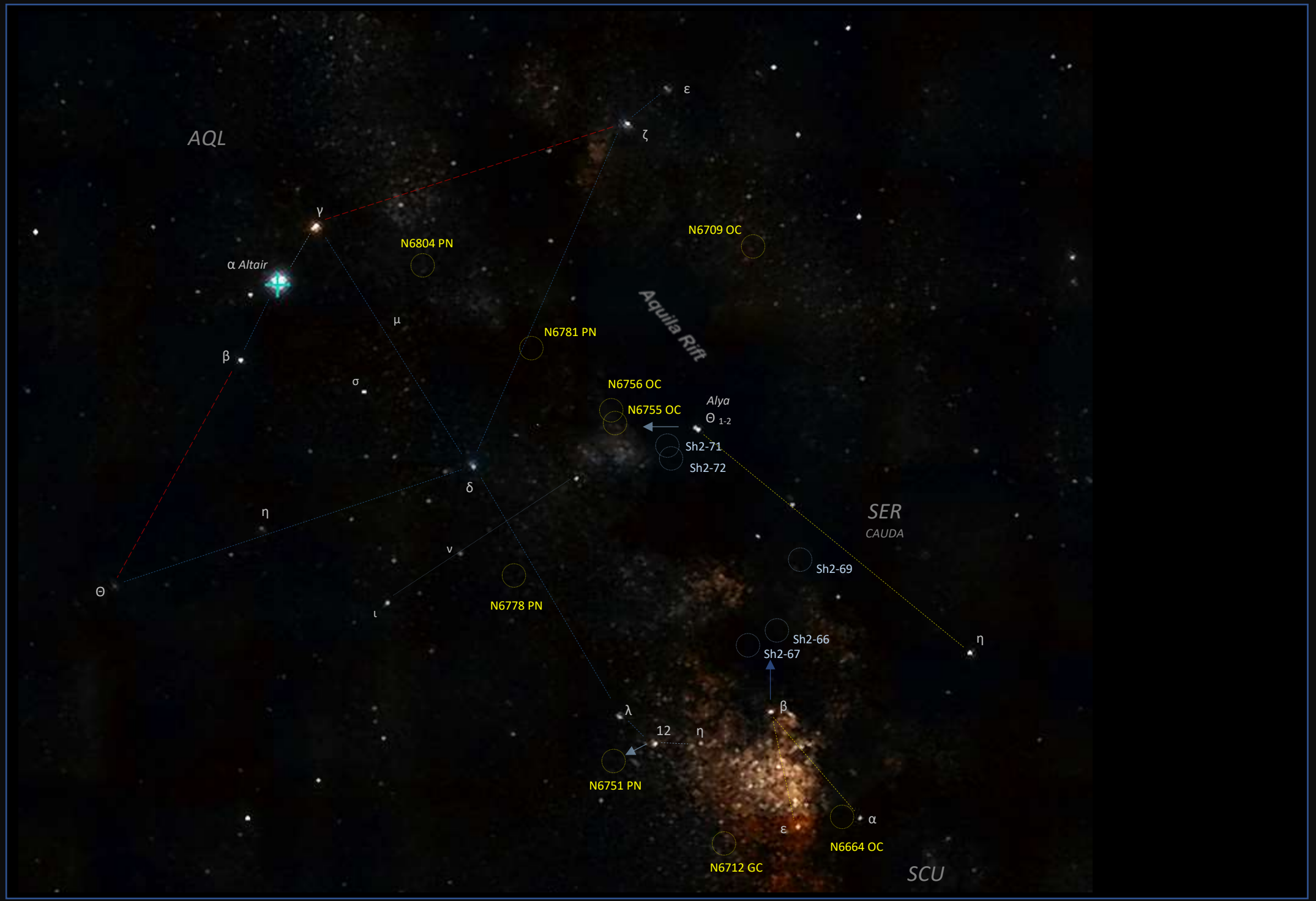
# AQUILA (Aql)

| √ | NGC | RASC | SAC | CALD | HER-400 | O-HT | O-SD | | Con | Type | R.A. H:m.s | DEC °,' | m_v | Size " | Comment |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **6709** | | | | | T094 | | S | Aql | OC | 18:51.3 | 10.2 | 6.7 | 15 | *"Flying Unicorn"* wide OC, SW of Zeta Aql ; 7x50Bino |
| | **6804** | | | | | | D091 | S | Aql | PN | 19:31.6 | 9.13 | 12.2 | ~ 5000 | Small "*Shrinking*" 4-shell PN; ~5° W of Altair |
| | **6781** | R095 | S003 | | H358 (3,743) | | D090 | S | Aql | PN | 19:18.4 | 6.33 | 11.8 | 1'49" | **Snow globe** / Moon Ghost PN; Large, bright ~4° NNW of Del Aql. ;16.2m central* |
| | **6756** | | | | H357 (7,62) | | D088 | S | Aql | OC | 19:08.7 | 4.42 | 10.6 | 4 | Pair of OC; Very small, somewhat dim, 4° WNW of Del Aql., |
| | **6755** | | | | H356 (7,19) | | D087 | S | Aql | OC | 19:07.8 | 4.16 | 7.5 | 15 | ----- " -----; Large, moderately bright $5.5^m$ 19 Aql. Santa's Sleigh |
| | **6778** | | | | | | D089 | S | Aql | PN | 19:18.4 | -1.36 | 11.9 | 20x40 | "Son of M76"; Bipolar PN 5° SSW of Del Aql. (55 SW of 27 Aql); Use OIII |
| | **6751** | | | | | | D086 | S | Aql | PN | 19:05.9 | -5.6 | 11.9 | 2400 | "Glowing Eye", 1° S of Del Aql; $14^m$ central*; |

# SCUTUM (Sct)

| √ | NGC | RASC | SAC | CALD | HER-400 | O-HT | O-SD | | Con | Type | R.A. H:m.s | DEC °,' | m_v | Size " | Comment |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 6664 | | | | | | D084 | S | Sct | OC | 18:36.5 | -8.11 | 7.8 | 12 | Santa's Sleigh |
| | 6712 | R094 | S087 | | H355 (1,47) | T095 | | S | Sct | GC | 18:53.1 | -8.42 | 8.2 | 7.2 | Small globular; look for PN IC 1295 in field |


AQL
ε
ζ
γ
N6804 PN
N6709 OC
α Altair
μ
N6781 PN
Aquila Rift
β
σ
N6756 OC
N6755 OC
Alya
Θ 1-2
Sh2-71
Sh2-72
δ
η
SER
CAUDA
ν
Sh2-69
Θ
N6778 PN
ι
Sh2-66
Sh2-67
η
β
λ
12
η
N6751 PN
α
ε
N6664 OC
N6712 GC
SCU

# AQUILA (Aql)

## *NGC 6709*

## *The "Unicorn" OC (Cr 392)*

18 Aql
Type K2

V913 Aql
Type M4 III Mira V*

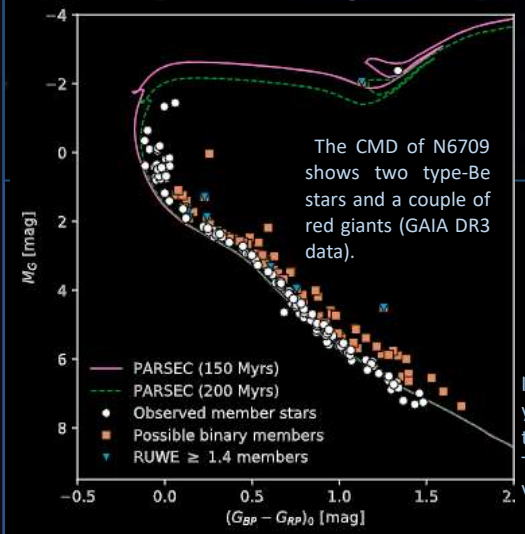
56N 12E Copenhagen, Denmark
2023-08-21, 21:30 Local (CEST, UT+2)
Trsp.: 5/7, Seeing: 6-7/10

Zeiss 100/640 APQ, TV 41 PAN
PVS-14/Photonis 4G NVD
610nm red LP, iPhone-XS, NightCap 9.4
1s Exp, 30s Ave, ISO: 32, Gain: Med.

K5 III

N6709

FOV
1°45'




The CMD of N6709 shows two type-Be stars and a couple of red giants (GAIA DR3 data).

N6709 is a young (150 Myr) open cluster containing ~305 members. It is located close to our solar system at ~1.2Kpc distance, on the inside of our own Ori-Cyg spiral arm.

On the night sky, N6709 can be found by a long sweep west ~13° from *Gamma Aql,* until you hit pair of ~7ᵐ red type K-M stars; -- Then the "*Unicorn*" of N6709 is seen flying just 1° to the SW. The OC is easily spotted in my 7x50 Zeiss Bino, and a beautiful view already at 16x in my rich field 100/640 refractor.

N6709 is a 7ᵐ OC ~13° due W of *Altair* (γ Aql), towards the NW 'corner' of The Eagle. At low power it is seen with a sprawling outline around two early type-K double stars (BD+10 3697 type K2 Ib Red Supergiant plus HD229716 type K0). It is located inside our Local Ori-Cyg Arm, up towards the inward bending Sagittarius spiral arm, at a distance of ~1.2 Kpc (3.900 Ly) from our solar system.

The OC is easily studied at low magnifications (15-30x), where it is seen with two central agglomerations of stars around the red giants marking the "hips" of the unicorn, with stellar chains including several double stars curving outwards from the cluster core. The cluster is seen on a backdrop of the dense star cloud of the Sagittarius spiral arm, at the N border of the dark dust clouds forming the Great Rift between Cygnus and Sagittarius.

HD174569
K5 III Giant

N
W

Zoom-In
1° 10'

K4 II-III
Giant

K2 Ib
Supergiant

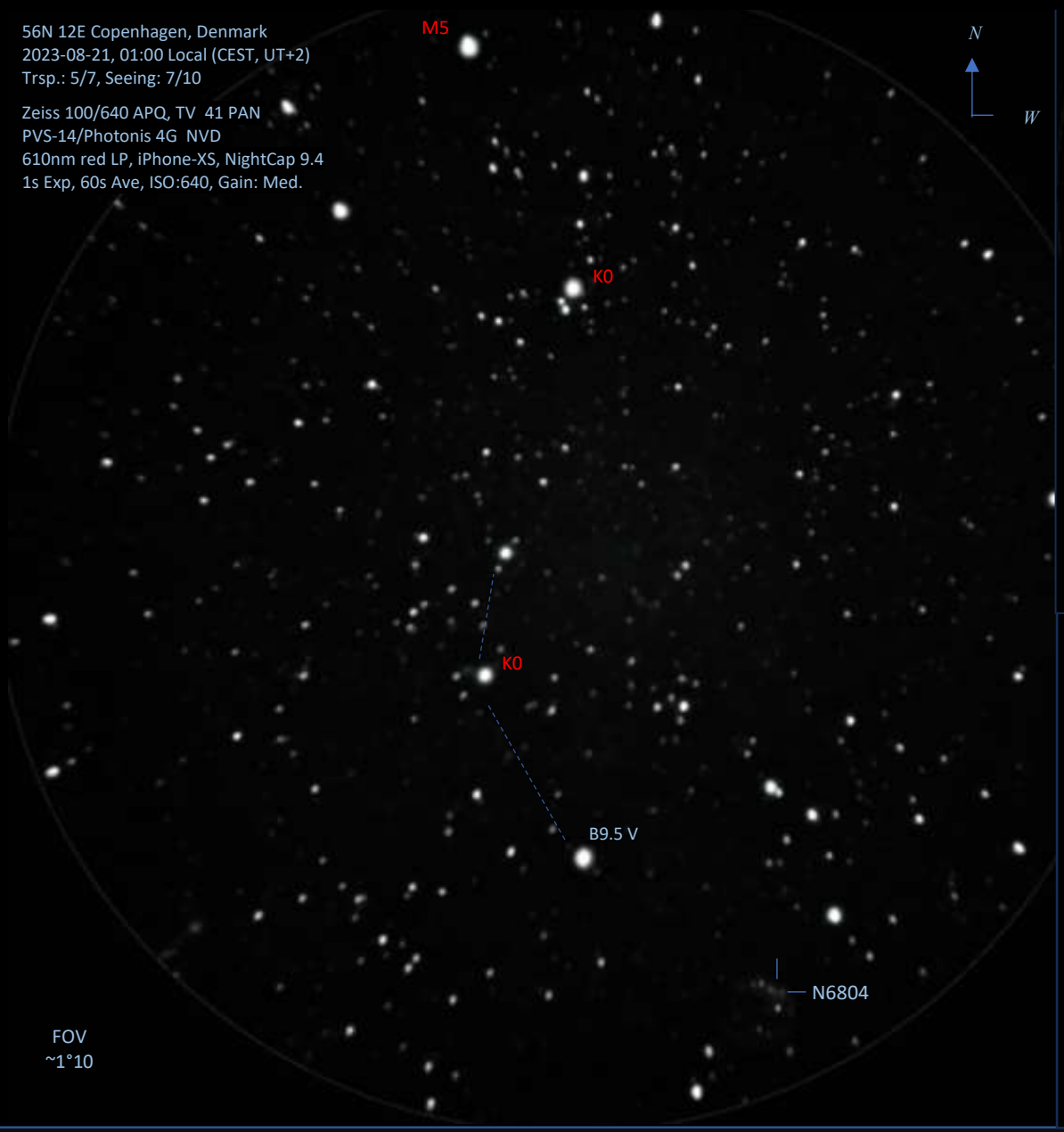
# *NGC 6804, The "Shrinking" PN*

N6804 is a faint (12$^{m}$) planetary nebula located at 1.1 Kpc distance on the inside of our local *Ori-Cyg* spiral arm. In my small 4" refractor, this PN appears as a tiny, faint fuzzy blob at low magnification (16x); At increasing magnification, it's seen as a stellar point, which should - with high magnifications - resolves into an annulus.

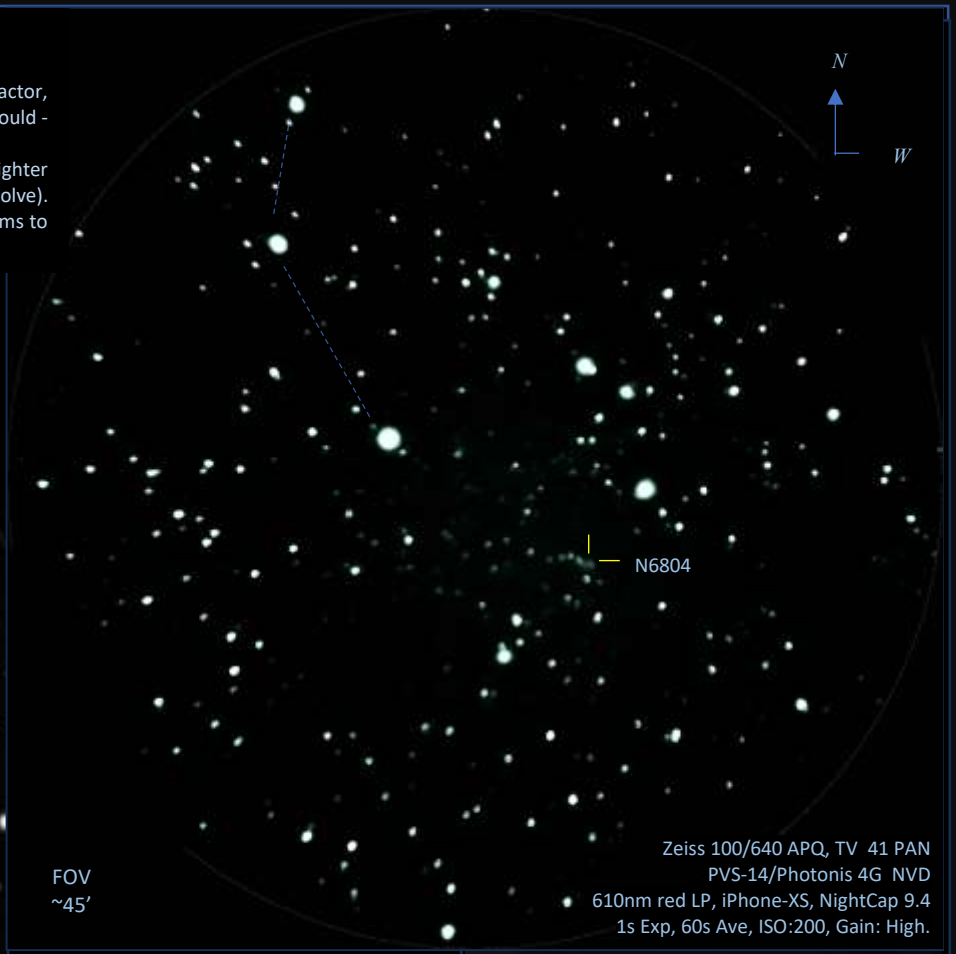
When zooming in on my rich-field view (to ~110x magnification), the 'blob' is seen as a faint nebulous outer shell surrounding a brighter central core, which marks the location of the central 14$^{m}$ star plus its inner shell/ring (which takes ~200-300x mag to resolve). *O'Meara* describes that in his 5" refractor at low power (33x), he sees N6804 as a tiny stellar ball using averted vision, but that it seems to shrink into a 12$^{m}$ star when using direct vision (hence his nickname: the *incredible shrinking PN*...).

56N 12E Copenhagen, Denmark
2023-08-21, 01:00 Local (CEST, UT+2)
Trsp.: 5/7, Seeing: 7/10

Zeiss 100/640 APQ, TV 41 PAN
PVS-14/Photonis 4G NVD
610nm red LP, iPhone-XS, NightCap 9.4
1s Exp, 60s Ave, ISO:640, Gain: Med.



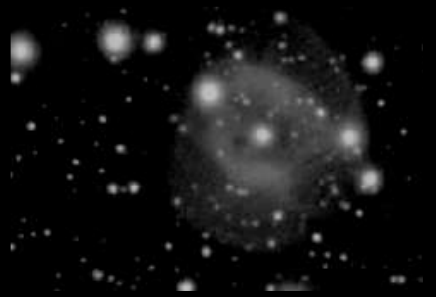

FOV
~1°10




FOV
~45'

Zeiss 100/640 APQ, TV 41 PAN
PVS-14/Photonis 4G NVD
610nm red LP, iPhone-XS, NightCap 9.4
1s Exp, 60s Ave, ISO:200, Gain: High.

Pan-STARRS



At high magnification, the inner, brighter shell of N6804 is seen elongated in the E-W direction, like lipstick marks from a cosmic kiss.

The outer fainter shell/halo is difficult to resolve with amateur telescopes.

56N 12E Copenhagen, Denmark
2016-08-27, 22:30-23-30 UT
Vixen FL-80S / 640mm F/8 refractor
1.7xGPC + K-40/O-25/O-16mm;

***Trsp***.: 4/7 (no moon)
***Seeing***: 6/10,
LP: SQM 18.6, NELM 5.4$^{m}$
***Bortle***: Orange, bright suburban

# *NGC 6781* *"Snow Globe" PN*

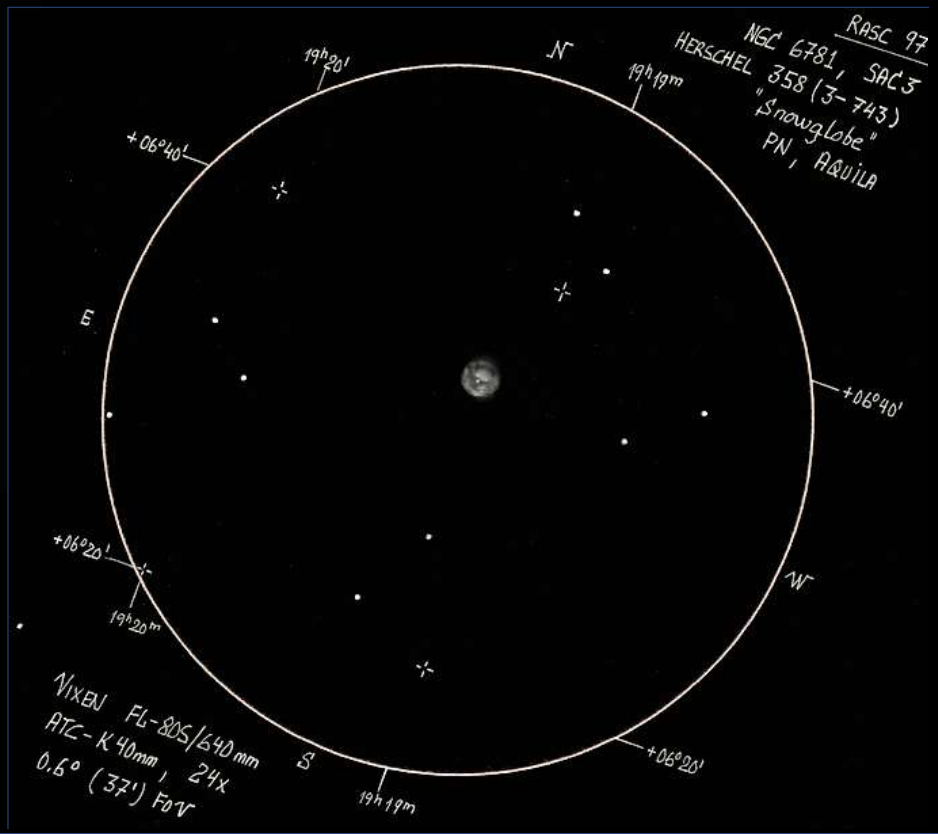
It's past midnight in late august, 01:30 local DST. I'm out in my Bortle orange suburban backyard with just above medium transparency and seeing, and I've just finished observing M102, the "*Spindle*" galaxy in Draco. I decide to close the night (morning) with a view of **RASC 95 (NGC 6781):** *the "Snowball" planetary nebula* in the right wing of Aquila.

I start my **star hop** at the neck of the Eagle: from *Mu Aql* -> I pan W ca. 4½° to the bright 5$^{m}$ star *19 Aql*; Just 1½° E of 19 Aql is a line of three 6-7$^{m}$ stars, and NGC 6781 is located just E of the northernmost star in this line (a nice visual double of 6.7$^{m}$ + 9$^{m}$, Sep ~3' in PA 275°). I place the double star to the W in the 1.8° FOV of my **K-40mm eyepiece @24x,** and the PN now shows up as a small and round, faint hazy spot in the center of the field. Clicking up the magnification using my CZJ Orthoscopics to 38x and 60x magnification confirms (still using averted vision) the round, pale nebulous glow, but yields no further details. This is what *Steven O'Meara* described as the *Ghost of the Moon*.



For more detail, I now click in my **R2 ccd/lcd live video**, yielding a view of **~106x @ 30' FOV.** I set the ccd exposure fixed to 5s, gain at 36dB with averaging/DNR of each 6 exposures..., and watch the details build up on the small HD lcd screen for the next 30 seconds.

WOW! I now see an almost 3-D version of the "Snow-globe" PN: the spherical shell of gas is a perfectly round nebula, with the edge of the sphere delineated as a bright ring around 4 stars in the center.



56N 12E Copenhagen, Denmark
2023-09-09, 21:30 Local (CEST, UT+2)
Trsp.: 5-6/7, Seeing: 7-8/10

Zeiss 100/640 APQ, TV 41 PAN
PVS-14/Photonis 4G NVD
610nm red LP, iPhone-XS, NightCap 9.4
1s Exp, 30s Ave,
ISO: 80, Gain: High.

NGC 6781
"Snow Globe" PN

FOV 1°45'

B330

HD 180028
F6 Ib Supergiant

Zoom-In

FOV 30'

Zeiss 100/640 APQ, TV 41 PAN
PVS-14/Photonis 4G NVD
610nm red LP, iPhone-XS, NightCap 9.4
1s Exp, 20s Ave,
ISO: 200, Gain: High.

N6781 is located at a distance of 0.9 Kpc (~3.1 Kly) up above the inside of our local Ori-Cyg spiral arm. It is a bipolar PN (i.e., an hourglass shaped torus) seen nearly along its polar axis, on the rich backdrop of the incurving Aquila part of the Milky Way.

N6781 is a relatively large PN, that is easily seen at low magnification as a faint, delicate nebulous spot; At higher magnifications, it resolves into a ring with a bright S rim and a much dimmer N rim. The 'face' of the PN is seen mottled, with darker (less dense) areas towards the center, which may indeed resemble the lunar maria! "Moons and Junes and Ferris wheels...

*La Silla* Observatory

# NGC 6755 – NGC 6756

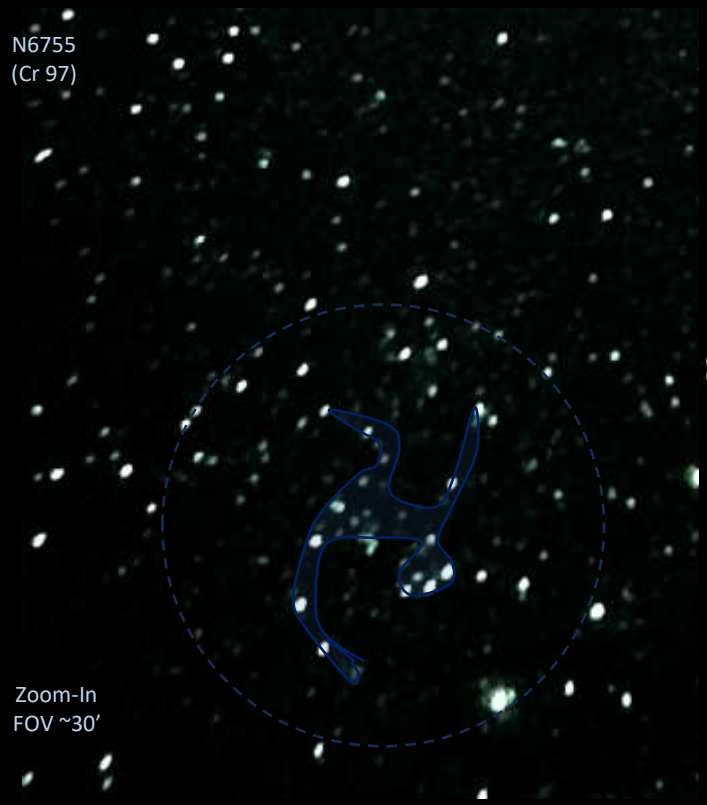
## *Double OC*

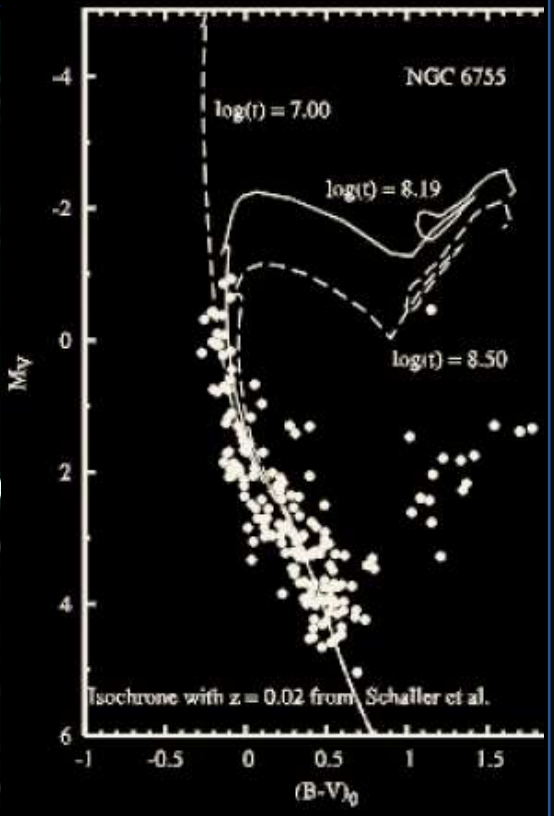
NGC **6756** and NGC 6755 are a pair of open clusters, located at 1.5 Kpc (~5000 KLY) distance from our solar system in the *Local (Ori-Cyg)* spiral arm, out on the outskirts of the inner *Sagittarius* spiral arm.

On the night sky, they are easily found, 3° due E of the nice double star *Theta Serpentis.* (*Alya*). They lie close to the dusty *Great Rift* in the *Aquila* part of the *Milky Way*, and they are therefore seen dimmed by 3-4 magnitudes. Between the two clusters is seen the red giant star HD178281. O'Meara saw an upside-down *'cat like figure'* in the outline of the star chains in the core of N6755; I can see that too.

The two OCs are both young (N6755: 155 Myr, N6756: 224 Myr), but where N6756 is small and concentrated with ~40 members, N6755 is larger and looser with ~160 members. They were both formed from the same interstellar molecular cloud, but they are probably not gravitationally bound as a proper binary OC system.





# *NGC 6778 (=6785?)*

*"Son of M76"* PN

*"This is "an extremely small stellar nebula, equal in size to a 15$^{m}$ star"* (J. Herschel).








N6778 is a small PN located towards the *Sagittarius* spiral arm, at a distance of 3 Kpc (~10 Kly) from our solar system. On our night sky, it is found ~50′ SW of the evolved blue giant star *27 Aquilae* (of type B9).

At low magnification in my 4" scope, the PN is barely visible as a faint star, while at higher magnifications it reveals itself as a pair of E-W oriented lobes (the E lobe the largest), separated by an equatorial dust disk (i.e., a bipolar filamentary nebula). The PN does indeed look like a smaller version of the *Little Dumbbell* nebula, which is why O'Meara named it: *"Son of M76"*.

56N 12E Copenhagen, Denmark
2023-09-09, 22:00 Local (CEST, UT+2)
Temp.: 17°C, Hum.: 89%, DewPt.: 15°C
Trsp.: 4-5/7, Seeing: 7/10, LP: NELM 6.4

Zeiss 100/640 APQ, TV 41 PAN
PVS-14/Photonis 4G NVD
610nm red LP, iPhone-XS, NightCap 9.4
1s Exp, 20s Ave, ISO: 160, Gain: Med.

# *NGC* 6751

*"Glowing Eye"* PN

N

W

Zoom-In
~60x
FOV ~30'

OME 5

λ Aql
B9 V

56N 12E Copenhagen, Denmark
2023-09-09, 22:30 Local (CEST, UT+2)
Temp.: 17°C, Hum.: 89%, DewPt.: 15°C
Trsp.: 4-5/7, Seeing: 7/10, LP: NELM 6.4

Zeiss 100/640 APQ, TV 41 PAN
PVS-14/Photonis 4G NVD
610nm red LP, iPhone-XS, NightCap 9.4
1s Exp, 30s Ave, ISO: 24, Gain: Med.

V* Aql
CN5 Carbon

12 Aql
K1 III

*B134*

*B133*

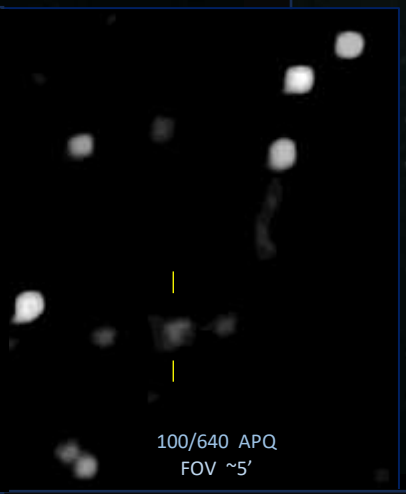
16x
FOV ~2°10'

Wiki

N6751 is a young (~3000 yr) small PN located at 2.3 Kpc distance in the *Sagittarius* spiral arm. On our night sky, it is found ~1° due S from Lambda Aql.

At low mag., N6751 is seen as a faint ~12$^{m}$ star, while higher mag. reveals a brighter core inside a faint shell. I was not able to see the "glowing eye" structure in my 4" refractor (seeing the inner ring requires ~200x mag.).

HST images show a "dandelion puff ball" filamentary structure in the bright inner bubble (the iris of 'the glowing eye'), inside a much fainter outer halo.



100/640 APQ
FOV ~5'

# SCUTUM (Sct)

## *NGC 6664, Santa's Sleigh OC*

FOV ~2°

56N 12E Copenhagen, Denmark
2023-09-06, 21:30 Local (CEST, UT+2)
Trsp.: 4-5/7 high haze, Seeing: 6-7/10

Zeiss 100/640 APQ, TV 41 PAN
PVS-14/Photonis 4G NVD
610nm red LP, iPhone-XS, NightCap 9.4
1s Exp, 30s Ave, ISO: 40, Gain: Med.

V* RX Sct
Carbon C5 II

EV

N6664

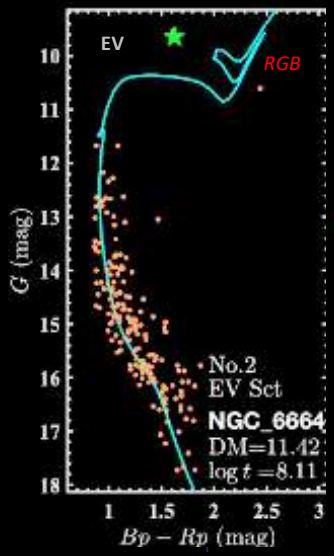
α Scuti
K3 III

K2

N6664 (Cr 373) is easily found on the night sky, as a large and scattered OC bordering the ~4$^{m}$ bright red giant *Alpha Scuti*. N6664 is young (only ~46 Myr) and located at a distance of ~2 Kpc in the outer part of the incurving *Sagittarius* spiral arm, which is seen (from our position in the Local Arm) as the *Scutum Star Cloud.*

The outline of the cluster has been likened to *Santa's Sleigh*, -- and I can indeed see a reindeer with the contour of a sleigh behind; and maybe even a Santa at the back of the Sleigh... The large scattered cluster is easily found on the night sky, just 20' due E of *Alpha Scuti,* where it is clearly seen already in my 10x56 *Zeiss* binos, and can be readily studied already at low magnification (wide field 16x in my 4").

Zoom-In
FOV ~30'


The young age of the cluster is revealed by the CMD, where most of the ~60 members are distributed along a clear Main Sequence with only 6 red giant stars, 3 blue straggler stars (BSS) plus a ~10$^{m}$ bright Cepheid variable: *EV Scuti* (period ~3 days).

56N 12E Copenhagen, Denmark
2023-09-06, 22:20 Local (CEST, UT+2)
Trsp.: 4-5/7 high haze, Seeing: 6-7/10

Zeiss 100/640 APQ, TV 41 PAN
PVS-14/Photonis 4G NVD
610nm red LP, iPhone-XS, NightCap 9.4
1s Exp, 15 Ave, ISO: 24, Gain: Med., High

# *NGC 6712*

*The core of an old GC*

16x
FOV ~2°

N6712

IC1295 PN

HD174464
F2 II-III

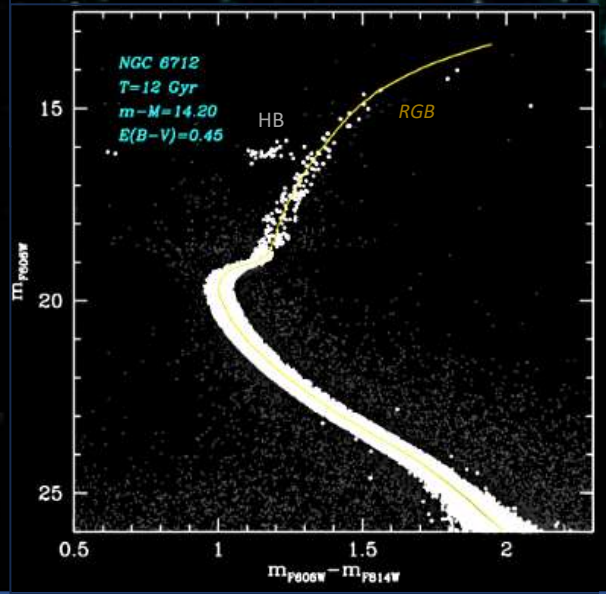
N6712 is a rather small and sparse globular cluster in the *Milky Way* halo, out at ~8 Kpc distance close to the galactic bulge.

I find it on the night sky by sweeping east 2½ from midway between ε and δ *Scutum*, where it can be easily spotted in a low mag. rich field view, and recognized as a small GC.

Zeiss 100/640 APQ, TV 41 PAN
PVS-14/Photonis 4G NVD
610nm red LP, iPhone-XS, NightCap 9.4
1s Exp, 60s Ave, ISO: 24, Gain: Med.

Zoom-In
FOV ~30'

K1 III

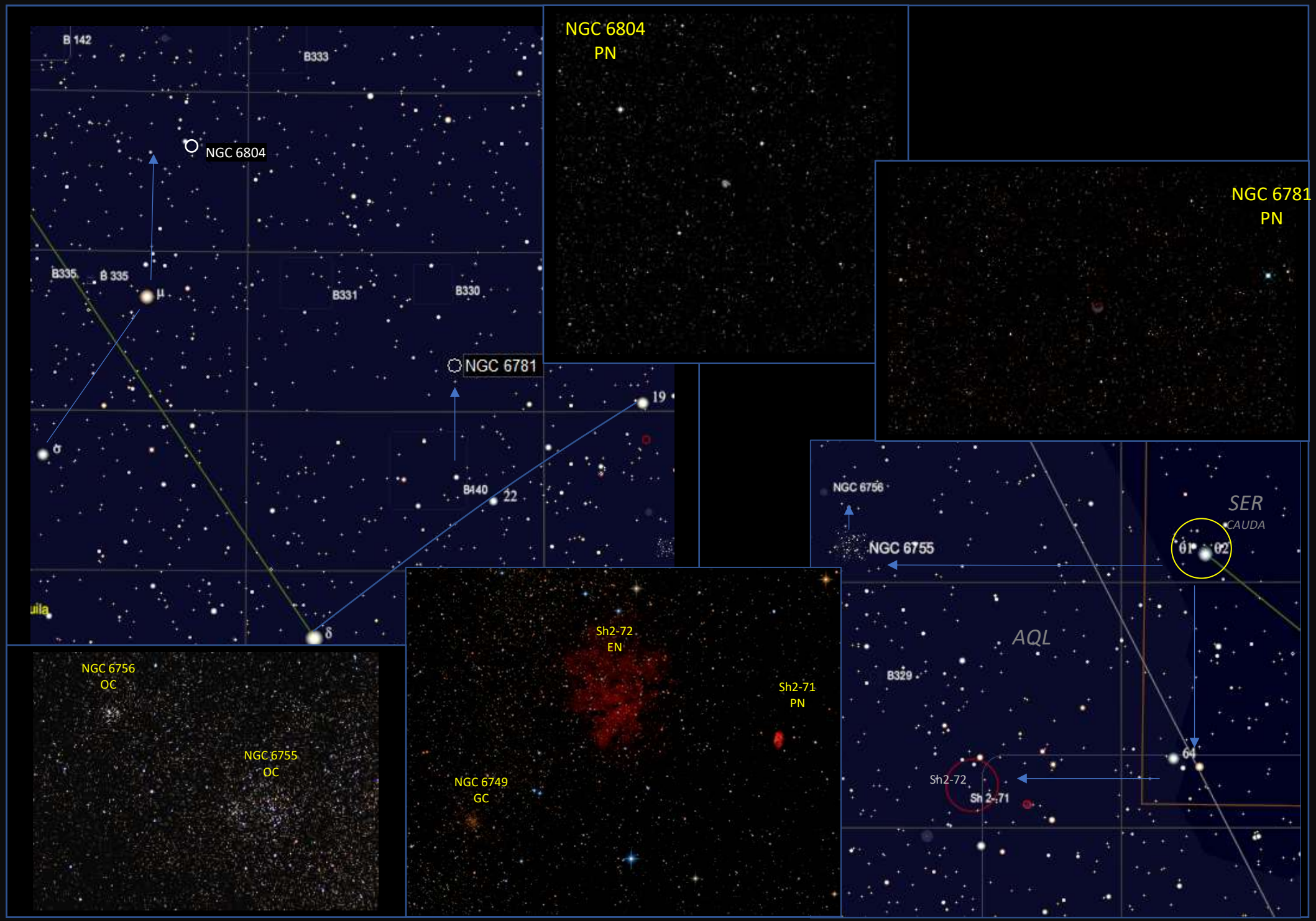


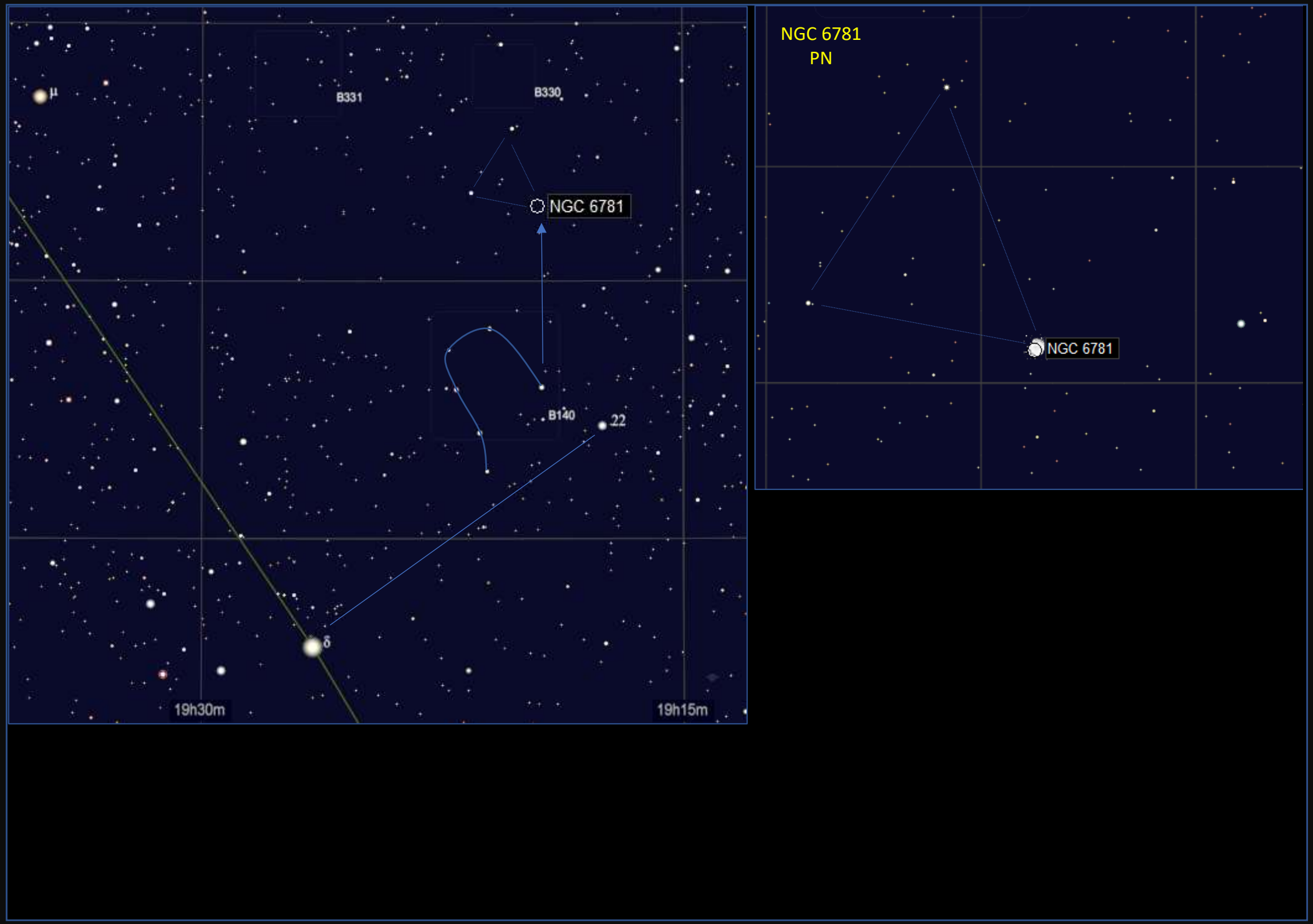

As seen at medium (~60x) mag. in my small 4" refractor, N6712 is a round, compact and mottled ball of partly resolved stars, with stellar chains dangling out N, W and S, all caused by gravitational distortion from its close proximity to the galactic core. It is estimated that the ~12 Gyr old N6712 has been tidally stripped of ~99% of its mass due to numerous close encounters with the Galactic bulge.

The CMD (left) shows many variable stars on the horizontal branch (HB), several of which are of type RR Lyrae.

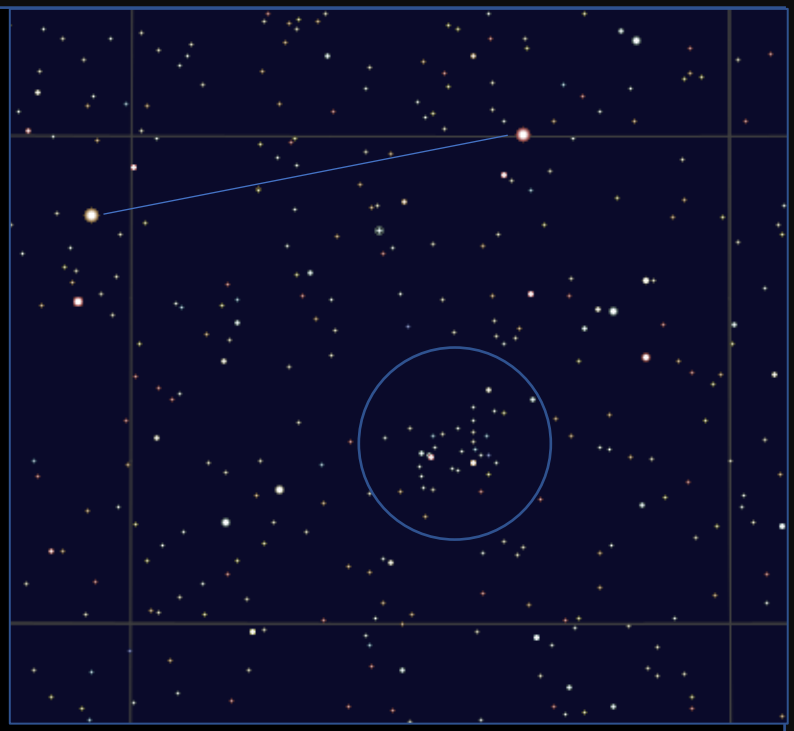
*SOME*

*STAR HOPS*

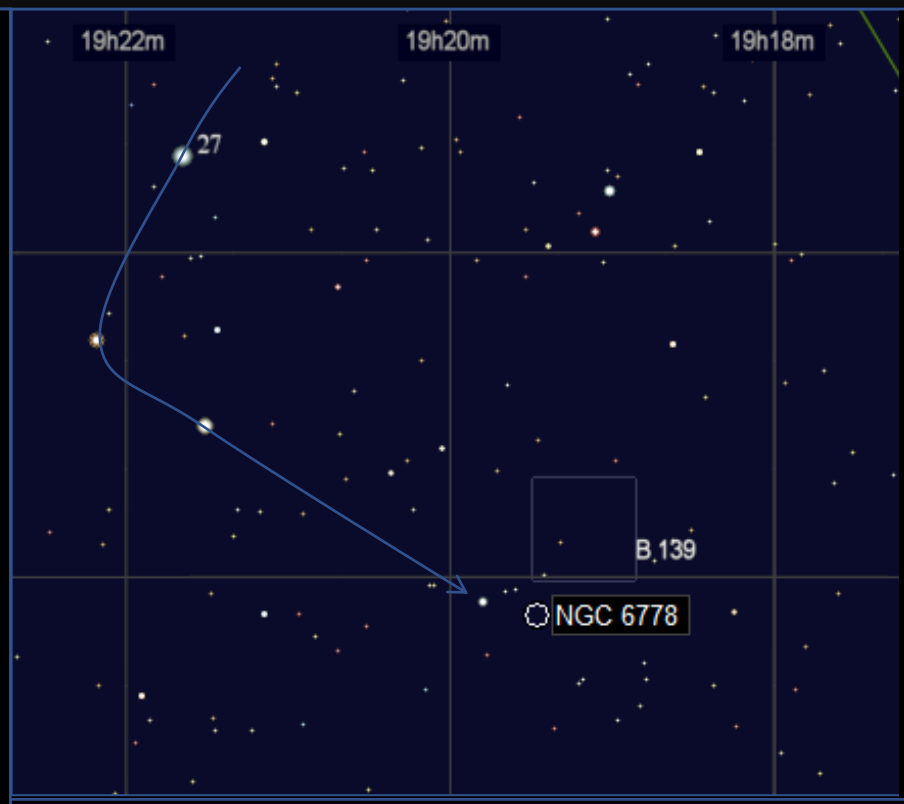

B 142
B333
NGC 6804
B335
B 335
μ
B331
B330
NGC 6781
19
σ
B140
22
δ
NGC 6804
PN
NGC 6781
PN
NGC 6756
NGC 6755
SER
CAUDA
θ1
θ2
AQL
B329
64
Sh2-72
Sh 2-71
NGC 6756
OC
NGC 6755
OC
Sh2-72
EN
Sh2-71
PN
NGC 6749
GC

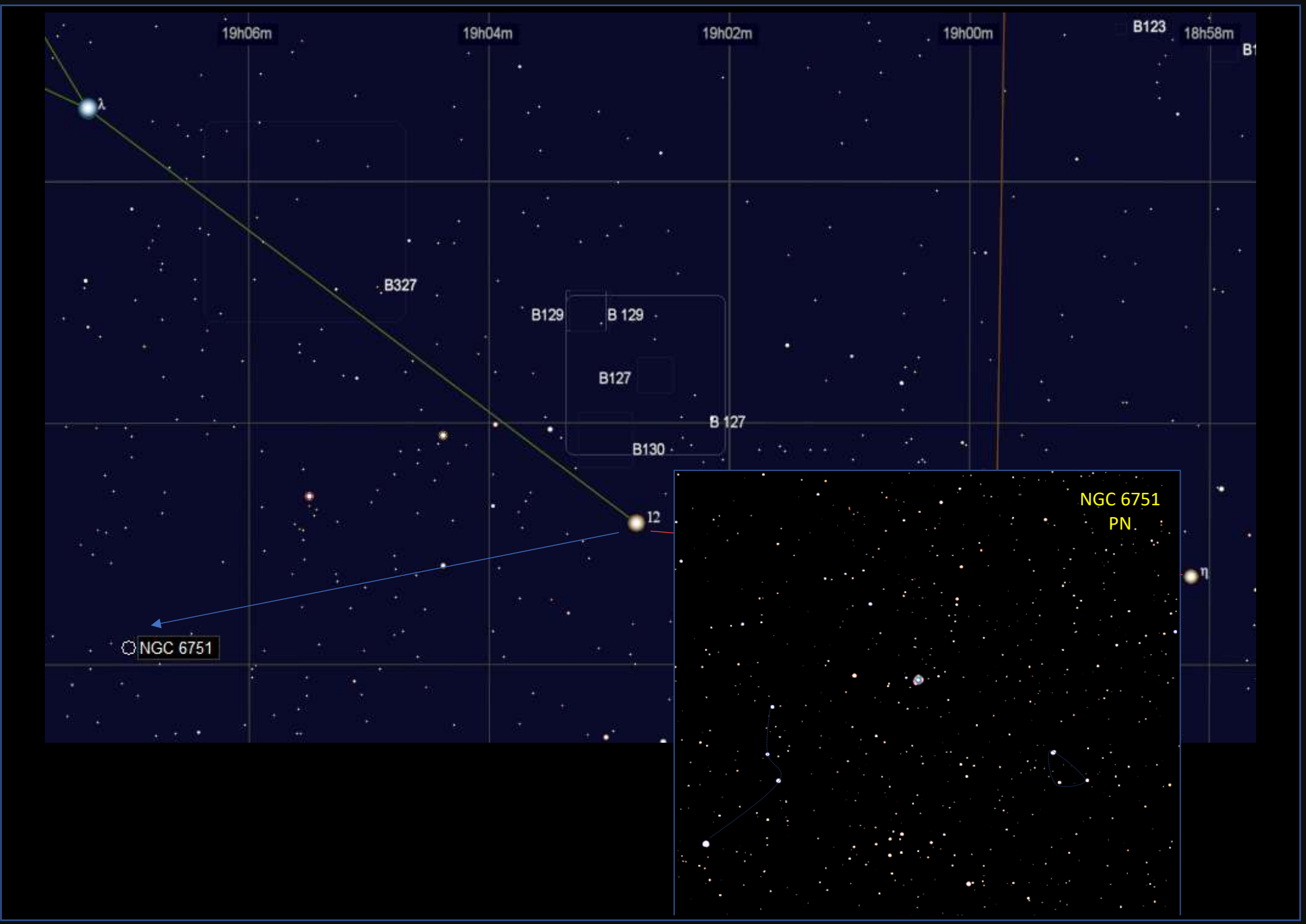

μ
B331
B330
NGC 6781
B140
22
δ
19h30m
19h15m
NGC 6781
PN
NGC 6781

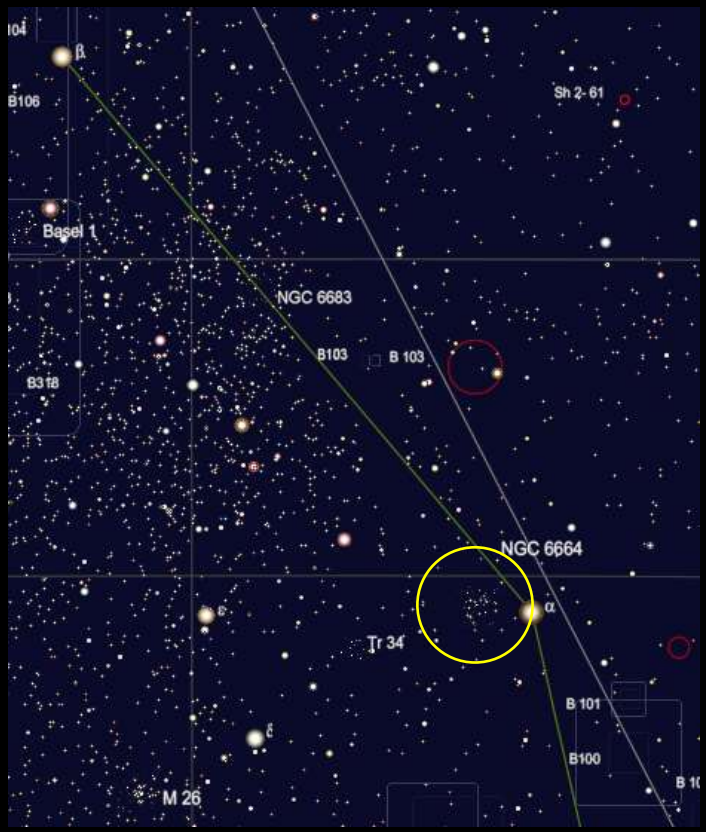

NGC 6709
OC

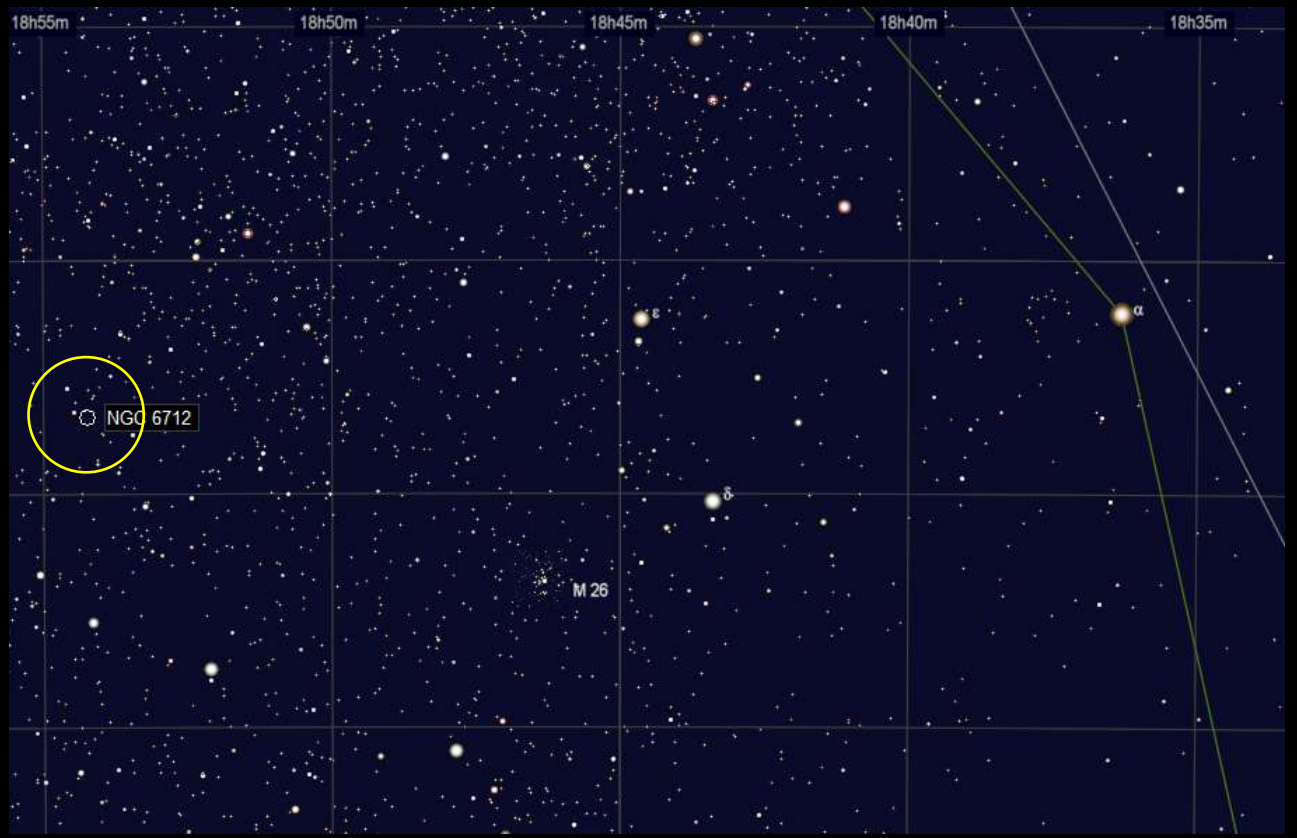



NGC 6778
PN
6
21
35
B141
23
24
27
B 139
NGC 6778
19h30m
19h15m


19h22m
19h20m
19h18m
27
B 139
NGC 6778


19h06m
19h04m
19h02m
19h00m
B123
18h58m
λ
B327
B129
B 129
B127
B 127
B130
12
NGC 6751
NGC 6751
PN
η


β
B106
Sh 2-61
Basel 1
NGC 6683
B103
B 103
B318
NGC 6664
α
Tr 34
B 101
B100
M 26


18h55m
18h50m
18h45m
18h40m
18h35m
NGC 6712
ε
α
δ
M 26