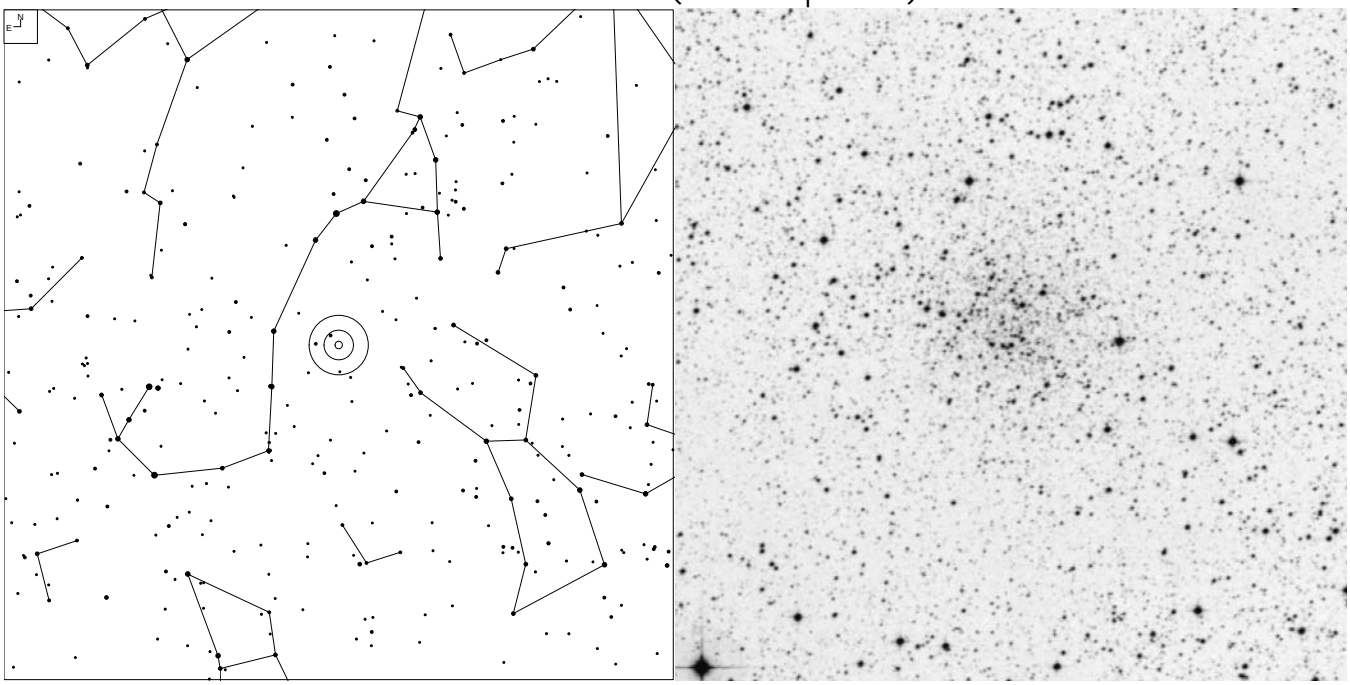
Terzan 2

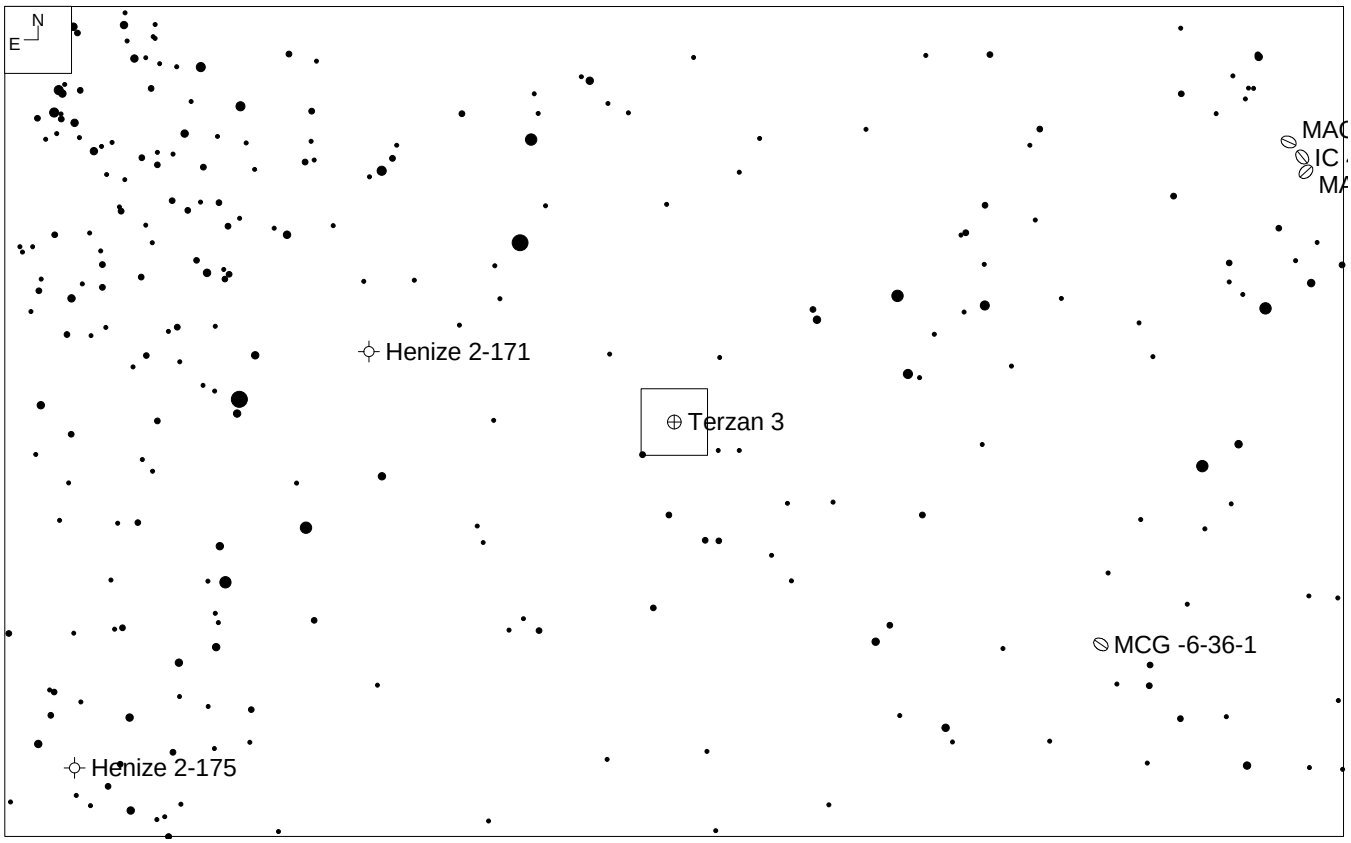


Terzan 4



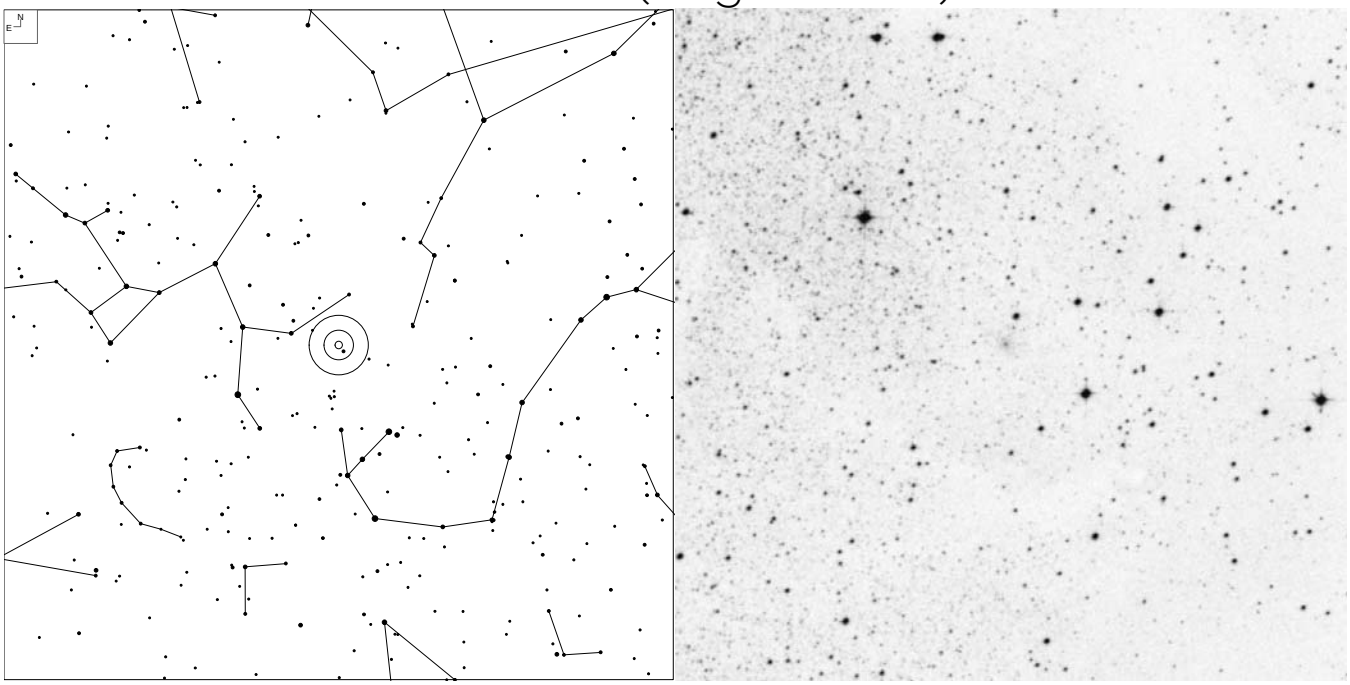
Terzan 3 (Scorpius)

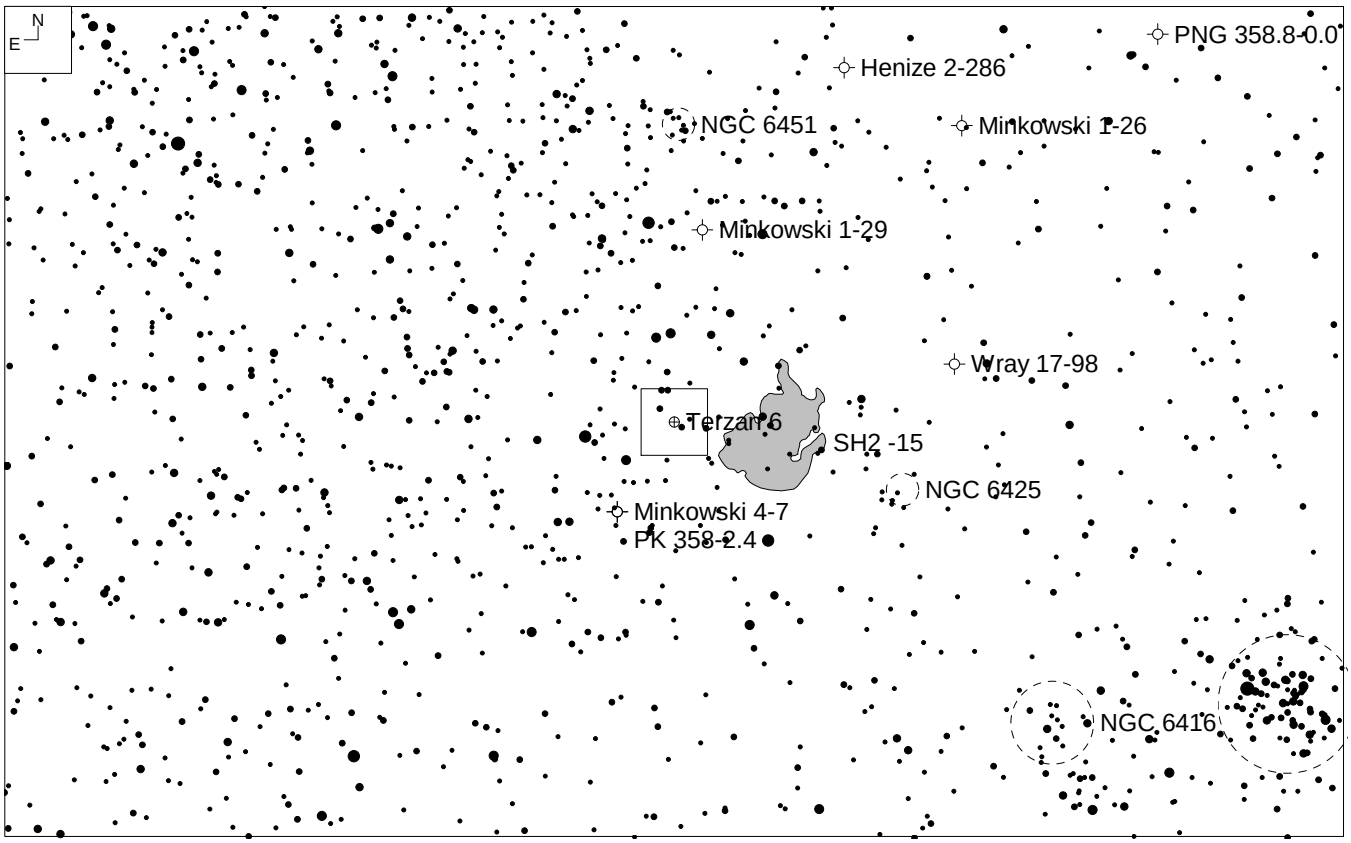




RA	Dec	V_{mag}	HB_{Mag}	$Bt*_{Mag}$	SB	Size (')
16 28 40.1	-35 21 13	12	17.3	15	-	-

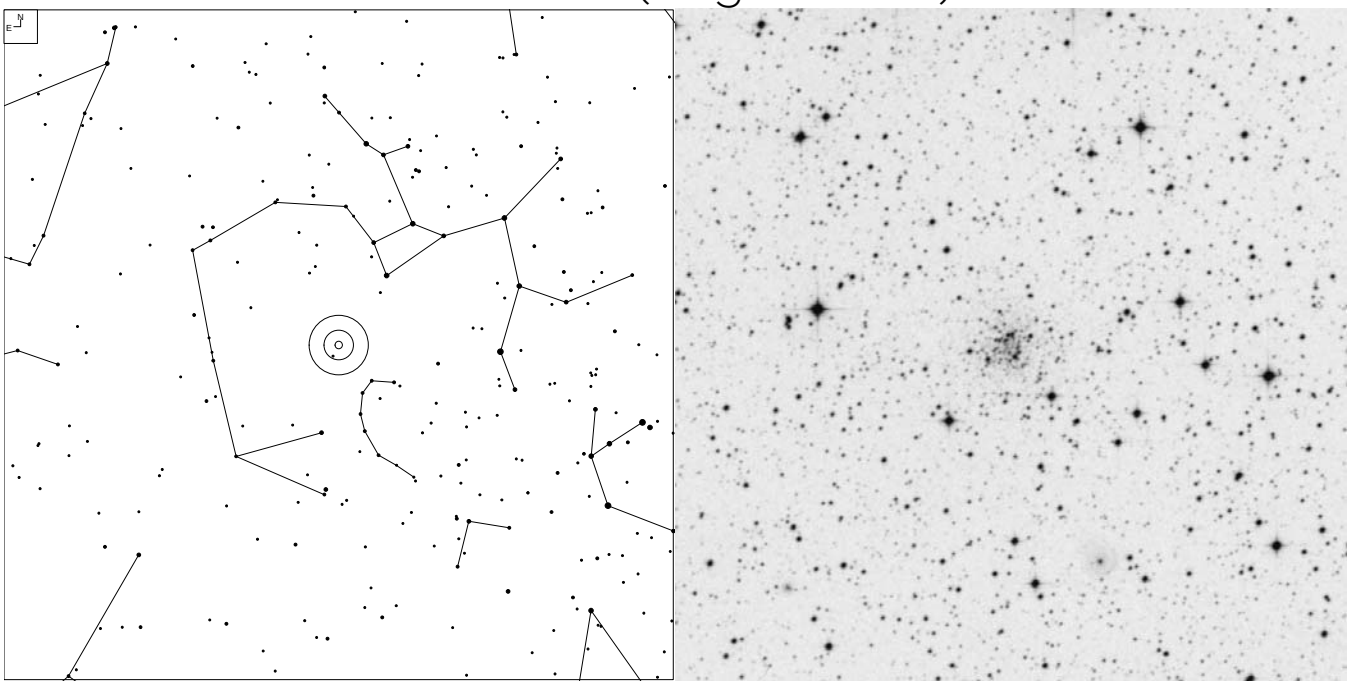
Terzan 6 (Sagittarius)

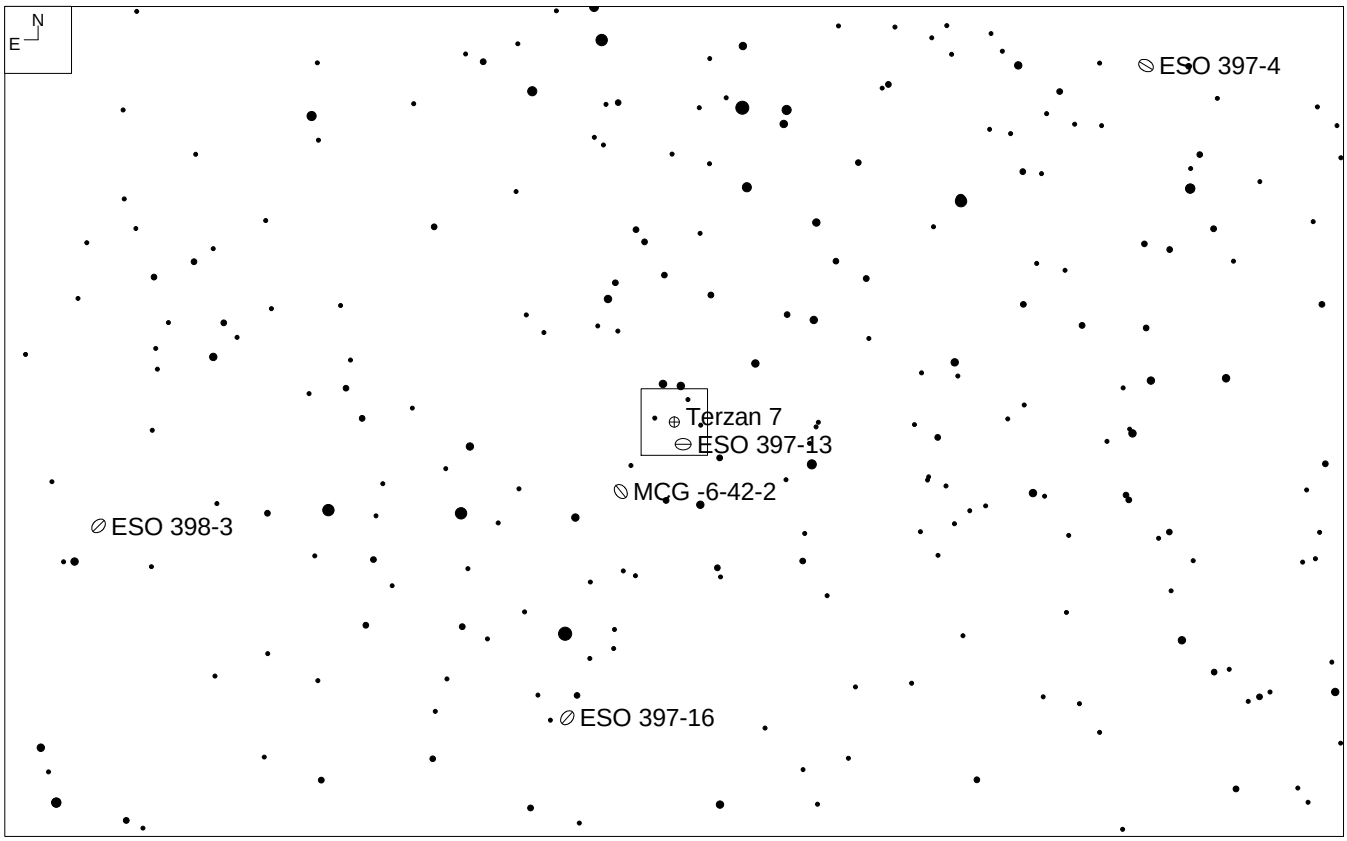




RA	Dec	V_{mag}	HB_{Mag}	Bt^*_{Mag}	SB	Size (')
17 50 46.4	-31 16 31	13.9	22.3	20.5	14.6	1.4

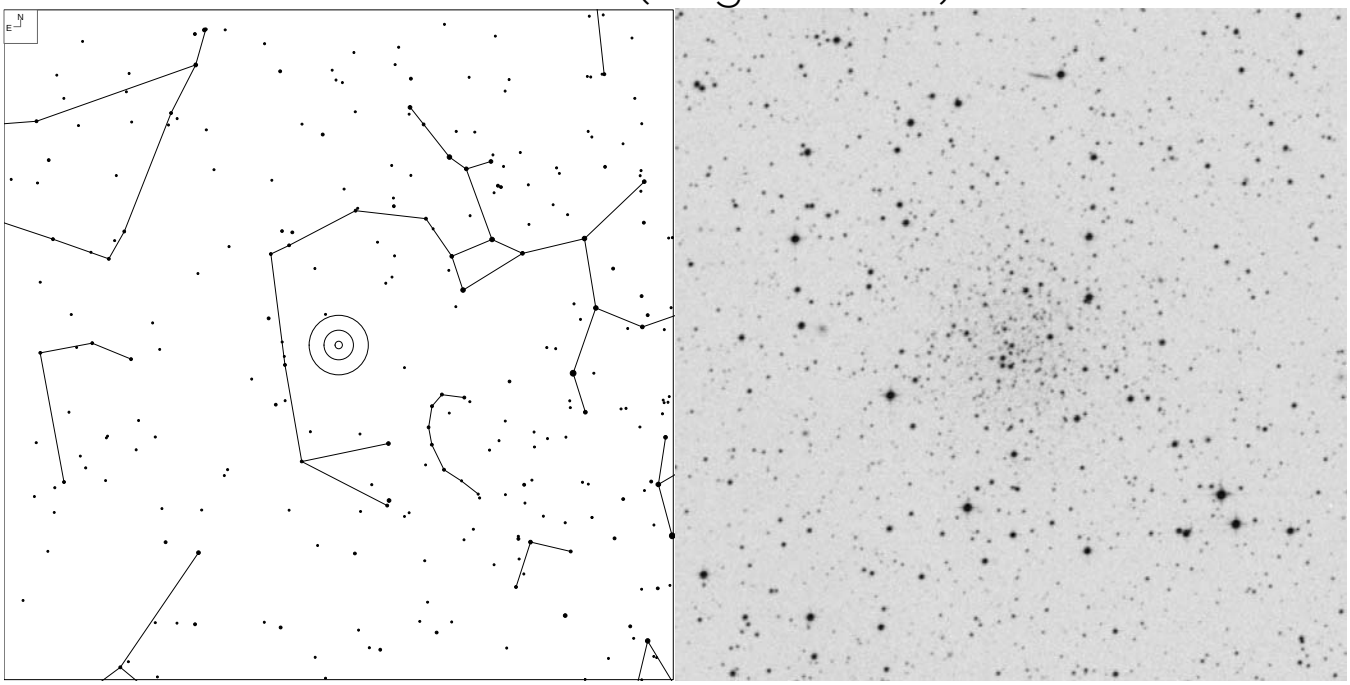
Terzan 7 (Sagittarius)

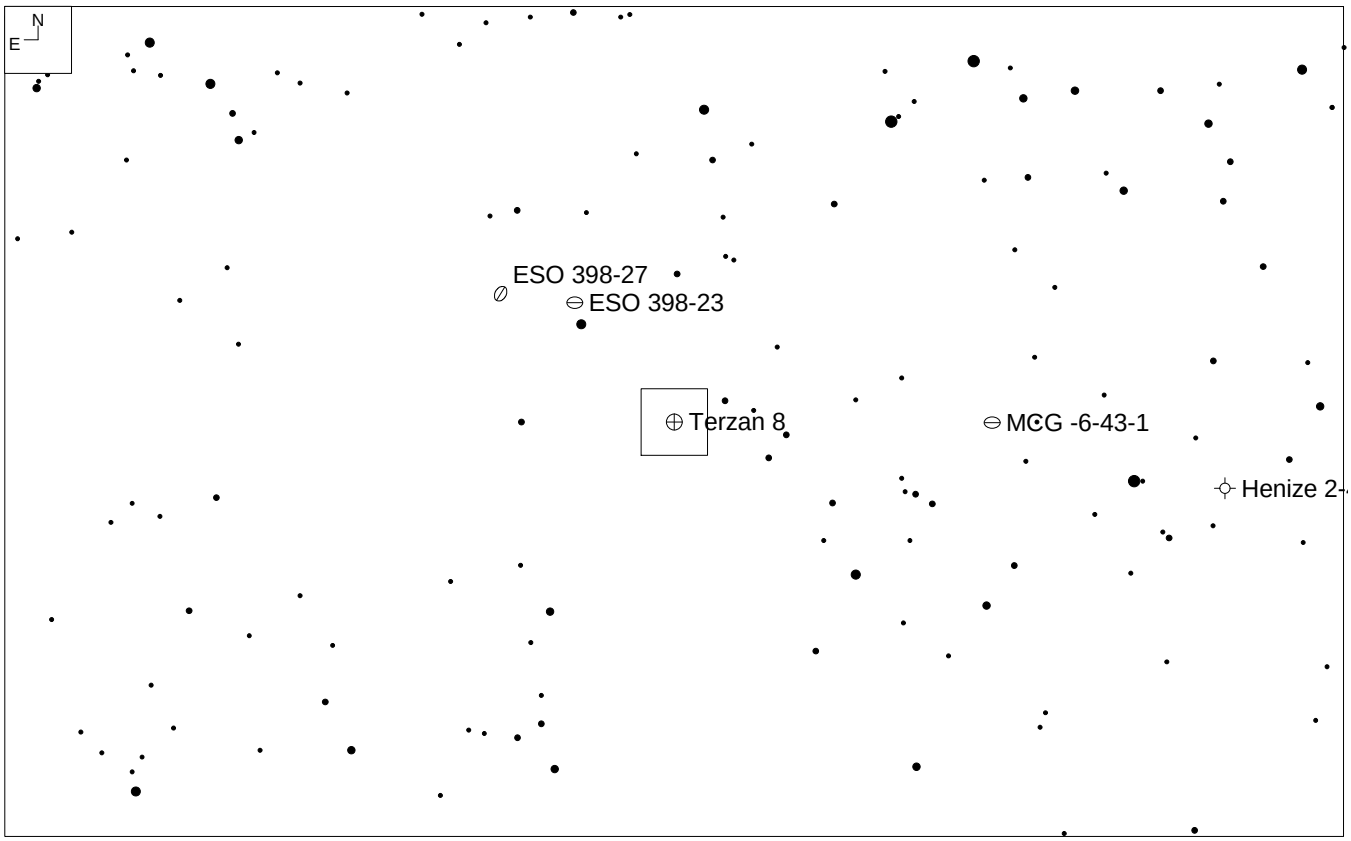




RA	Dec	V_{mag}	HB_{Mag}	$Bt*_{Mag}$	SB	Size (‘)
19 17 43.7	-34 39 27	12	17.9	15	-	-

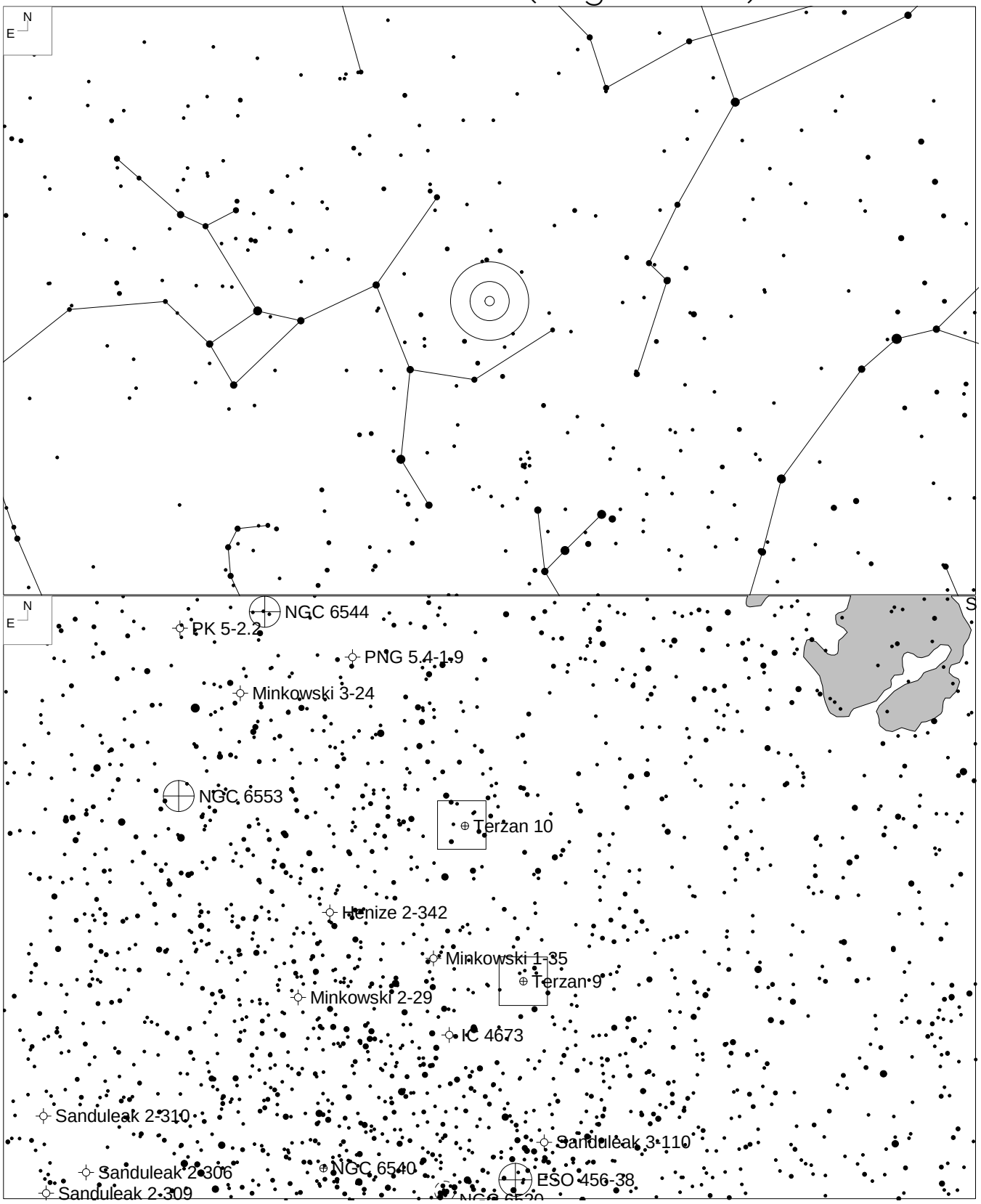
Terzan 8 (Sagittarius)





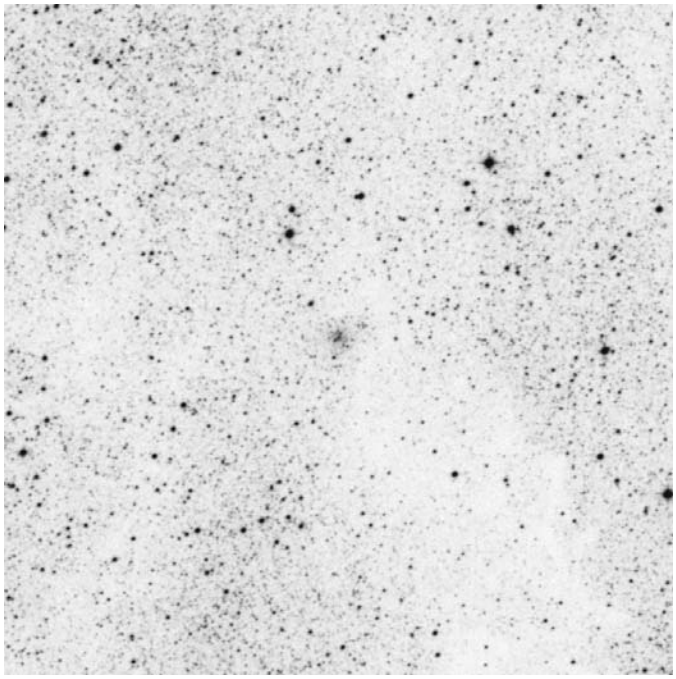
RA	Dec	V_{mag}	HB_{Mag}	$Bt*_{Mag}$	SB	Size (‘)
19 41 45.0	-34 00 01	12.4	18	15	-	-

Terzan 9 and 10 (Sagittarius)

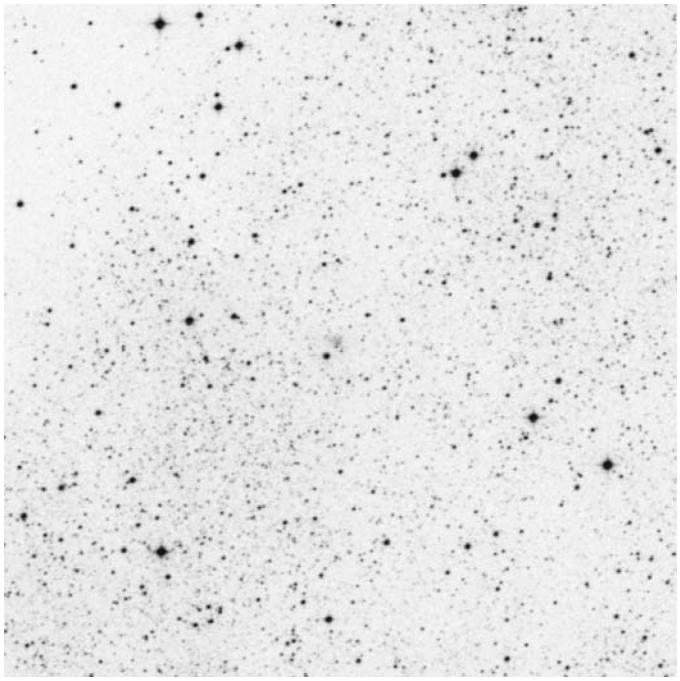


	RA	Dec	V_{mag}	HB_{Mag}	Bt^*_{Mag}	SB	Size (')
Terzan 9	18 01 38.8	-26 50 23	16	20.3	17.2	12.5	0.2
Terzan 10	18 02 57.0	-26 04 00	14.9	21.9	19.7	15.8	1.5

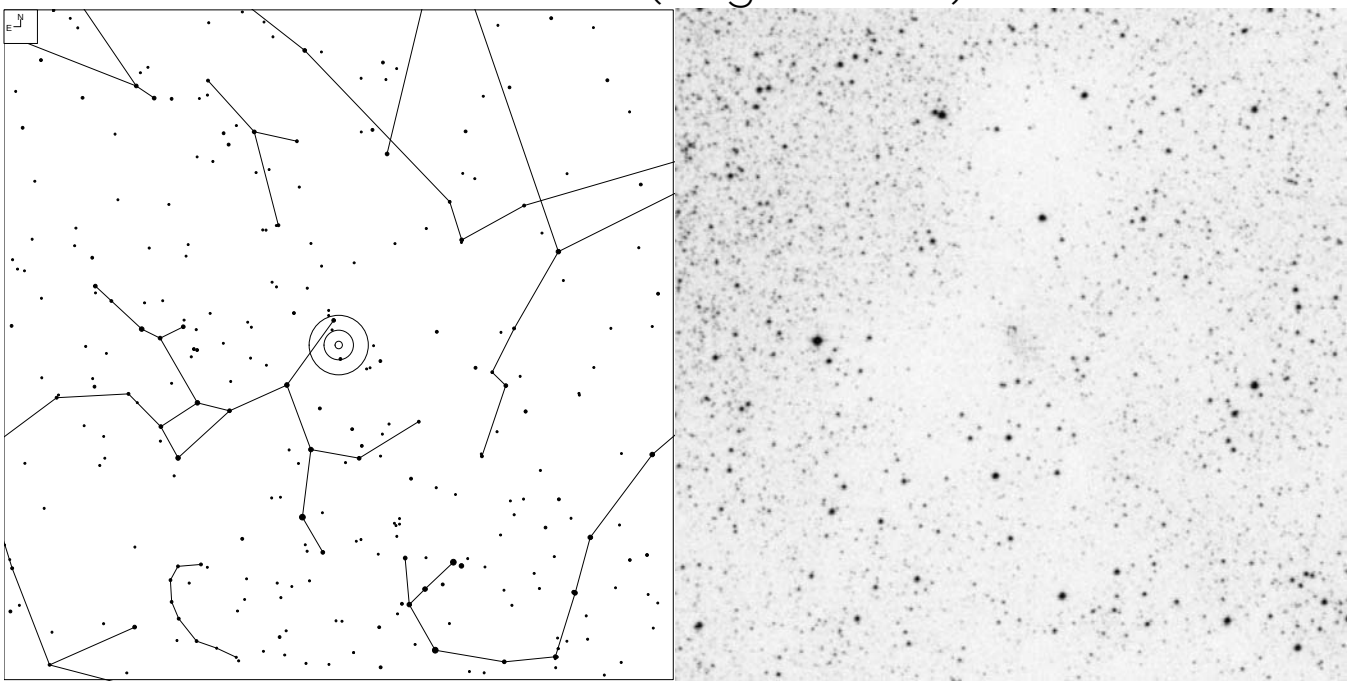
Terzan 9

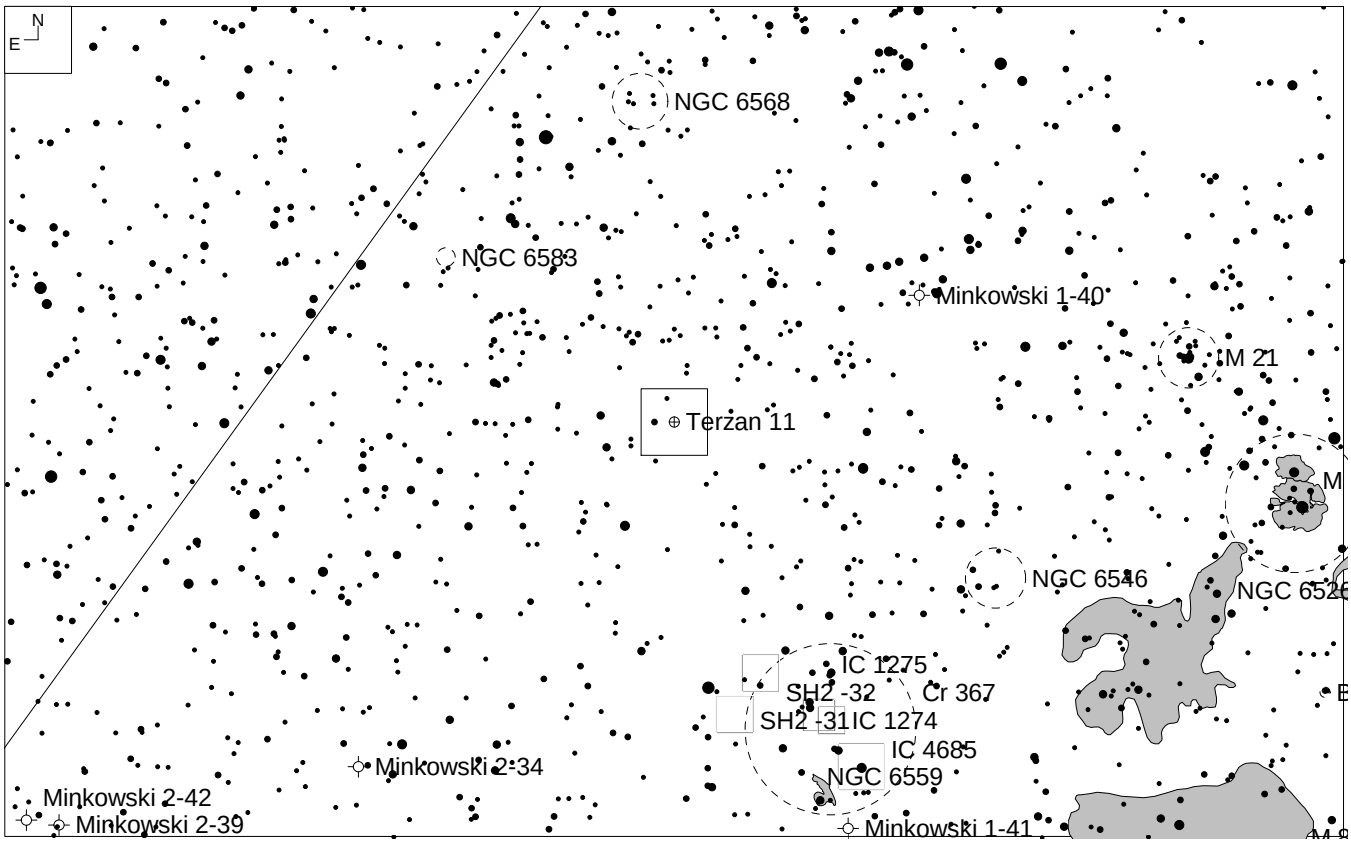


Terzan 10



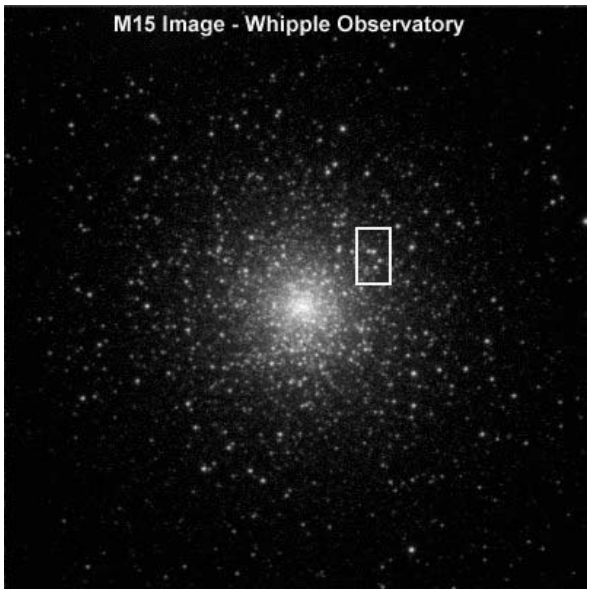
Terzan 11 (Sagittarius)





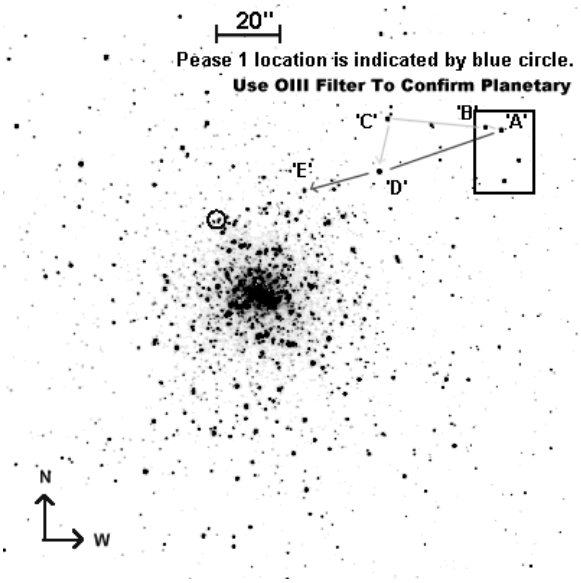
RA	Dec	V_{mag}	HB_{Mag}	Bt^*_{Mag}	SB	Size (')
18 12 15.8	-22 44 31	16.4	20.5	18.5	-	-

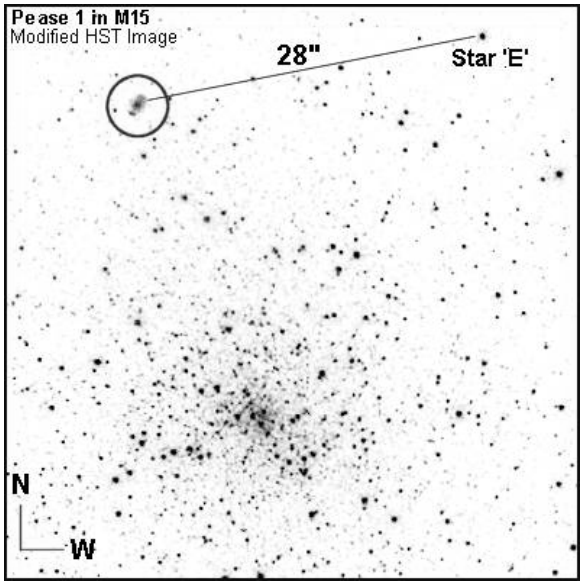
Pease 1 (M15)



Find the 4 trapezium stars inside the 'box', then proceed to the next finder chart. These stars are only the start of a grand star-hoppin' adventure. In these images, North is up, and West is to the right.

Use the 4 trapezium stars in the 'box' as starters; first you want to locate star 'D by star-hopping from 'A' to 'B' to 'C' and then to 'D' *(green lines)*. Stars A, B, C, and D have similar magnitudes, although B and C are slightly fainter. Once you have located 'D', then draw an imaginary line between stars 'A' and 'D'. Continue this line through to where star 'E' is (about 20 arc seconds SE). When you have located star 'E', then use Finder Chart 3 which is a modified Hubble image.





From star 'E' continue the line SE not quite half an arc minute until you can observe a small clump of stars. *(I know, everything in the field is a clump of stars!)* Notice that of the three stars circled, the PN is the object just slightly to the northwest.
PNe Mag.= 14.9, Surface Brightness = 6, and the angular size of the PN = 1" (arc second).

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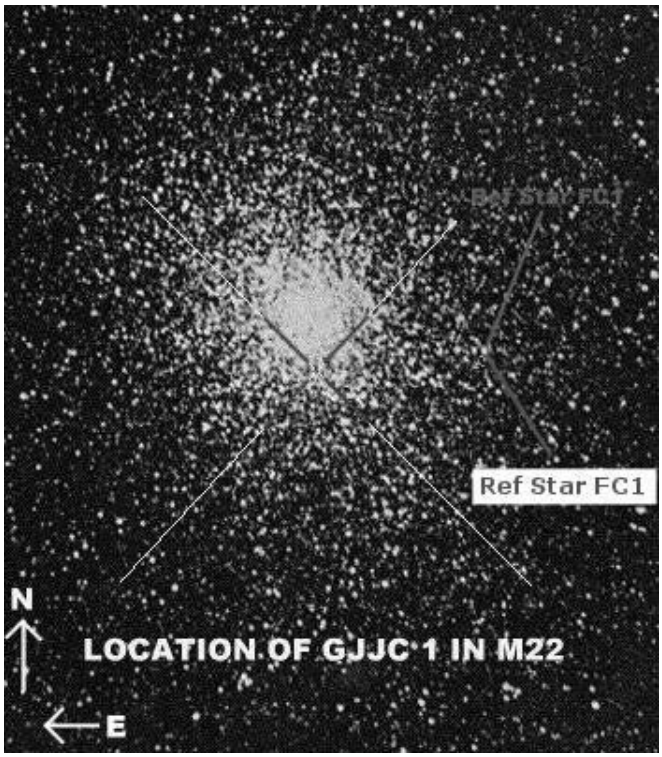
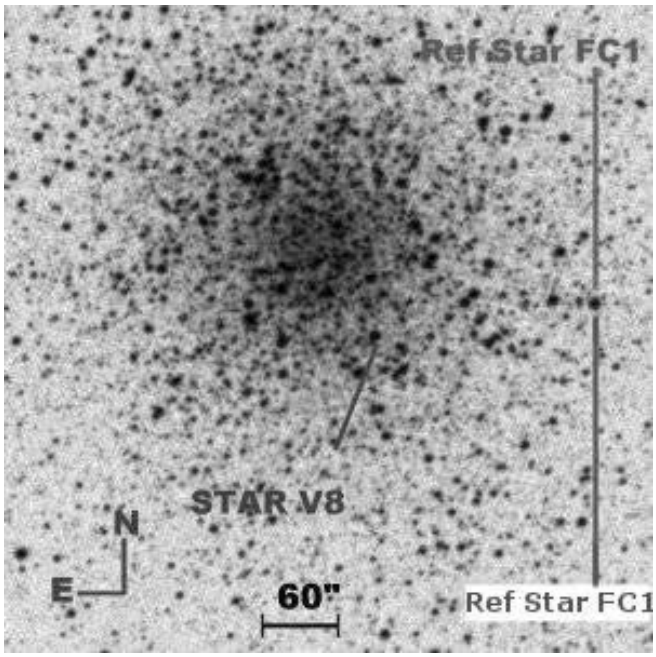
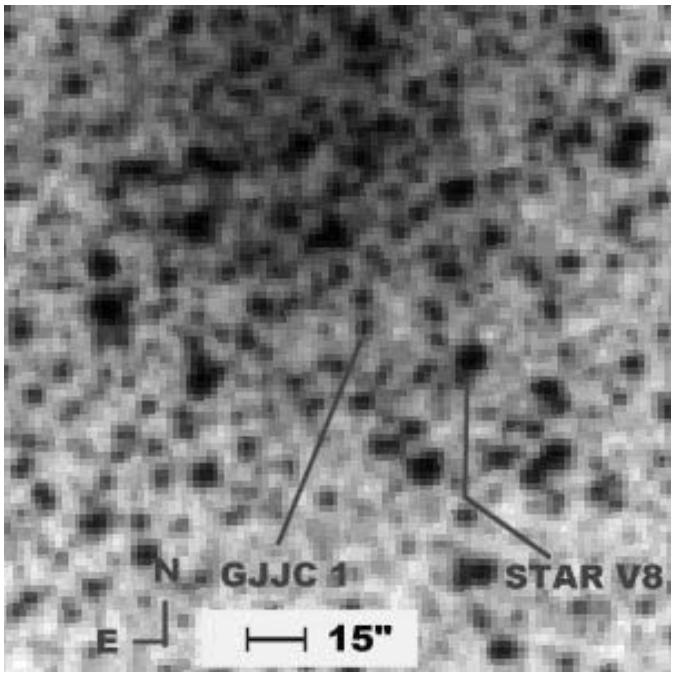
GJJC1 in M22 (Sagittarius)

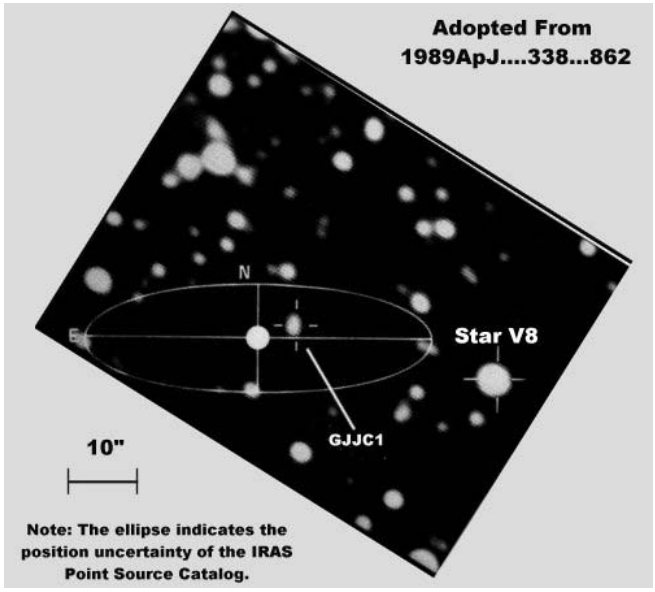


This image shows the overall view of M22 and in general the location of GJJC1. The Reference Star FC1 (arbitrarily chosen) can be a starting point for star hopping to the area of the PNe, but it is also used as a reference on the next image so that we don't lose our bearings. All of the images have North at the top and East to the left.



The reference star V8 on **Image2** (right) is a check point for **Image3** (bottom left), and a rough position is also shown for GJJC1. Now proceed to **Image4** (bottom right) for the final location.





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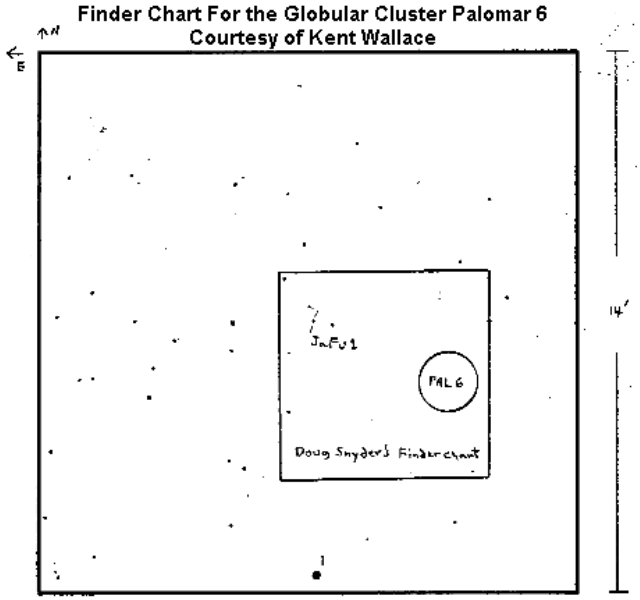
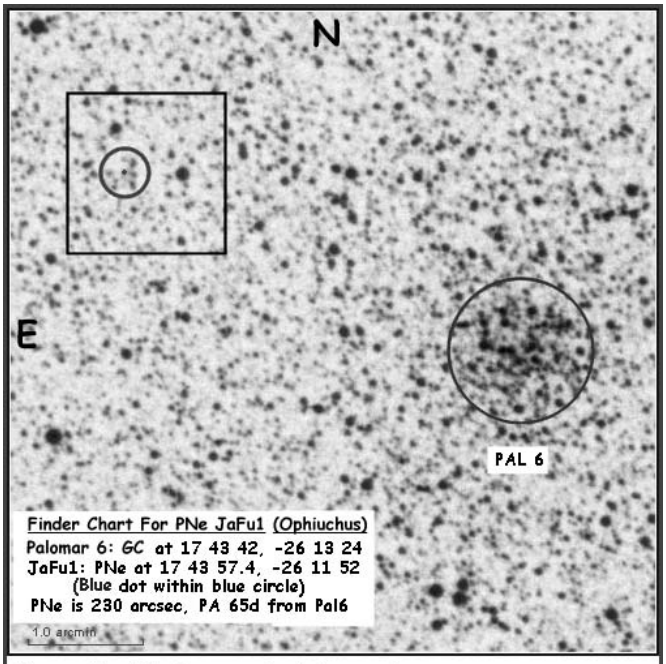
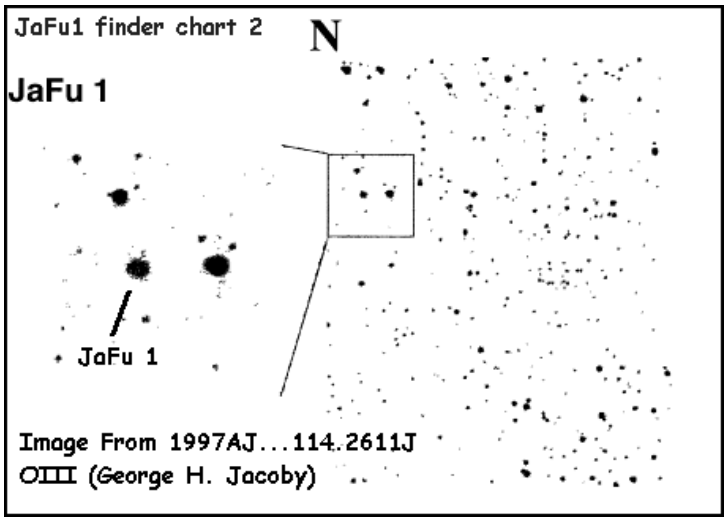
JaFu1 in Palomar 6 (Ophuichus)



Star 1 is the 8th mag. star SE of PAL 6 shown in Sky Atlas 2000, chart 22 next to the Sagittarius / Ophiuchus border; shown in Uranometria 2000.0, chart 338 and shown in Millennium Atlas Chart 1393. Coordinates for Star 1 are RA 17h 43.9m, Dec -26d 18m (2000.0)



The outlined black rectangle indicates the area shown in finder chart 2 below.



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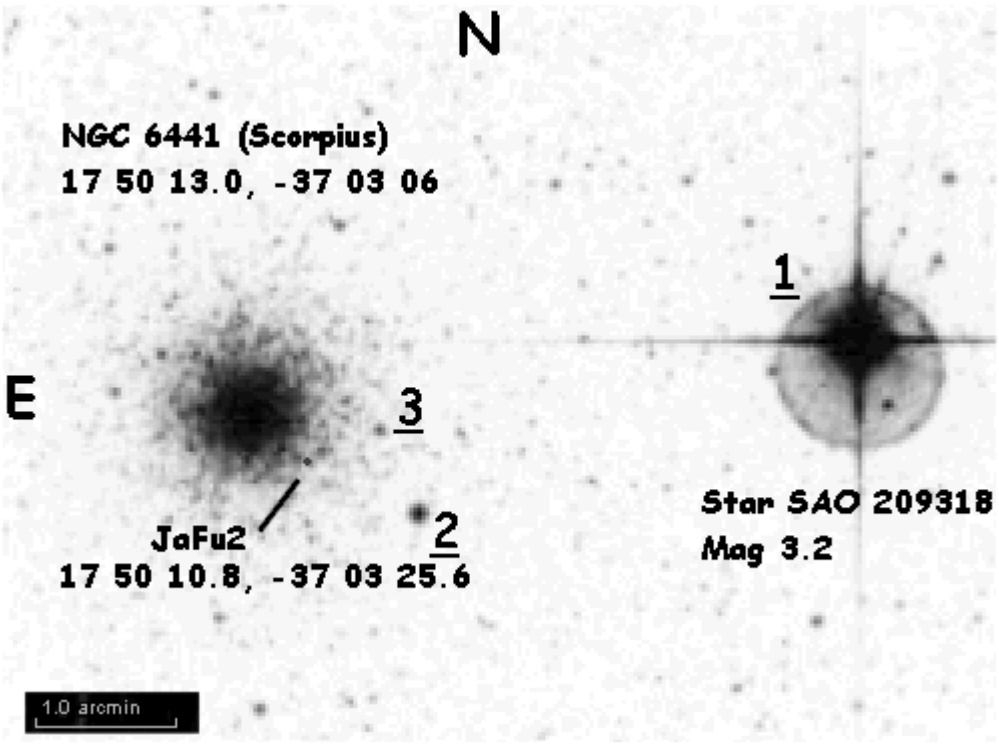
JaFu2 in NGC 6441 (Scorpius)



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Sorted by Page Number

Page	Name	Const	V_{mag}	HB_{Mag}	$Bt*_{Mag}$	SB	Size (')
6	NGC 288	Scl	8.1	15.3	12.6	13.7	13
7	Eridanus Cluster	Eri	14.7	20.4	17.6	-	-
8	NGC 1851	Col	7.1	16.1	13.2	12.5	12
9	M79 (NGC 1904)	Lep	7.7	16.2	13.1	12.6	9.6
10	NGC 2298	Pup	9.3	16.2	13.4	12.8	5
11	NGC 2419	Lyn	10.3	20.2	17.3	13.6	4.6
12	Pyxis Cluster	Pyx	12.9	18.7	15.2	15.9	4
13	NGC 3201	Vel	6.9	14.8	11.7	13.4	20
14	NGC 4147	Com	10.4	16.9	14.5	13.6	4.4
15	M53 (NGC 5024)	Com	7.7	16.9	13.8	13.3	13
15	NGC 5053	Com	9	16.7	13.8	14	10
16	M3 (NGC 5272)	Boo	6.3	15.6	12.7	12.6	18
17	NGC 5466	Boo	9.2	16.6	13.8	14	9
18	NGC 5634	Vir	9.5	17.8	-	13.2	5.5
19	NGC 6229	Her	9.4	18	15.5	12.7	4.5
20	M13 (NGC 6205)	Her	5.8	15	11.9	12.3	20
21	M92 (NGC 6341)	Her	6.5	15.2	12.1	12.2	14
22	AM-4	Hyd	15.9	21.6	20.5	18.3	3
23	M68 (NGC 4590)	Hyd	7.3	15.6	12.6	12.5	11
24	NGC 5694	Hyd	10.2	18.5	15.5	13.4	4.3
25	NGC 5986	Lup	7.6	16.5	13.2	12.5	9.6
26	NGC 5824	Lup	9.1	18.5	15.5	13.4	7.4
27	NGC 5897	Lib	8.4	16.3	13.3.	13.6	11
28	M5 (NGC 5904)	Oph	5.7	15	12.2	12.5	23
28	Palomar 5	Oph	11.8	17.4	15.5	16.3	8
29	M107 (NGC 6171)	Oph	7.8	15.6	13	13.4	13
30	M10 (NGC 6254)	Oph	6.6	15.1	12	13.1	20
30	M12 (NGC 6218)	Oph	6.1	14.7	12	12.1	16
31	NGC 6235	Oph	8.9	16.7	14	12.4	5
31	NGC 6284	Oph	8.9	16.6	-	12.9	6.2
31	NGC 6287	Oph	9.3	17.1	14.5	12.7	4.8
31	NGC 6325	Oph	10.2	17.3	14.7	13.3	4.1
32	IC 1257	Oph	13.1	19.8	17	14.3	1.7
32	M14 (NGC 6402)	Oph	7.6	17.2	14	12.8	11
32	NGC 6366	Oph	9.5	15.7	13.6	15.1	13
33	Haute Provence 1	Oph	12.5	18.6	16	12.9	1.2
34	NGC 6426	Oph	10.9	18.1	15.2	14	4.2
35	NGC 6517	Oph	10.1	18	16	13.1	4
35	NGC 6539	Oph	8.9	18.3	15.9	13.4	7.9

Sorted by Page Number

Page	Name	Const	V_{mag}	HB_{Mag}	$Bt*_{Mag}$	SB	Size (')
35	Palomar 7	Oph	10.3	17.7	15.7	14.8	8
36	[PWM78] 2	Oph	-	-	-	-	2
37	NGC 6535	Oph	9.3	15.8	12.8	12	3.4
38	M19 (NGC 6273)	Oph	6.8	17	14	13	17
38	M62 (NGC 6266)	Oph	6.4	16.3	13.2	12.3	15
38	NGC 6293	Oph	8.3	16.5	14.3	12.9	8.2
38	NGC 6304	Oph	8.3	16.2	14.5	12.8	8
38	NGC 6316	Oph	8.1	17.8	15	11.8	5.4
38	NGC 6355	Oph	8.6	17.2	-	11.7	4.2
39	M9 (NGC 6333)	Oph	7.8	16.2	13.5	13.2	12
39	NGC 6342	Oph	9.5	16.9	15	12.7	4.4
39	NGC 6356	Oph	8.2	17.7	15.1	13.2	10
40	NGC 6401	Oph	7.4	18	15.5	8.7	1.8
40	NGC 6440	Sgr	9.3	18.7	16.7	12.5	4.4
41	M4 (NGC 6121)	Sco	5.4	13.4	10.8	13.2	36
41	M80 (NGC 6093)	Sco	7.3	16.2	12.5	12.3	10
41	NGC 6144	Sco	9	16.5	13.4	13.3	7.4
42	1636-283 (ESO 452-SCII)	Sco	12	16.6	15.3	12.4	1.2
43	NGC 6139	Sco	9.1	17.9	15	13.7	8.2
44	NGC 6256	Sco	11.3	18.2	15.3	14.4	4.1
45	Lillar 1	Sco	15.8	24.4	20.5	13.2	0.3
46	NGC 6388	Sco	6.8	17.2	14.8	11.9	10.4
46	NGC 6496	CrA	8.6	16.5	14.3	12.3	5.6
46	NGC 6541	CrA	6.3	15.3	12.1	12.2	15
47	NGC 6380	Sco	11.5	19.5	17	14.3	3.6
47	Tonantzintlia 2 (Pismis 26)	Sco	12.2	18.2	-	-	-
48	Djorgovski 1	Sco	13.6	20.8	-	13.1	0.8
49	NGC 6441	Sco	7.2	17.5	15.4	12.1	9.6
49	NGC 6453	Sco	10.2	17.5	14.3	14.6	7.6
50	ESO 280-SC06	Tel	-	17.4	14	-	1.4
51	AL 3	Sgr	-	-	-	-	-
52	NGC 6522	Sgr	9.9	16.9	14.1	14.8	9.4
52	NGC 6528	Sgr	9.6	17.1	15.5	13.1	5
52	NGC 6558	Sgr	8.6	16.7	-	-	-
52	NGC 6569	Sgr	8.4	17.5	14.9	12.4	6.4
52	NGC 6624	Sgr	7.6	16.1	14	12.3	8.8
53	UKS 1	Sgr	17.3	25.5	22	18.8	2
54	2MASS-GC1	Sgr	-	-	-	-	3.3
54	2MASS-GC2	Sgr	-	-	-	-	1.9
55	NGC 6544	Sgr	7.5	14.9	12.8	12.3	9.2

Sorted by Page Number

Page	Name	Const	V_{mag}	HB_{Mag}	$Bt*_{Mag}$	SB	Size (')
55	NGC 6553	Sgr	8.3	16.9	15.3	13.1	9.2
56	ESO 456-SC38	Sgr	9.9	17.6	15.5	14.9	9.9
56	NGC 6540	Sgr	14.6	15.3	-	15.5	1.5
57	M22 (NGC 6656)	Sgr	5.2	14.2	10.7	12.7	32
57	M28 (NGC 6626)	Sgr	6.9	15.7	12	12.6	13.8
57	NGC 6638	Sgr	9.2	16.5	14.2	13.5	7.3
57	NGC 6642	Sgr	8.9	16.3	-	12.7	5.8
58	M54 (NGC 6715)	Sgr	7.7	18.2	15.2	13.1	12
58	M69 (NGC 6637)	Sgr	7.7	15.9	13.7	12.7	9.8
58	M70 (NGC 6681)	Sgr	7.8	15.6	13	12.3	8
58	NGC 6652	Sgr	8.5	16	13.3	12.4	6
59	NGC 6723	Sgr	6.8	15.5	12.8	12.4	13
60	Arp GC2	Sgr	13	18.2	15.5	14.8	2.3
60	M55 (NGC 6809)	Sgr	6.3	14.4	11.2	12.7	19
61	M75 (NGC 6864)	Sgr	8.6	17.5	14.6	12.8	6.8
62	M56 (NGC 6779)	Cyg	8.4	16.3	13.2	13.1	8.8
63	M71 (NGC 6838)	Sge	8.4	14.5	12.1	-	-
64	NGC 6749	Aql	12.4	19.7	16.5	15.4	4
64	NGC 6760	Aql	9	17.5	15.6	13.8	9
65	NGC 6712	Scu	8.1	16.3	13.3	13.1	9.8
66	NGC 6934	Del	8.9	17.1	13.8	13.2	7.1
67	NGC 7006	Del	10.6	18.8	15.6	13.4	3.6
68	M72 (NGC 6981)	Aqr	9.2	16.9	14.2	13.3	6.6
69	M30 (NGC 7099)	Cap	6.9	15.1	12.1	12.3	12
70	M2 (NGC 7089)	Aqr	6.6	16.1	13.1	12.6	16
71	NGC 7492	Aqr	11.2	17.6	15.5	14.3	4.2
72	M15 (NGC 7078)	Peg	6.3	15.9	12.6	12.6	18
73	G1 (M31 GC)	And	13.7	-	-	12.2	0.5
74	G78, Vitesnik (M31 GC)	And	14.2	-	-	12.2	0.4
75	Palomar 1	Cep	13.6	16.8	16.3	15.8	2.8
76	Palomar 2	Aur	13	21.7	18.8	14.7	2.2
77	Palomar 3	Sex	13.9	20.5	18	14.9	1.6
78	Palomar 4	UMa	14.2	20.8	18	14.8	1.3
79	Palomar 6	Oph	11.6	19.1	-	12	1.2
79	Terzan 5	Sgr	13.9	22.5	20.5	15.8	2.4
81	Palomar 8	Sgr	10.9	17.3	15.4	14.5	5.2
82	Palomar 9 (NGC 6717)	Sgr	8.4	15.6	14	12.1	5.4
83	Palomar 10	Sag	13.2	19.4	18	16.2	4
84	Palomar 11	Aql	9.8	17.4	15.5	14.8	10
85	Palomar 12	Cap	11.7	17.1	14.6	14	2.9

Sorted by Page Number

Page	Name	Const	V_{mag}	HB_{Mag}	$Bt*_{Mag}$	SB	Size (')
86	Palomar 13	Peg	13.8	17.7	17	13	0.7
87	Palomar 14	Her	14.7	20	17.6	16.7	2.5
88	Palomar 15	Oph	14.2	19.9	17.1	-	-
89	Terzan 1	Sco	15.9	21.4	18.5	-	-
89	Terzan 2	Sco	14.3	19.8	-	13.2	0.6
89	Terzan 4	Sco	16	21.6	-	-	-
91	Terzan 3	Sco	12	17.3	15	-	-
92	Terzan 6	Sgr	13.9	22.3	20.5	14.6	1.4
93	Terzan 7	Sgr	12	17.9	15	-	-
94	Terzan 8	Sgr	12.4	18	15	-	-
95	Terzan 9	Sgr	16	20.3	17.2	12.5	0.2
95	Terzan 10	Sgr	14.9	21.9	19.7	15.8	1.5
97	Terzan 11	Sgr	16.4	20.5	18.5	-	-
98	Pease 1 in M-15	Peg	-	-	-	-	
99	GJJC1 in M22	Sgr	-	-	-	-	-
100	JaFu1 in Palomar 6	Oph	-	-	-	-	-
101	JaFu2 in NGC 6441	Sco	-	-	-	-	-

Sorted by Object Name

Page	Name	Const	V_{mag}	HB_{Mag}	Bt^*_{Mag}	SB	Size (')
36	[PWM78] 2	Oph	-	-	-	-	2
42	1636-283 (ESO 452-SCII)	Sco	12	16.6	15.3	12.4	1.2
54	2MASS-GC1	Sgr	-	-	-	-	3.3
54	2MASS-GC2	Sgr	-	-	-	-	1.9
51	AL 3	Sgr	-	-	-	-	-
22	AM-4	Hyd	15.9	21.6	20.5	18.3	3
60	Arp GC2	Sgr	13	18.2	15.5	14.8	2.3
48	Djorgovski 1	Sco	13.6	20.8	-	13.1	0.8
7	Eridanus Cluster	Eri	14.7	20.4	17.6	-	-
50	ESO 280-SC06	Tel	-	17.4	14	-	1.4
56	ESO 456-SC38	Sgr	9.9	17.6	15.5	14.9	9.9
73	G1 (M31 GC)	And	13.7	-	-	12.2	0.5
74	G78, Vitesnik (M31 GC)	And	14.2	-	-	12.2	0.4
99	GJJC1 in M22	Sgr	-	-	-	-	-
33	Haute Provence 1	Oph	12.5	18.6	16	12.9	1.2
32	IC 1257	Oph	13.1	19.8	17	14.3	1.7
100	JaFu1 in Palomar 6	Oph	-	-	-	-	-
101	JaFu2 in NGC 6441	Sco	-	-	-	-	-
45	Lillar 1	Sco	15.8	24.4	20.5	13.2	0.3
70	M2 (NGC 7089)	Aqr	6.6	16.1	13.1	12.6	16
16	M3 (NGC 5272)	Boo	6.3	15.6	12.7	12.6	18
41	M4 (NGC 6121)	Sco	5.4	13.4	10.8	13.2	36
28	M5 (NGC 5904)	Oph	5.7	15	12.2	12.5	23
39	M9 (NGC 6333)	Oph	7.8	16.2	13.5	13.2	12
30	M10 (NGC 6254)	Oph	6.6	15.1	12	13.1	20
30	M12 (NGC 6218)	Oph	6.1	14.7	12	12.1	16
20	M13 (NGC 6205)	Her	5.8	15	11.9	12.3	20
32	M14 (NGC 6402)	Oph	7.6	17.2	14	12.8	11
72	M15 (NGC 7078)	Peg	6.3	15.9	12.6	12.6	18
38	M19 (NGC 6273)	Oph	6.8	17	14	13	17
57	M22 (NGC 6656)	Sgr	5.2	14.2	10.7	12.7	32
57	M28 (NGC 6626)	Sgr	6.9	15.7	12	12.6	13.8
69	M30 (NGC 7099)	Cap	6.9	15.1	12.1	12.3	12
15	M53 (NGC 5024)	Com	7.7	16.9	13.8	13.3	13
58	M54 (NGC 6715)	Sgr	7.7	18.2	15.2	13.1	12
60	M55 (NGC 6809)	Sgr	6.3	14.4	11.2	12.7	19
62	M56 (NGC 6779)	Cyg	8.4	16.3	13.2	13.1	8.8
38	M62 (NGC 6266)	Oph	6.4	16.3	13.2	12.3	15
23	M68 (NGC 4590)	Hyd	7.3	15.6	12.6	12.5	11

Sorted by Object Name

Page	Name	Const	V_{mag}	HB_{Mag}	$Bt*_{Mag}$	SB	Size (')
58	M69 (NGC 6637)	Sgr	7.7	15.9	13.7	12.7	9.8
58	M70 (NGC 6681)	Sgr	7.8	15.6	13	12.3	8
63	M71 (NGC 6838)	Sge	8.4	14.5	12.1	-	-
68	M72 (NGC 6981)	Aqr	9.2	16.9	14.2	13.3	6.6
61	M75 (NGC 6864)	Sgr	8.6	17.5	14.6	12.8	6.8
9	M79 (NGC 1904)	Lep	7.7	16.2	13.1	12.6	9.6
41	M80 (NGC 6093)	Sco	7.3	16.2	12.5	12.3	10
21	M92 (NGC 6341)	Her	6.5	15.2	12.1	12.2	14
29	M107 (NGC 6171)	Oph	7.8	15.6	13	13.4	13
6	NGC 288	Scl	8.1	15.3	12.6	13.7	13
8	NGC 1851	Col	7.1	16.1	13.2	12.5	12
10	NGC 2298	Pup	9.3	16.2	13.4	12.8	5
11	NGC 2419	Lyn	10.3	20.2	17.3	13.6	4.6
13	NGC 3201	Vel	6.9	14.8	11.7	13.4	20
14	NGC 4147	Com	10.4	16.9	14.5	13.6	4.4
15	NGC 5053	Com	9	16.7	13.8	14	10
17	NGC 5466	Boo	9.2	16.6	13.8	14	9
18	NGC 5634	Vir	9.5	17.8	-	13.2	5.5
24	NGC 5694	Hyd	10.2	18.5	15.5	13.4	4.3
26	NGC 5824	Lup	9.1	18.5	15.5	13.4	7.4
27	NGC 5897	Lib	8.4	16.3	13.3.	13.6	11
25	NGC 5986	Lup	7.6	16.5	13.2	12.5	9.6
43	NGC 6139	Sco	9.1	17.9	15	13.7	8.2
41	NGC 6144	Sco	9	16.5	13.4	13.3	7.4
19	NGC 6229	Her	9.4	18	15.5	12.7	4.5
31	NGC 6235	Oph	8.9	16.7	14	12.4	5
44	NGC 6256	Sco	11.3	18.2	15.3	14.4	4.1
31	NGC 6284	Oph	8.9	16.6	-	12.9	6.2
31	NGC 6287	Oph	9.3	17.1	14.5	12.7	4.8
38	NGC 6293	Oph	8.3	16.5	14.3	12.9	8.2
38	NGC 6304	Oph	8.3	16.2	14.5	12.8	8
38	NGC 6316	Oph	8.1	17.8	15	11.8	5.4
31	NGC 6325	Oph	10.2	17.3	14.7	13.3	4.1
39	NGC 6342	Oph	9.5	16.9	15	12.7	4.4
38	NGC 6355	Oph	8.6	17.2	-	11.7	4.2
39	NGC 6356	Oph	8.2	17.7	15.1	13.2	10
32	NGC 6366	Oph	9.5	15.7	13.6	15.1	13
47	NGC 6380	Sco	11.5	19.5	17	14.3	3.6
46	NGC 6388	Sco	6.8	17.2	14.8	11.9	10.4
40	NGC 6401	Oph	7.4	18	15.5	8.7	1.8

Sorted by Object Name

Page	Name	Const	V_{mag}	HB_{Mag}	$Bt*_{Mag}$	SB	Size (')
34	NGC 6426	Oph	10.9	18.1	15.2	14	4.2
40	NGC 6440	Sgr	9.3	18.7	16.7	12.5	4.4
49	NGC 6441	Sco	7.2	17.5	15.4	12.1	9.6
49	NGC 6453	Sco	10.2	17.5	14.3	14.6	7.6
46	NGC 6496	CrA	8.6	16.5	14.3	12.3	5.6
35	NGC 6517	Oph	10.1	18	16	13.1	4
52	NGC 6522	Sgr	9.9	16.9	14.1	14.8	9.4
52	NGC 6528	Sgr	9.6	17.1	15.5	13.1	5
37	NGC 6535	Oph	9.3	15.8	12.8	12	3.4
35	NGC 6539	Oph	8.9	18.3	15.9	13.4	7.9
56	NGC 6540	Sgr	14.6	15.3	-	15.5	1.5
46	NGC 6541	CrA	6.3	15.3	12.1	12.2	15
55	NGC 6544	Sgr	7.5	14.9	12.8	12.3	9.2
55	NGC 6553	Sgr	8.3	16.9	15.3	13.1	9.2
52	NGC 6558	Sgr	8.6	16.7	-	-	-
52	NGC 6569	Sgr	8.4	17.5	14.9	12.4	6.4
52	NGC 6624	Sgr	7.6	16.1	14	12.3	8.8
57	NGC 6638	Sgr	9.2	16.5	14.2	13.5	7.3
57	NGC 6642	Sgr	8.9	16.3	-	12.7	5.8
58	NGC 6652	Sgr	8.5	16	13.3	12.4	6
65	NGC 6712	Scu	8.1	16.3	13.3	13.1	9.8
59	NGC 6723	Sgr	6.8	15.5	12.8	12.4	13
64	NGC 6749	Aql	12.4	19.7	16.5	15.4	4
64	NGC 6760	Aql	9	17.5	15.6	13.8	9
66	NGC 6934	Del	8.9	17.1	13.8	13.2	7.1
67	NGC 7006	Del	10.6	18.8	15.6	13.4	3.6
71	NGC 7492	Aqr	11.2	17.6	15.5	14.3	4.2
75	Palomar 1	Cep	13.6	16.8	16.3	15.8	2.8
76	Palomar 2	Aur	13	21.7	18.8	14.7	2.2
77	Palomar 3	Sex	13.9	20.5	18	14.9	1.6
78	Palomar 4	UMa	14.2	20.8	18	14.8	1.3
28	Palomar 5	Oph	11.8	17.4	15.5	16.3	8
79	Palomar 6	Oph	11.6	19.1	-	12	1.2
35	Palomar 7	Oph	10.3	17.7	15.7	14.8	8
81	Palomar 8	Sgr	10.9	17.3	15.4	14.5	5.2
82	Palomar 9 (NGC 6717)	Sgr	8.4	15.6	14	12.1	5.4
83	Palomar 10	Sag	13.2	19.4	18	16.2	4
84	Palomar 11	Aql	9.8	17.4	15.5	14.8	10
85	Palomar 12	Cap	11.7	17.1	14.6	14	2.9
86	Palomar 13	Peg	13.8	17.7	17	13	0.7

Sorted by Object Name

Page	Name	Const	V_{mag}	HB_{Mag}	$Bt*_{Mag}$	SB	Size (')
87	Palomar 14	Her	14.7	20	17.6	16.7	2.5
88	Palomar 15	Oph	14.2	19.9	17.1	-	-
98	Pease 1 in M-15	Peg	-	-	-	-	
12	Pyxis Cluster	Pyx	12.9	18.7	15.2	15.9	4
89	Terzan 1	Sco	15.9	21.4	18.5	-	-
89	Terzan 2	Sco	14.3	19.8	-	13.2	0.6
91	Terzan 3	Sco	12	17.3	15	-	-
89	Terzan 4	Sco	16	21.6	-	-	-
79	Terzan 5	Sgr	13.9	22.5	20.5	15.8	2.4
92	Terzan 6	Sgr	13.9	22.3	20.5	14.6	1.4
93	Terzan 7	Sgr	12	17.9	15	-	-
94	Terzan 8	Sgr	12.4	18	15	-	-
95	Terzan 9	Sgr	16	20.3	17.2	12.5	0.2
95	Terzan 10	Sgr	14.9	21.9	19.7	15.8	1.5
97	Terzan 11	Sgr	16.4	20.5	18.5	-	-
47	Tonantzintlia 2 (Pismis 26)	Sco	12.2	18.2	-	-	-
53	UKS 1	Sgr	17.3	25.5	22	18.8	2

Recommended reading

Archinal, Brent A. and Hynes, Steven J. 2003. *Star Clusters* Willmann-Bell, Richmond, VA

Burnham, Robert. 1978. *Burnham's Celestial Handbook, Vol. 1 to 3.* Dover Books, New York, N.Y.

Coe, Steven R. 2000. *Deep Sky Observing. The Astronomical Tourist.* Springer Publishing Company, N.Y.

Eicher, David J. 1992. *Galaxies and the Universe*. Kalmbach Publishing Co., W.I.

Houston, Walter Scott 1999; *Deep-Sky Wonders*, Sky Publishing Corp. Cambridge, MA

Kepple, George R. and Glen W. 1998. *The Night Sky Observer's Guide, Vol. 1 and 2.* Willmann-Bell, Richmond, VA.

Luginbuhl, Christian B. and Brian A. Skiff. 1989. *Observing Handbook and Catalogue of Deep-Sky Objects.* Cambridge University Press, N.Y.

Webb Society. 1982. *Webb Society Deep-Sky Observer's Handbook, Volume 3 Open and Globular Clusters* Enslow Publishers, Hillside, NJ

Meketa, Jim. Summer 1984. "The Ophiuchus Globulars" Deep Sky 2(2): 6-15.

Higgens, David. Spring 1988. "Pushing to the Limit: The Palomar Clusters from Your Backyard" Deep Sky 6(1): 16-21.

Witkoski, Michael. Autumn 1988. "Off-Season Globular Clusters" Deep Sky 6(3): 10-17.

Schur, Chris. Spring 1989. "A Survey of Bright Globular Clusters for Backyard Telescopes" Deep Sky 7(2): 10-17.

Bunge, Robert. Spring 1991. "Discover the Unknown Globulars of Sagittarius" Deep Sky 9(2): 24-29.

Jakiel, Richard. October 2001. "A Tour of Extragalactic Globulars" *Sky and Telescope*: 115-117.

Recommended Internet Sites

www.astronomy-mall.com/Adventures.In.Deep.Space/ - Great source of observing projects for all skill levels.

www.blackskies.org – Doug Snyder's Planetary Nebulae Observer's site. PNe in Globulars.

www.cloudynights.com

Sources of charts and images

Charts by *Megastar version 5* Willmann-Bell Richmond, VA

DSS images (Digital Sky Survey) http://archive.stsci.edu/dss/acknowledging.html