

Constellation Guide

Constellation: Aquila (Aql)

Evening Visibility: **June – August**

Opposition: July

Latitude Visibility: **+90° to -75°**

Online Information: | In-The-Sky.org | Constellation Guide.com |

Constellation Targets

HR 7099, [NGC-6709](#), UV Aql, [11 Aql](#), NGC-6735, Berk-81, [V Aql](#), [15 Aql](#), B-133, [NGC-6755](#), [NGC-6760](#), NGC-6772, B-138, [NGC-6781](#), NGC-6804, CR-401, [B-143](#), [NGC-6814](#), Pal-11, Pi Aql, Tennis Racket, [57 Aql](#), V1469 Aql

Mythology/Back Story

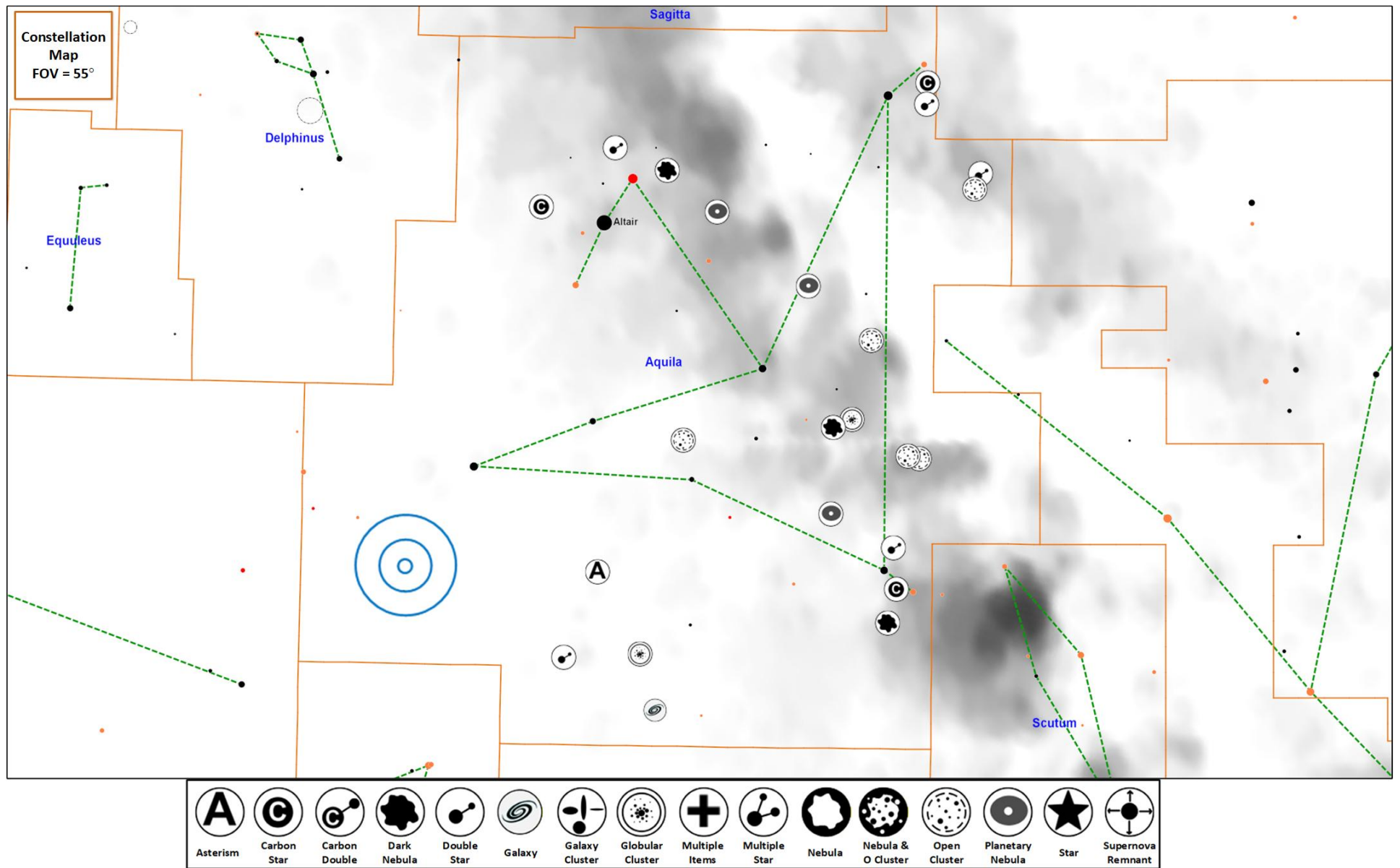
Aquila the eagle dates to ancient times and is the bird that was a companion to the god Jupiter and carried his thunderbolts. The star Altair is a member of this constellation and one of the three stars in the asterism known as the [Summer Triangle](#), a prominent trio of stars Deneb (Cygnus), Vega (Lyra), and Altair (Aquila).

Constellation Highlights

Objects in this constellation may be a bit tricky to star hop to, but there are a number of interesting objects here.

- **HR 7099** (DS) – Colorful star system
- **UV Aql** (CS) – High BV value carbon star
- **15 Aql** (DS) – Colorful star system for binoculars and telescope
- **NGC-6760** (GC) – Nice Globular Cluster
- **Tennis Racket** (AS) – Tennis Racket and Ball
- **NGC-6709** (OC) – RASC Deep sky gems list
- **V Aql** (CS) – High BV value carbon star
- **B 133** (DN) – Noted to be a very dark nebula
- **NGC-6781** (PN) – The Snowglobe nebula
- **57 Aql** (DS) – Colorful star system for binoculars and telescopes

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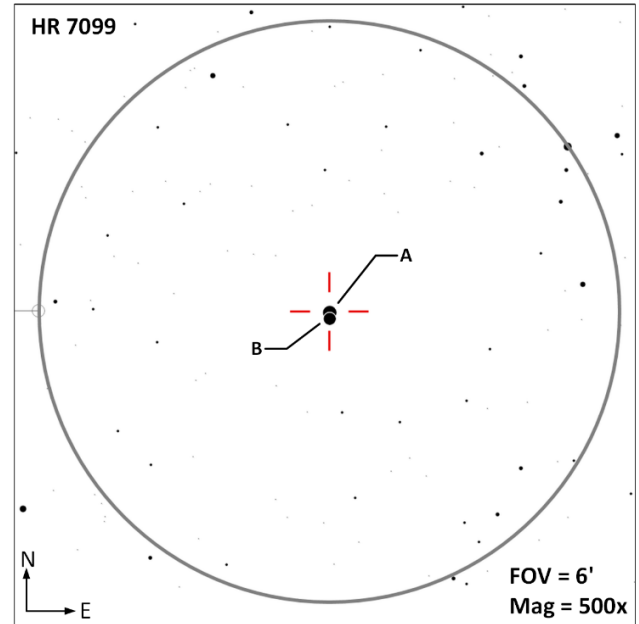
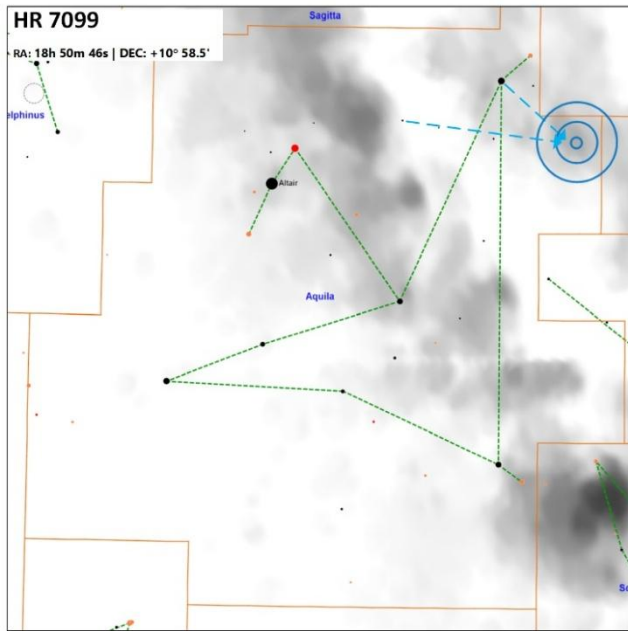
Object (Type)	Links	Gear	Aliases	Stats
HR 7099 (DS)	1	T	SAO-104170; HIP 92475; HD 174569; ADS 11750; BD+10 3685; WDS18508+1059; Σ2404	AB Mag=6.9,7.8 Sep=3.4" PA=182° mBortle=9 mApt=50mm Spec=K5III, K3 Color=orange-red, orange
NGC-6709 (OC)	1	T	Cr 392; OCL 100; Levy 98; Lund 866; Raab 137	Mag=6.7 Size=13' SB=20.9 mBortle=9 mApt=60mm MC=IV2m
UV Aquilae (CS)		T	HIP 93158; HD 176200; BD +14 3729; CCCS 2684; GCVS50036	Magnitude Range= 8.6 to 9.8 Period=358d Spec=C5,3 BV=+4.39 Color=deep red
11 Aquilae (DS)	1 , 2	B, T	SAO-104308; HIP 93203; HD 176303; HR 7172; ADS 11902; BD+13 3841; STF2424; WDS18591+1338; Σ2424	Mag=5.3,9.3 Sep=20.5" PA=302° mBortle=9 mApt=50mm Spec=F6IV, ? Color=yellow-white, blue
NGC 6735 (OC)		T		Mag=8.5 Size=12' SB=22.5 mBortle=4 mApt=150mm MC=III2m
Berkeley 81 (OC)		T	C1859-005; Berk 81; Lund 875; OCl 88	Mag=9.9 Size=5' SB=22.0 mBortle=? mApt=300mm MC=II2r
V Aquilae (CS)	1	T	SAO-142985; HIP 93666; HD 177336; HR 7220; BD-05 4858; CCCS 2695	Magnitude Range= 6.8 to 7.4 Period=0.97y Spec=C5,4-C6,4 BV=+4.32 Color=deep red
15 Aquilae (DS)	1 , 2	B, T	SAO-142996; HIP 93717; HD 177463; HR 7225; ADS 12007; BD-04 4684; SHJ286; WDS19050-0402	AB Mag=5.5,7 Sep=39.3" PA=210° mBortle=9 mApt=50mm Spec=K1 III, ? Color=orange, orange
Barnard 133 (DN)		T	LDN 531; CB 180; P66; LM 290	Size=10'x3' mBortle=4 mApt=100mm Opacity=6
NGC-6755 (OC)	1	T	Cr 397; C1905+041; C1905+042; Cz 39; Lund 877; Lund 878; OCl 96; OCl 97	Mag=7.5 Size=14' SB=21.9 mBortle=9 mApt=102mm MC=II2r
NGC-6760 (GC)	1	T	GCL 109; Levy 110	Mag=8.9 Size=9.6' SB=22.4 mBortle=5 mApt=50mm MC=IX:
NGC-6772 (PN)		T	ARO 102; Sa 2-384; PK 033-06.1; PN G033.1-06.3; VV 224	Mag=12.7 Size=1' SB=21.3 mBortle=3 mApt=180mm MC=Elliptical
Barnard 138 (DN)		B	Barnard's Black Lizard; LDN 627	Size=140'x20' mBortle=4 mApt=50mm Opacity=2
NGC-6781 (PN)	1	T	ARO 32; PK 041-02.1; PN G041.8-02.9; VV 228; Snowglobe Nebula	Mag=11.4 Size=1.8' SB=21.3 mBortle=6 mApt=102mm MC=Elliptical
NGC-6804 (PN)		T	ARO 34; PK 045-04.1; PN G045.7-04.5; VV 233	Mag=12.2 Size=1.1' SB=21.0 mBortle=5 mApt=130mm
Collinder 401 (OC)		T	C1935+002; Lund 898; OCl 98	Mag=7 Size=1' SB=15.6 mBortle=9 mApt=70mm MC=IV2m
Barnard 143 (DN)	1	B, T	B 143; LDN 694; E Nebula; Barnard's E	Size=30' mBortle=4 mApt=50mm Opacity=6

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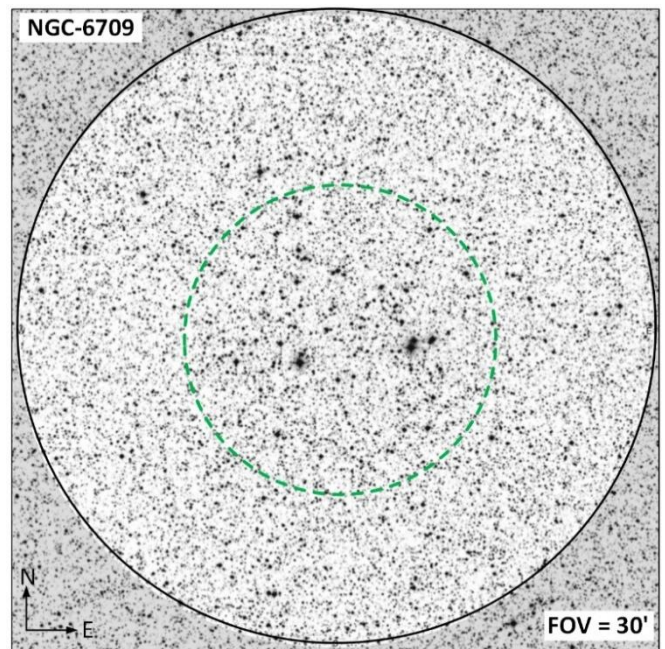
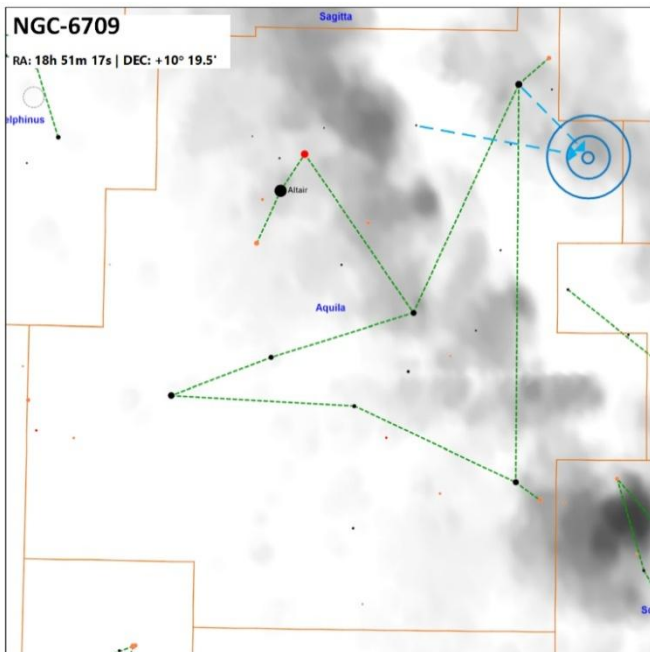
Object (Type)	Links	Gear	Aliases	Stats
NGC-6814 (G)	1	T	MCG - 2-50-1; MCG -02-50-001; PGC 63545; Levy 262	Mag=12.1 Size=3' SB=23.1 MC=SAB(rs)bc
Palomar 11 (GC)		T	Pal 11	Mag=9.8 Size=3.2' SB=21.0 mBortle=8 mApt=50mm MC=XI
Pi Aquilae (DS)	1	T	SAO-105282; HIP 97473; π Aql; 52 Aql; HD 187259; HR 7544; ADS 12962; BD+11 3994; STF2583; WDS19487+1149; Σ 2583	AB Mag=6,6.8 Sep=1.4" PA=105° mBortle=9 mApt=102mm Spec=A3V, F9III Color=white, yellow-white
Tennis Racket (AS)		B, T		Size=45' Stars=9 Ref Star: HD 187570; SAO-143839; HIP-97655
57 Aquilae (DS)	1 , 2	B, T	SAO-143898; HIP 97966; 57 Aql; HD 188293; HR 7593; ADS 13087; BD-08 5154; J195437.65-081338; PPM203424; STF2594; WDS19546-0814; Σ 2594	AB Mag=5.7,6.5 Sep=36" PA=170° mBortle=9 mApt=50mm Spec=B7Vn, B8V Color=blue-white, blue-white
V1469 Aquilae (CS)		T	SAO-125356; HIP 98538; HD 189711; BD +9:4369; BD+09 4369	Magnitude Range= 8.4 to 8.5 Spec=C (N) BV=+2.04 Color=red

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HR 7099 (DS || AB | Mag=6.9,7.8 | Sep=3.4" | PA=182° | mBortle=9 | mApt=50mm | Spec=K5III, K3 | Color=orange-red, orange |) Located 1,259 light years away, this system is listed in the 120 colorful doubles list, described as two orange stars in a field of stars. It is not known if these components are physically associated.

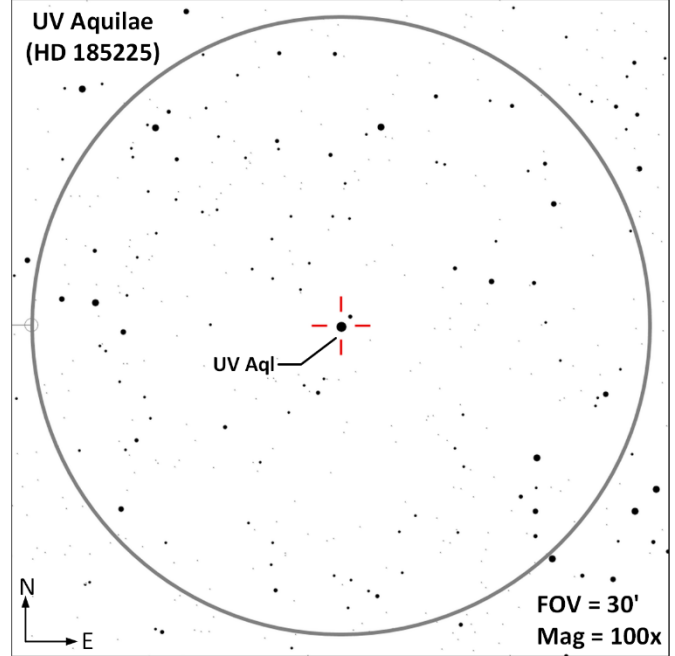
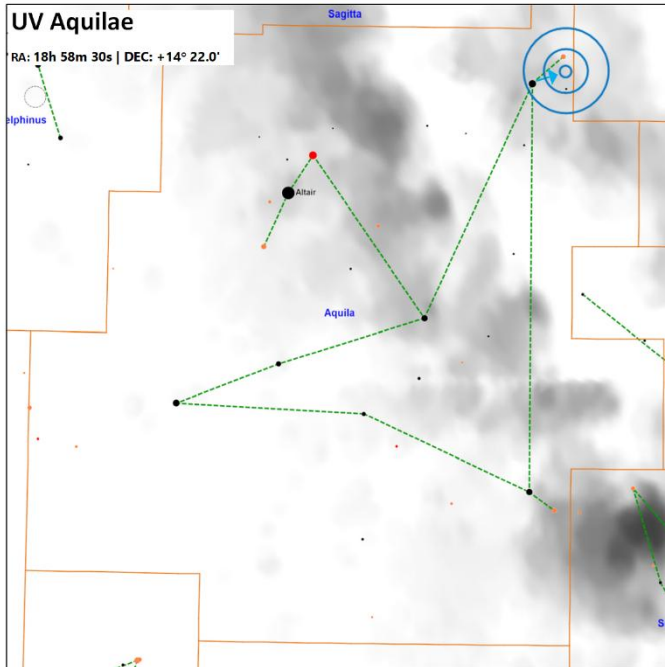


NGC-6709 (OC || Mag=6.7 | Size=13' | SB=20.9 | mBortle=9 | mApt=60mm | MC=IV2m |) This open cluster is estimated to contain just over 300 members and is approximately 141 million years old. Trumpler Classification is IV-Not well detached, but has a strong field concentration, 2-Medium range of brightness between stars in the cluster, m-Medium rich cluster with 50-100 stars. Note the Trumpler classification is a visual estimate of visible stars while the 300-member count is probably based on images taken.

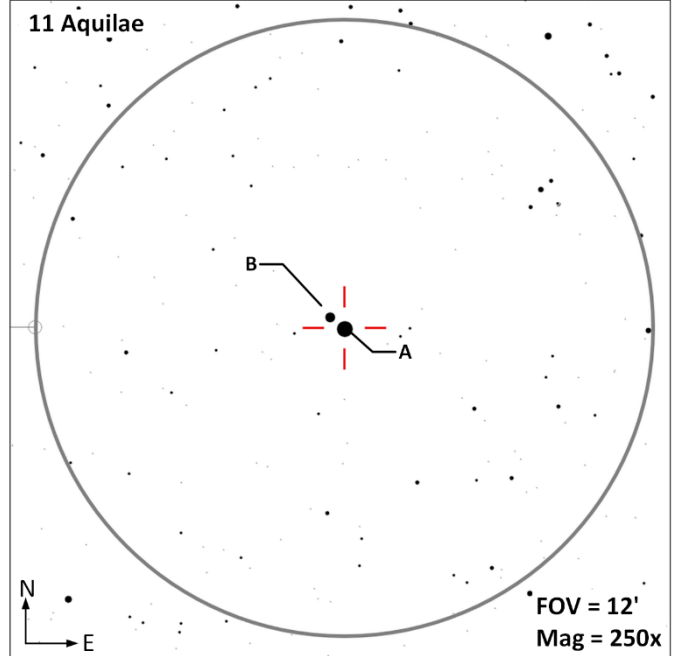
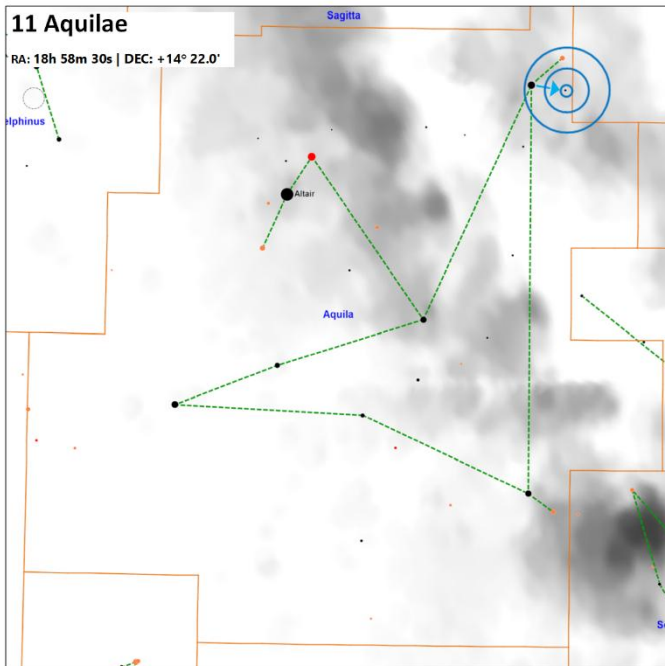


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UV Aquilae (CS || Magnitude Range= 8.6 to 9.8 | Spec=C5,3 | BV=+4.39 | Period=358d | Color=deep red |) A variable star with a B-V color index of +4.39, with a period of 358 days.

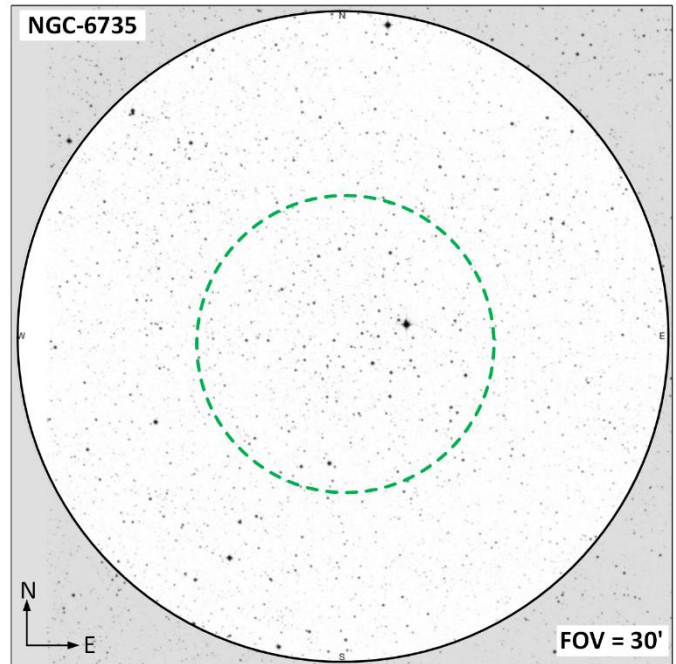
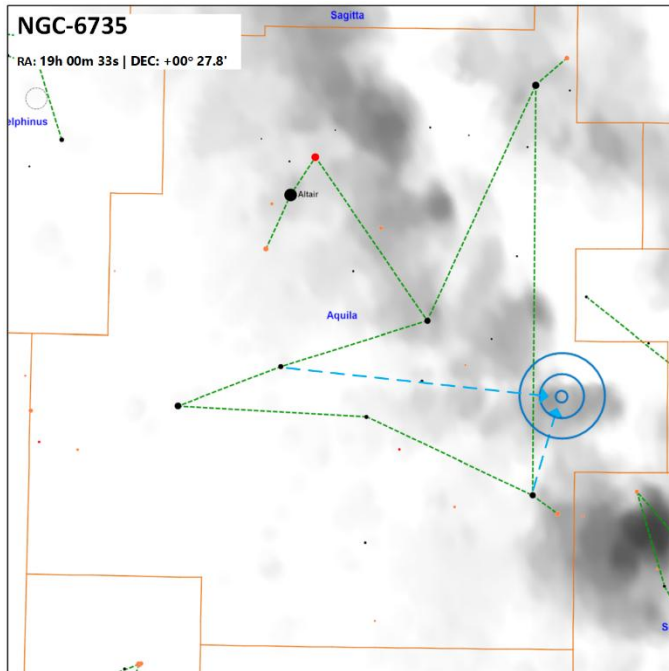


11 Aquilae (DS || | Mag=5.3,9.3 | Sep=20.5" | PA=302° | mBortle=9 | mApt=50mm | Spec=F6IV, ? | Color=yellow-white, blue |) 158 light years away, this is an optical double that appears on the RASC list of colorful doubles and has been described as a yellow and blue pair in a dense field of stars.

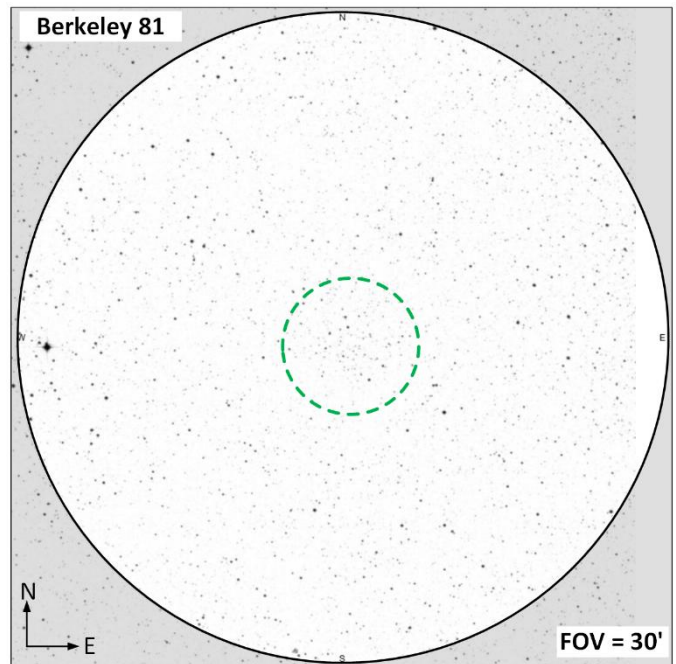
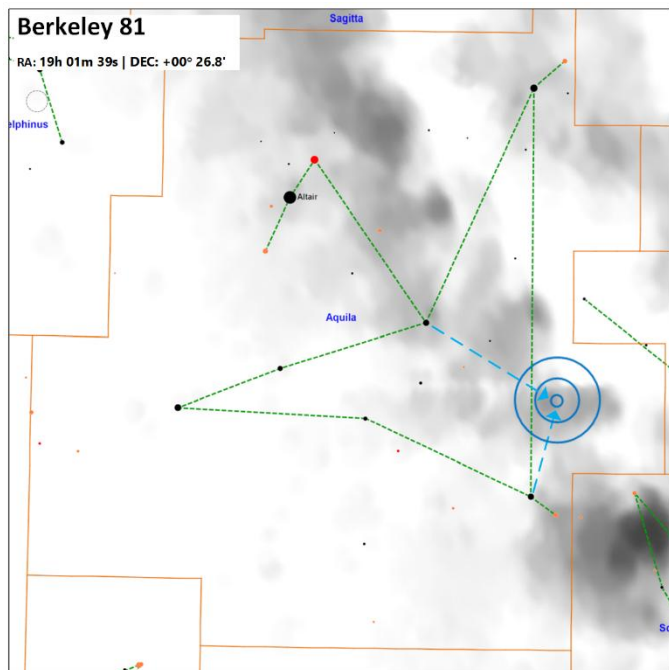


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NGC 6735 (OC || Mag=8.5 | Size=12' | SB=22.5 | mBortle=4 | mApt=150mm | MC=III2m) Located 4,781 light years away, with a physical diameter of 17 light years. Trumpler Classification is III-Detached with no noticeable concentration, 2-Medium range of brightness between stars in the cluster, m-Medium rich cluster with 50-100 stars.

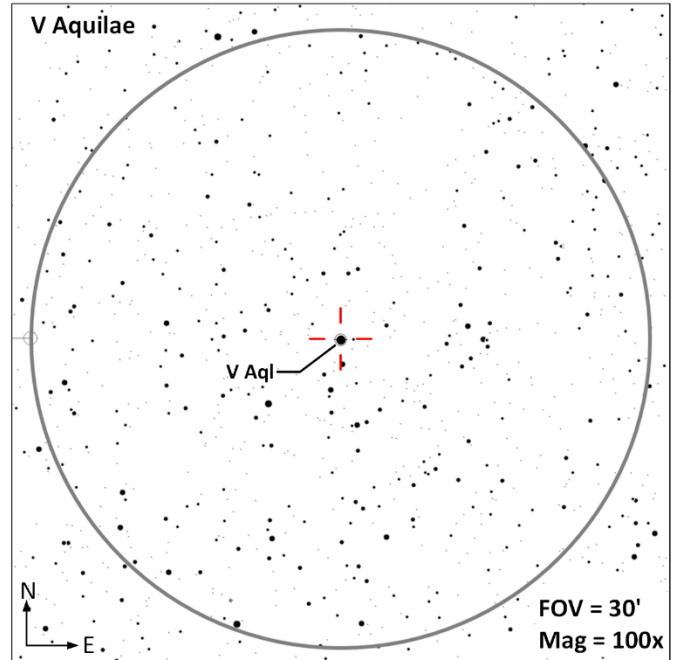
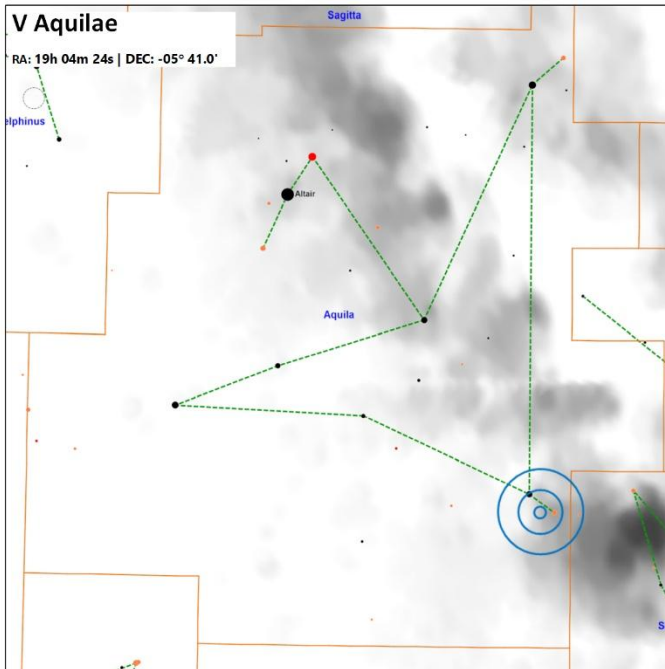


Berkeley 81 (OC || Mag=9.9 | Size=5' | SB=22.0 | mBortle=? | mApt=300mm | MC=II2r) Located 9,785 light years away, with a physical diameter of 14 light years. Trumpler classification is II-Detached with little central concentration, 2-Medium range of brightness between the stars in the cluster, r-Rich cluster with over 100 stars.

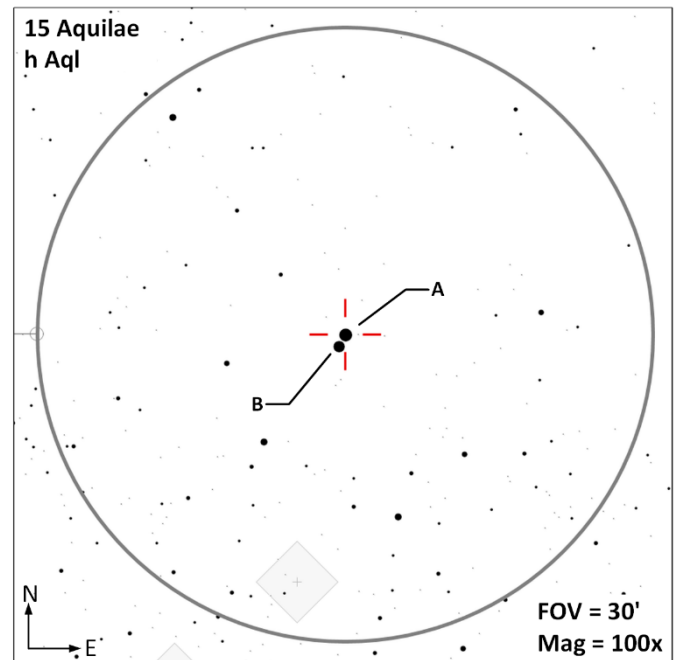
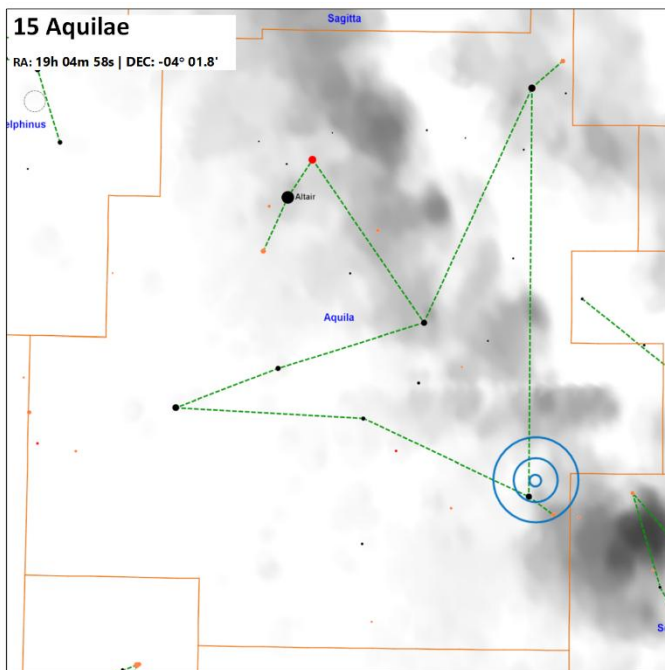


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V Aquilae (CS || Magnitude Range= 6.8 to 7.4 | Period=0.97y | Spec=C5,4-C6,4 | BV=+4.32 | Color=deep red |)
 Located 1,300 light years away, this is also a variable star with multiple periods associated with it. B-V color index of +4.3 indicates this should appear quite red when viewed.

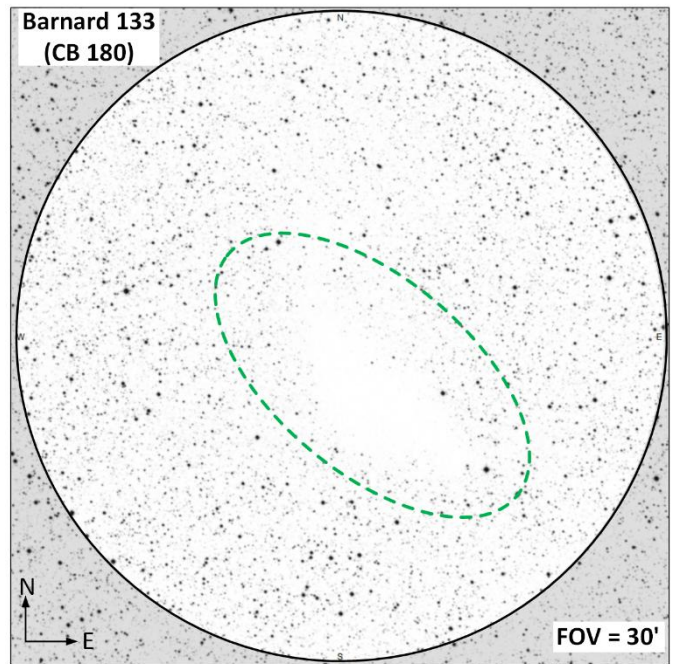
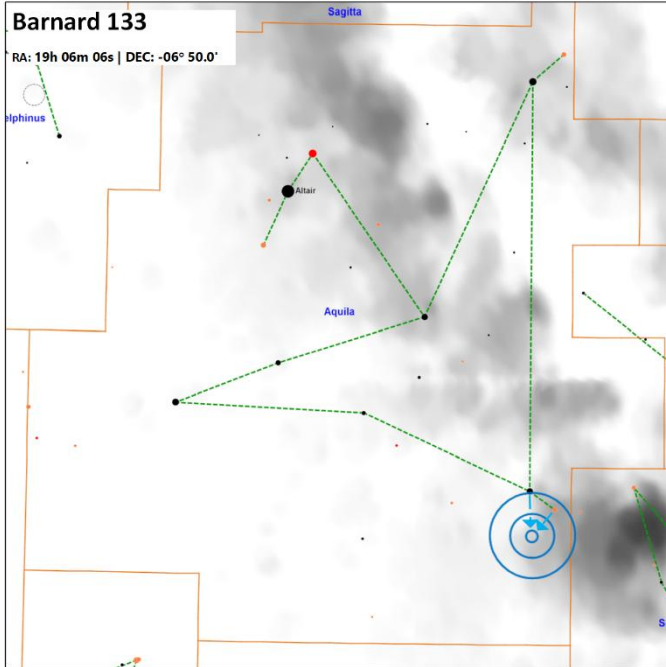


15 Aquilae (DS || AB | Mag=5.5,7 | Sep=39.3" | PA=210° | mBortle=9 | mApt=50mm | Spec=K1 III,? | Color=orange, orange |)
 This is an optical double star system that has been noted for its color. With a separation of 39" this may be a good target for both binoculars and telescopes.

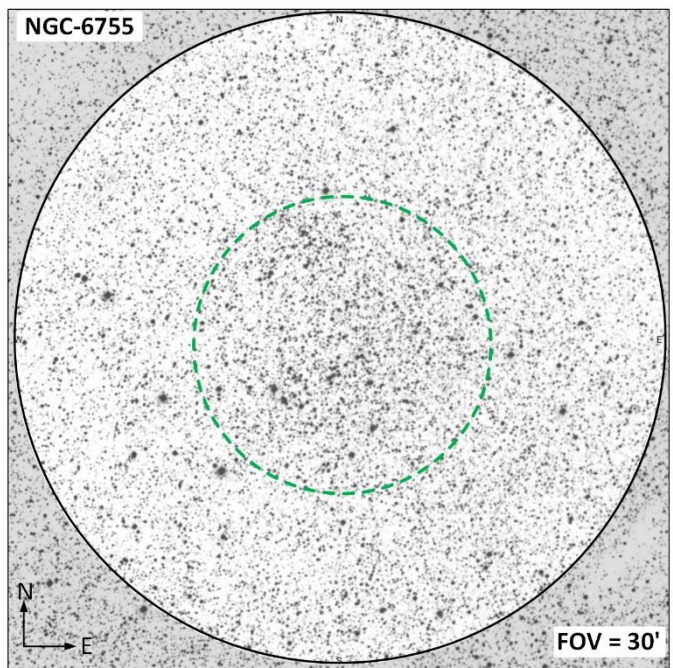
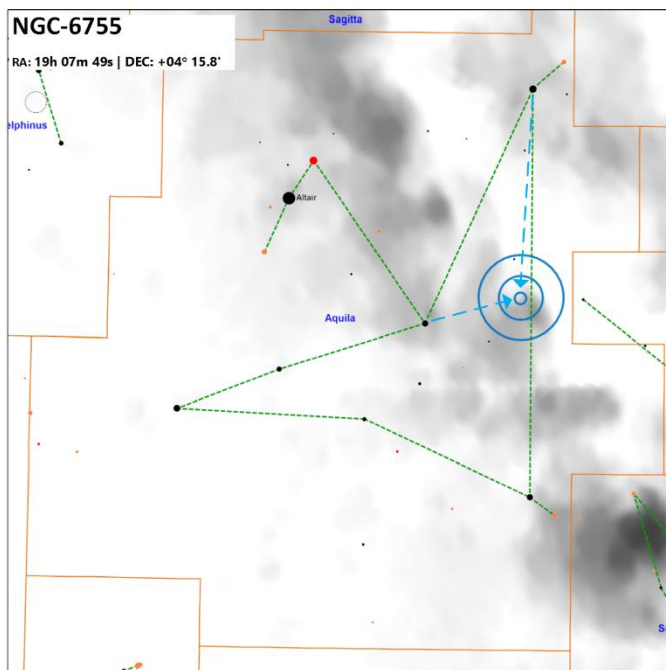


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Barnard 133 (DN || Size=10'x3' | mBortle=4 | mApt=100mm | Opacity=6 |) A kidney-shaped dust cloud. Opacity of 6 is the highest level of opacity rating for dark nebulae.

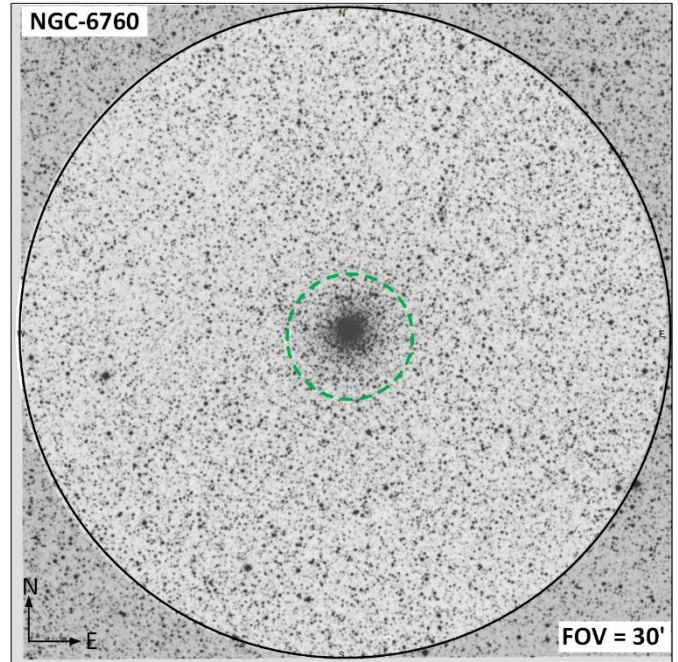
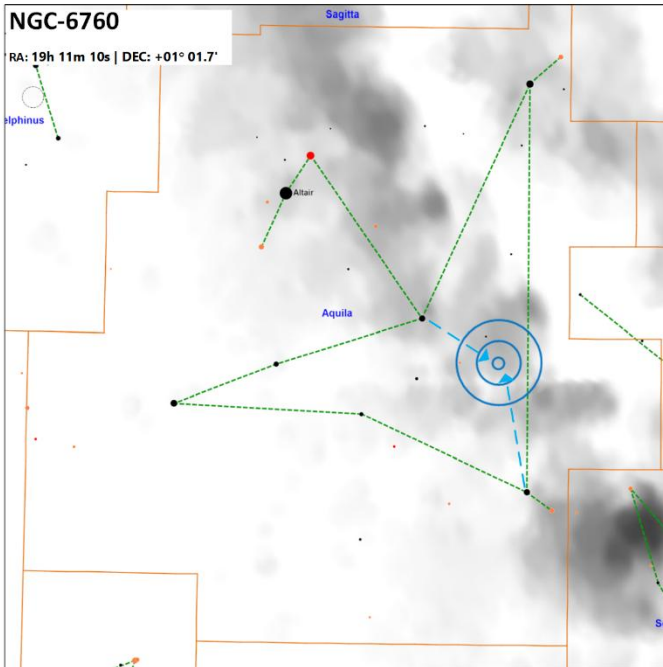


NGC-6755 (OC || Mag=7.5 | Size=14' | SB=21.9 | mBortle=9 | mApt=102mm | MC=II2r |) Located 8,060 light years away with an estimated age of 250 million years. Observationally there appear to be about 80 stars gathered into two unequal sections.

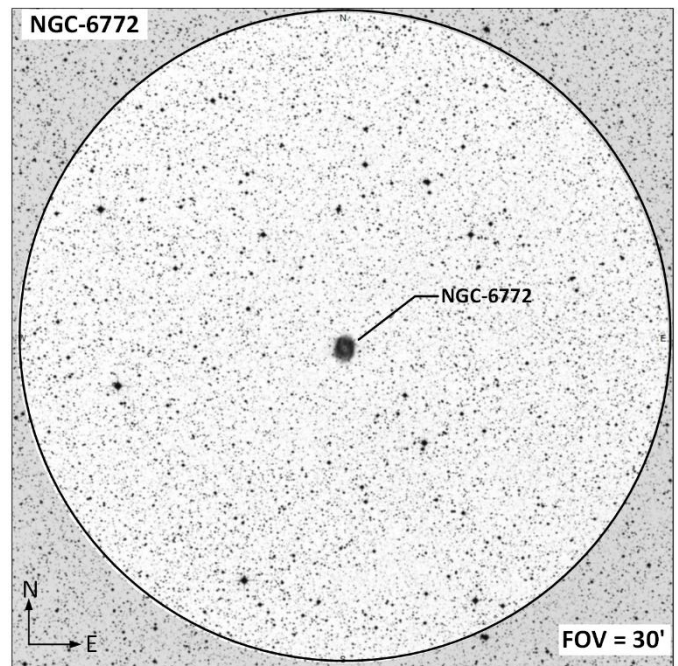
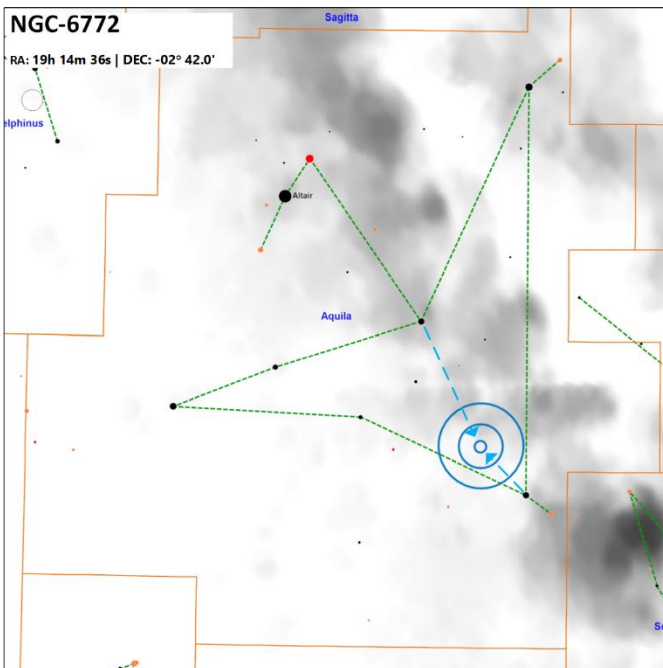


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NGC-6760 (GC || Mag=8.9 | Size=9.6' | SB=22.4 | mBortle=5 | mApt=50mm | MC=IX: |) This globular cluster is located 24,000 light years away and is classified as IX-Loose towards the center. It is suspected that this globular may have contributed to the formation of the open cluster Ruprecht 127 (currently located in Scorpius) when it passed through the galactic disk about 71 million years ago.

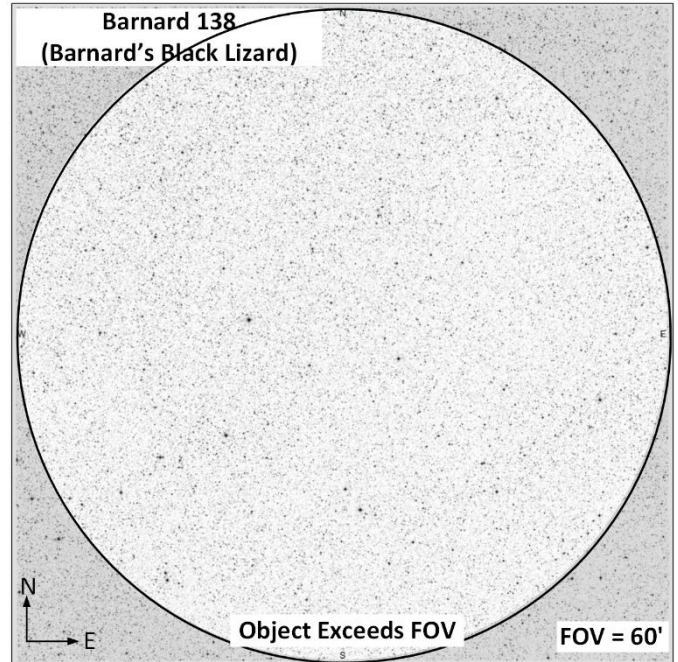
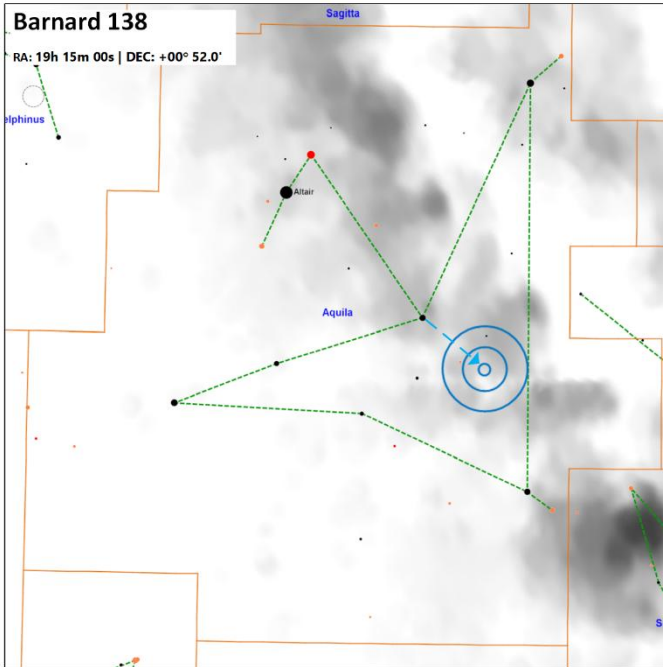


NGC-6772 (PN || Mag=12.7 | Size=1' | SB=21.3 | mBortle=3 | mApt=180mm | MC=Elliptical |) Located 4,485 light years away, with a physical diameter of 2 light years.

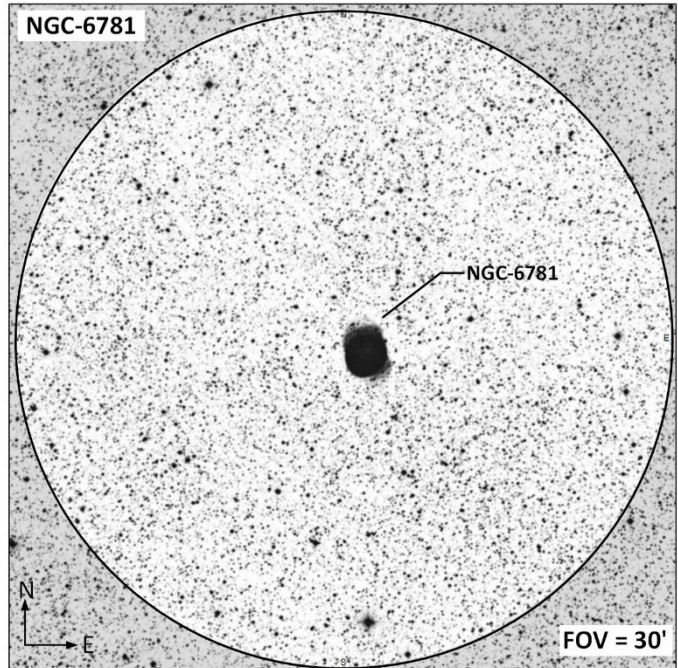
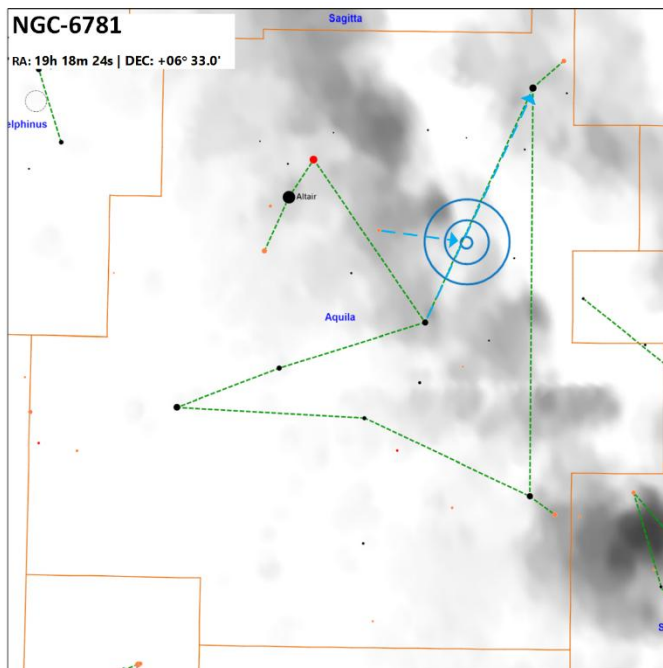


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Barnard 138 (DN || | Size=140'x20' | mBortle=4 | mApt=50mm | Opacity=2 |) Barnard's Black Lizard is an elongated dark nebula.

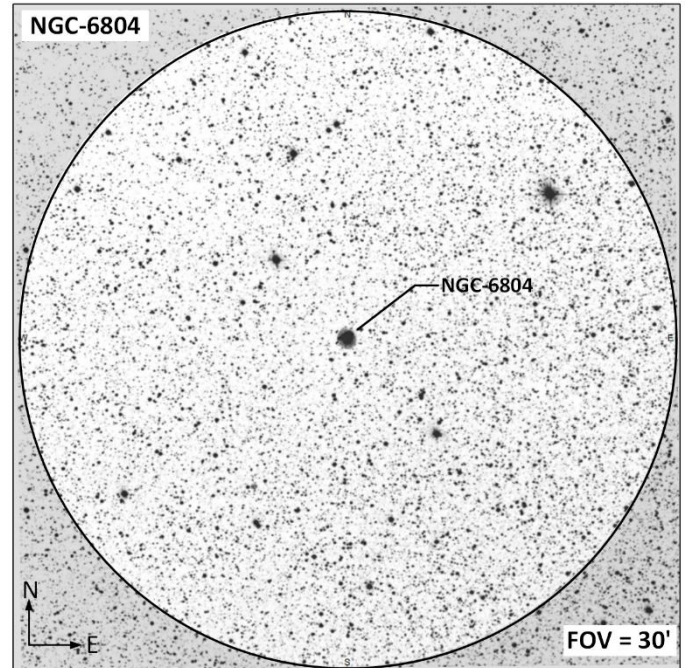
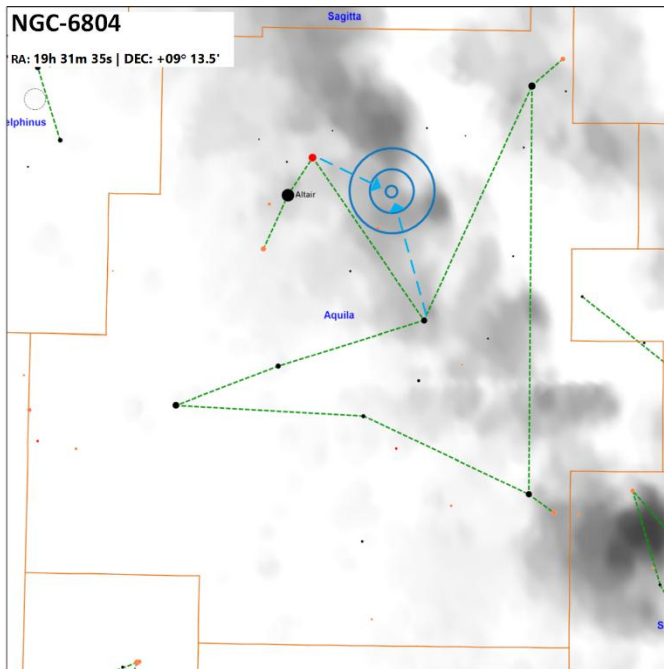


NGC-6781 (PN || Mag=11.4 | Size=1.8' | SB=21.3 | mBortle=6 | mApt=102mm | MC=Elliptical |) The Snowglobe Nebula is located 1,500 light years away. There is a 16.9 magnitude white dwarf centered in this nebula.

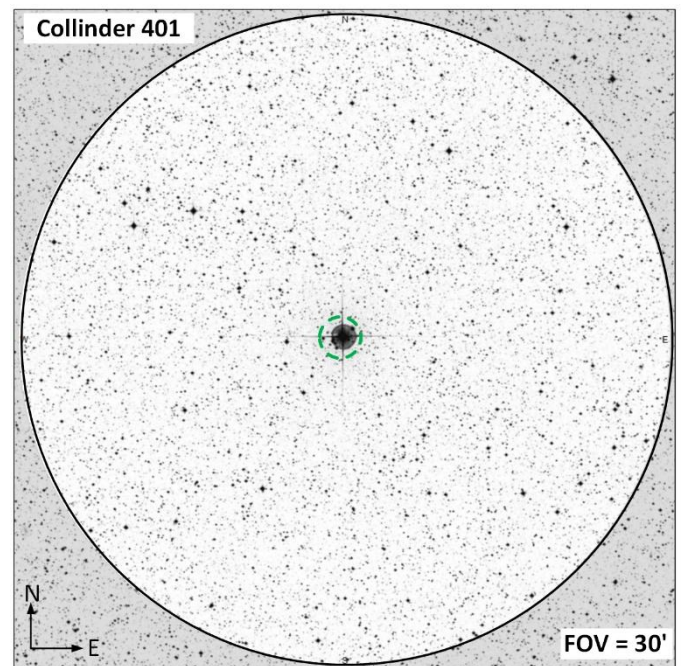
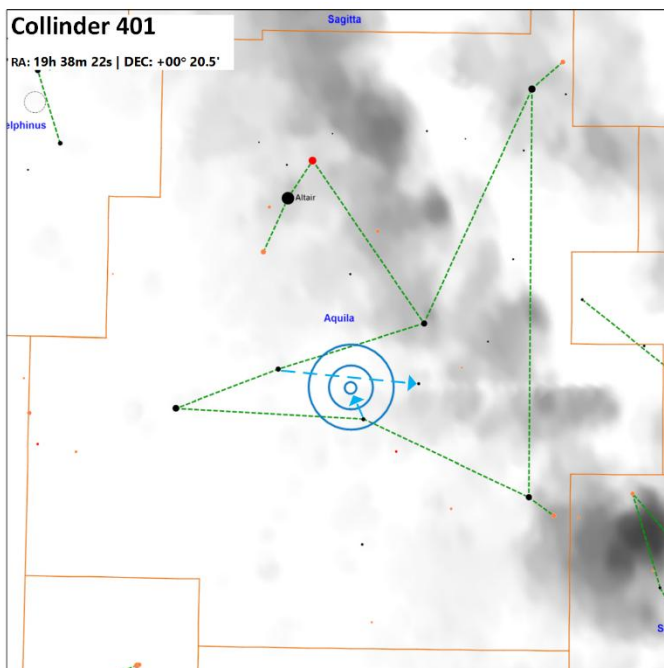


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NGC-6804 (PN || Mag=12.2 | Size=1.1' | SB=21.0 | mBortle=5 | mApt=130mm |) Located 4,700 light years away, this is reported to be a fairly bright planetary with a shape of a comet – this would require a high magnification to view.

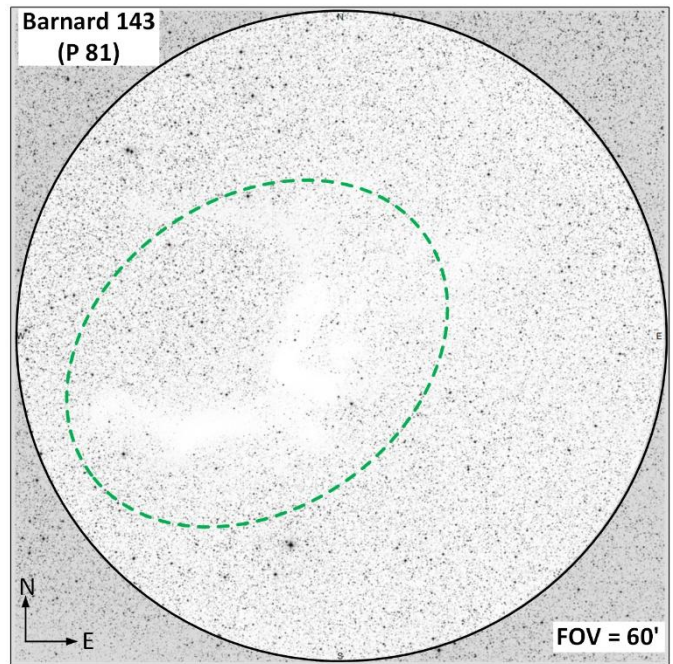
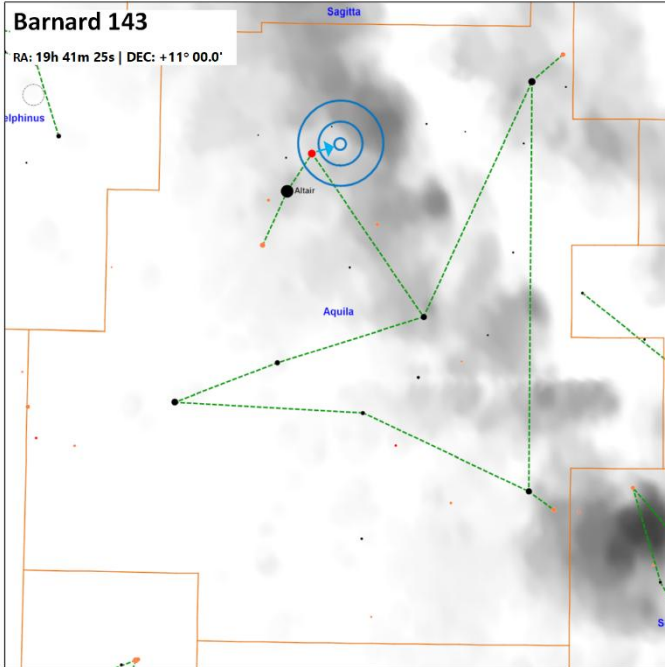


Collinder 401 (OC || Mag=7 | Size=1' | SB=15.6 | mBortle=9 | mApt=70mm | MC=IV2m |) This open cluster has a reported size of 1'; unusually small for an open cluster. Trumpler classification is IV-Not well detached, but a strong field concentration, 2-Medium range of brightness between stars in the cluster; m-Medium rich cluster with 50-100 stars.

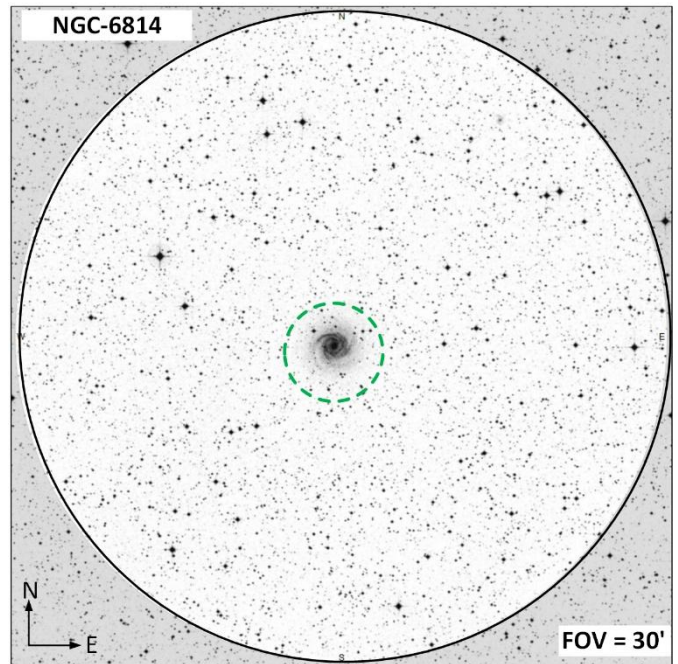
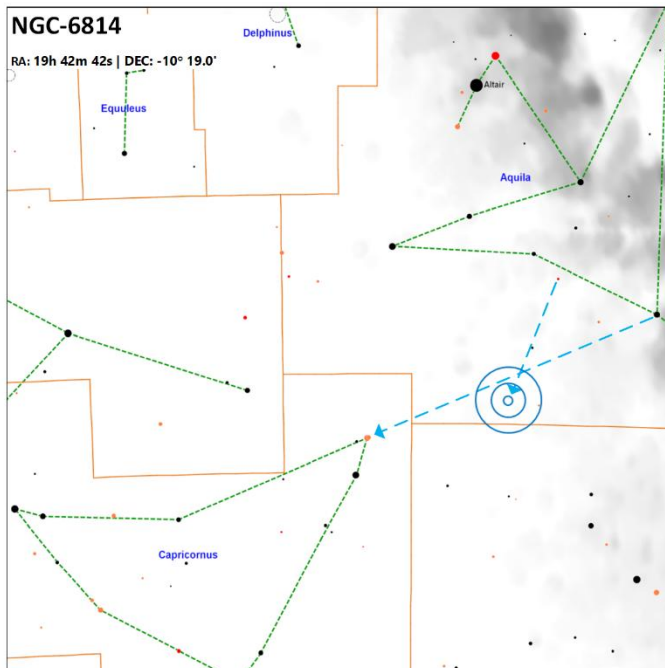


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Barnard 143 (DN || Size=30' | mBortle=4 | mApt=50mm | Opacity=6 |) This nebula was given its name due to its shape although it seems to be missing the central bar for the letter "E".

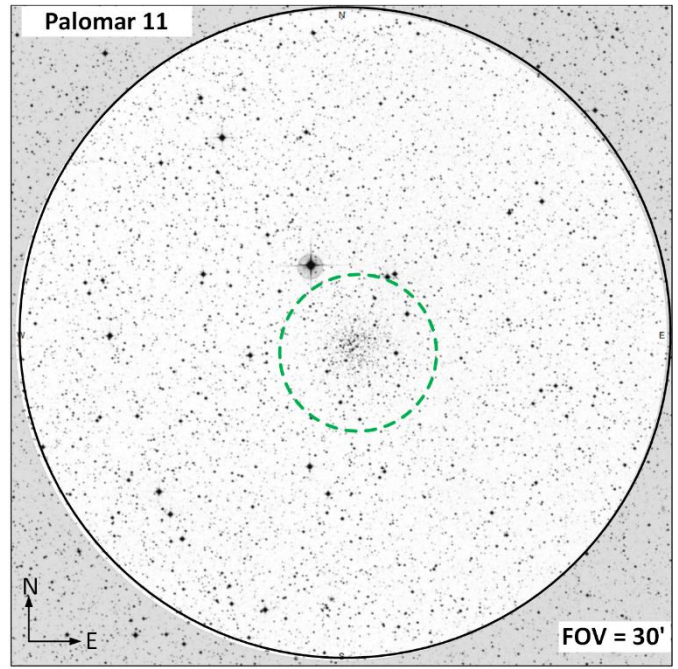
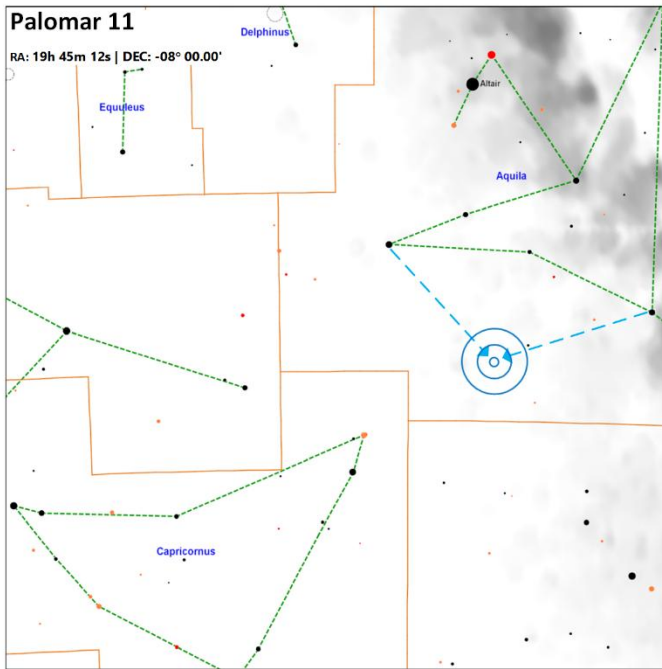


NGC-6814 (G || | Mag=12.1 | Size=3' | SB=23.1 | MC=SAB(rs)bc |) Located 75 million light years away, this galaxy has a physical diameter of 45,000 light years across. This is a type 1.5 [Seyfert galaxy](#) with an extremely bright nucleus.

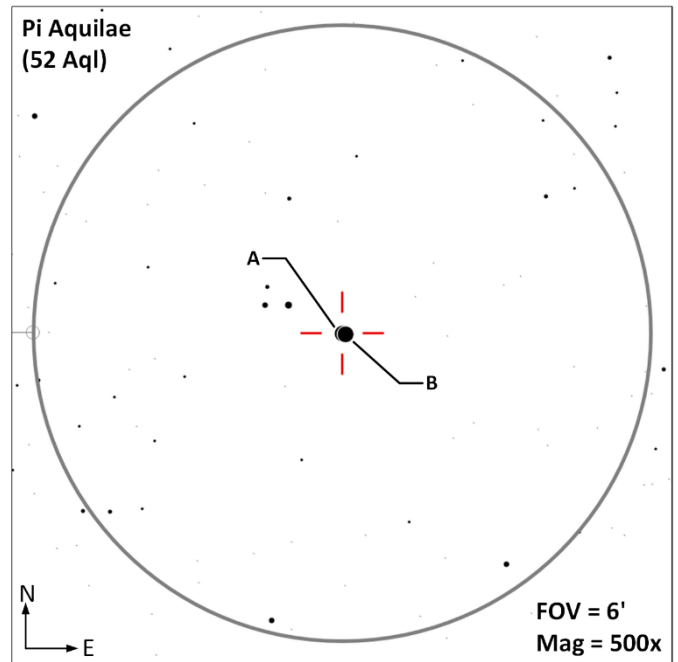
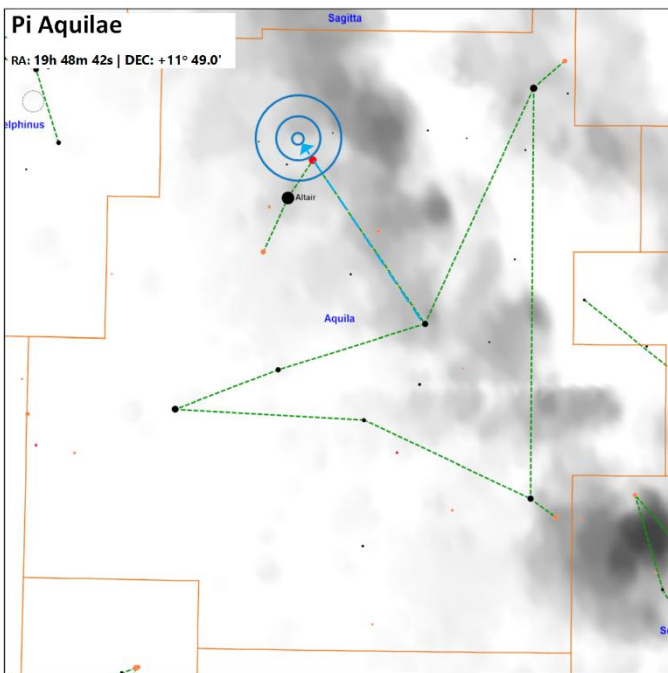


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Palomar 11 (GC || Mag=9.8 | Size=3.2' | SB=21.0 | mBortle=8 | mApt=50mm | MC=XI |) Located 41,000 light years away with a physical diameter of 36 light years. This globular cluster is classified as XI-Very loose towards the center.

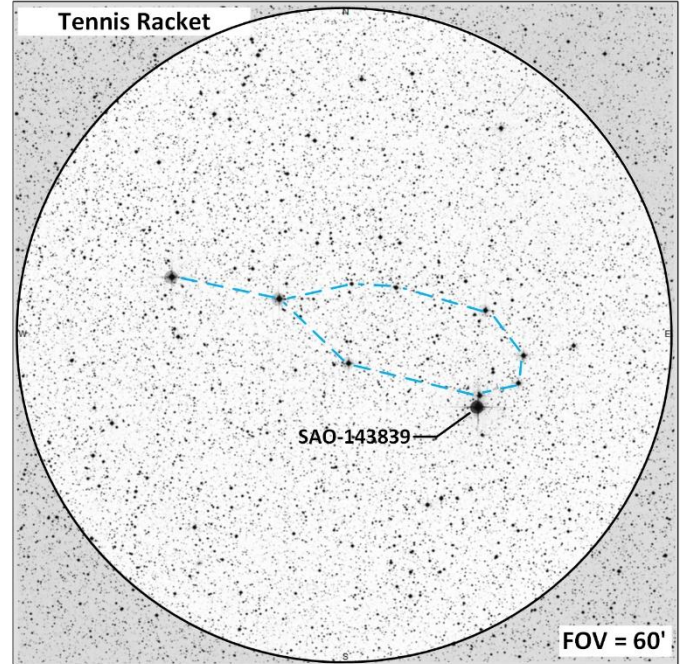
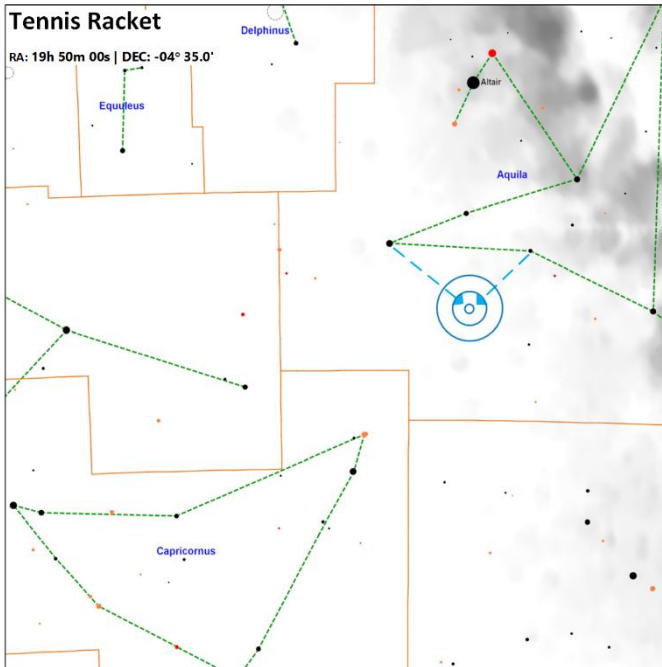


Pi Aquilae (DS | AB | Mag=6,6.8 | Sep=1.4" | PA=105° | mBortle=9 | mApt=102mm | Spec=A3V, F9III | Color=white, yellow-white |) 52 Aquilae is located 514 light years away. While the orbit of this system has not been determined, they are currently about 221 AU away from each other.

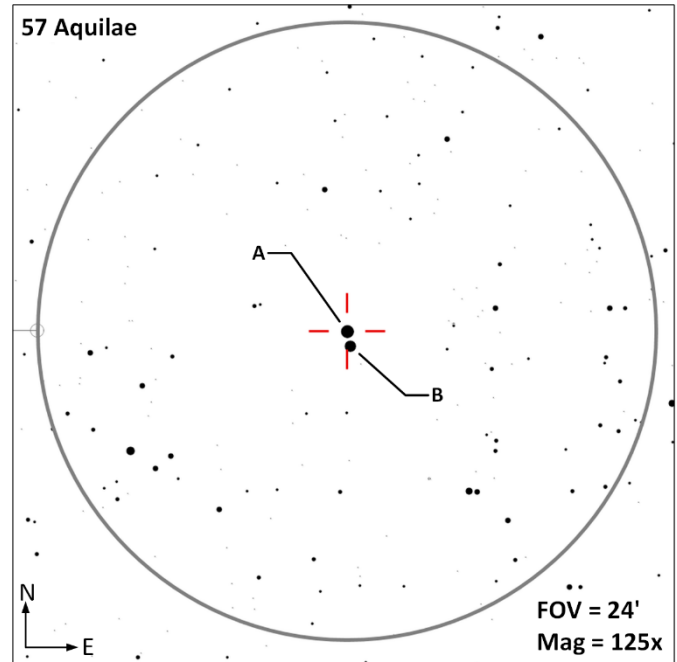
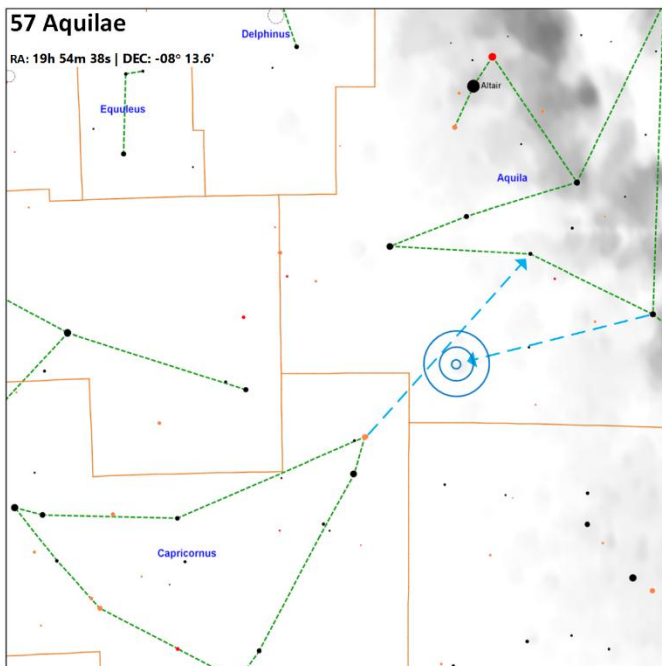


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Tennis Racket (AS || | Size=45' | Stars=9 | Ref Star: HD 187570; SAO-143839; HIP-97655 |) Two stars form the handle, six stars make up the racket and a bright blue star is the ball.

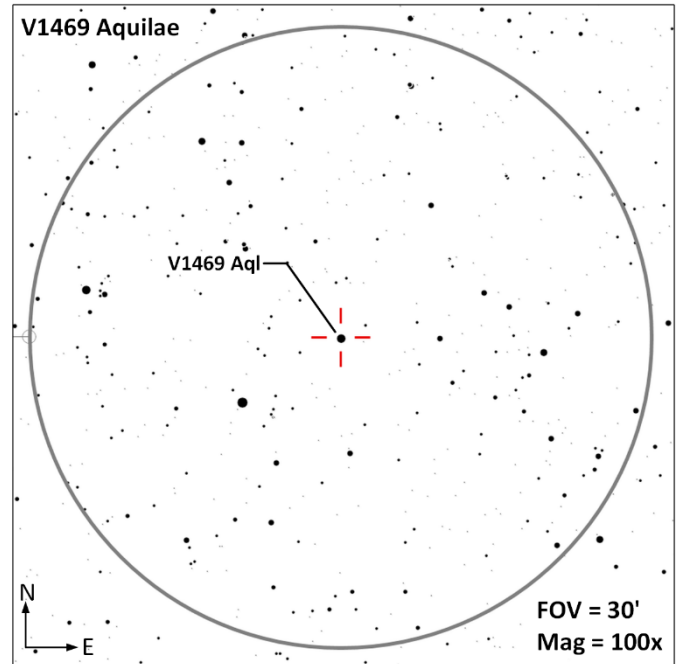
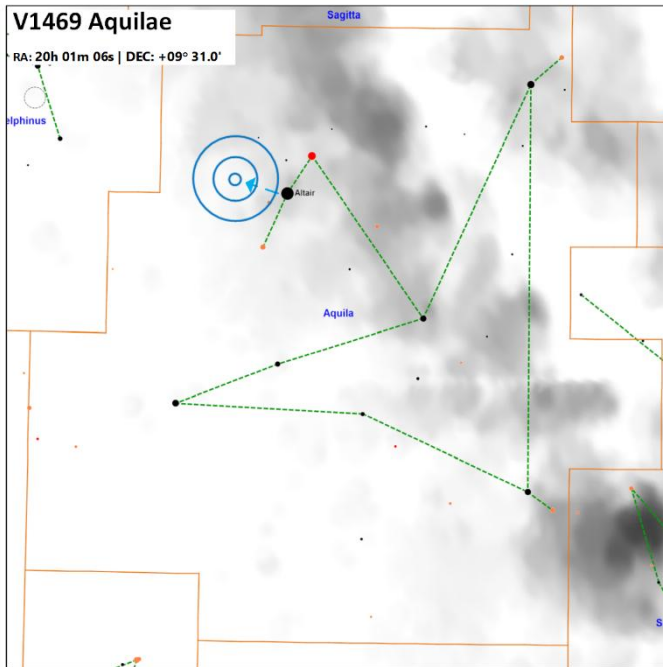


57 Aquilae (DS || AB | Mag=5.7,6.5 | Sep=36" | PA=170° | mBortle=9 | mApt=50mm | Spec=B7Vn, B8V | Color=blue-white, blue-white |) This star appears on the RASC colored doubles list and is an evenly matched pair (brightness) that should be a good target for both binoculars and telescopes.



Constellation Guide

V1469 Aquilae (CS || | Magnitude Range= 8.4 to 8.5 | Spec=C (N) | BV=+2.04 | Color=red |) This star appears on the RASC Carbon stars list. Located 843 light years away.



Constellation Guide
Observation Log: Aquila (Aql)

Equipment Config A: _____ Config B: _____

Notes: _____

Date	Time	Config	Target	Notes

Date	Time	Config	Target	Notes

Constellation Guide
Observation Log: Aquila (Aql)

Equipment Config A: _____ Config B: _____

Notes: _____

Date	Time	Config	Target	Notes

Date	Time	Config	Target	Notes

Constellation Guide

References, Resources and Tools used to create this document

The resources listed below were utilized to generate this document.

References

- Books
 - [Objects in the Heavens](#): Peter Birren
 - [Touring the Universe through Binoculars](#): Philip Harrington
 - [The Deep Sky](#): Philip Harrington
 - [Double and Multiple Stars and How to Observe Them](#): James Mullaney
 - Celestial Portraits: [Tom Polakis](#)
 - Star Clusters: Brent Archinal, Steve Hynes
 - Double Stars for Small Telescopes: Sissy Haas
 - [Sky Spot](#) Books
 - Bright Telescopic Objects: Brent Watson
 - Select Double Stars: Brent Watson
 - Overlooked Objects: Brent Watson
- Asterisms
 - Astronomical League: [Asterisms observing program](#) List
 - Asterisms: Demelza Ramakers
 - [Pattern Asterisms](#): John Chiravalle
 - Milwaukee Astronomical Society: [Binocular Asterisms](#)
 - Deep-Sky.co.uk: [Observing Asterisms](#) (David Ratledge)
- [Saguaro Astronomy Club](#)
 - Asterisms List
 - [110 Best of the NGC](#)
 - Red Stars List
- Online
 - [Wikipedia](#)
 - The Garden Astronomer: [Double, Multiple, and Special Star Observations List](#)
 - Sky & Telescope: [Colored Double Stars, Real and Imagined](#)
 - [In-The-Sky.org](#)
 - [Constellation-guide.com](#)
 - [Claude AI](#) – Some Stats for targets

Applications

- [SkyTools](#) 4.1 Visual Professional
- [AstroPlanner](#) Version 2.4
- [Cartes du Ciel](#) Version 4.3
- [Sky Safari](#) Pro 7
- Microsoft Office Home and Business 2021 - Word
- Microsoft Visio Professional 2021
- [IrfanView](#) Version 4.72