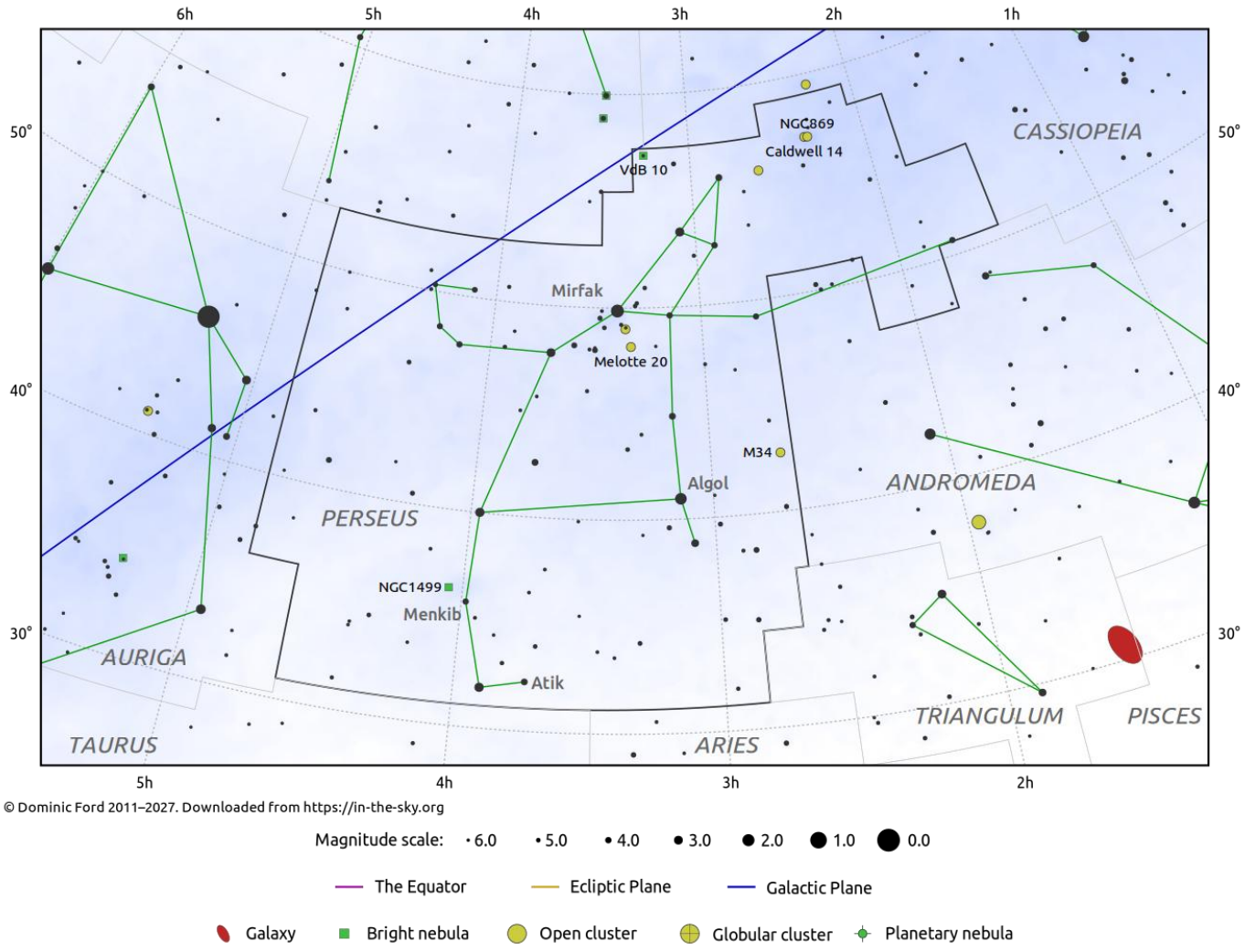
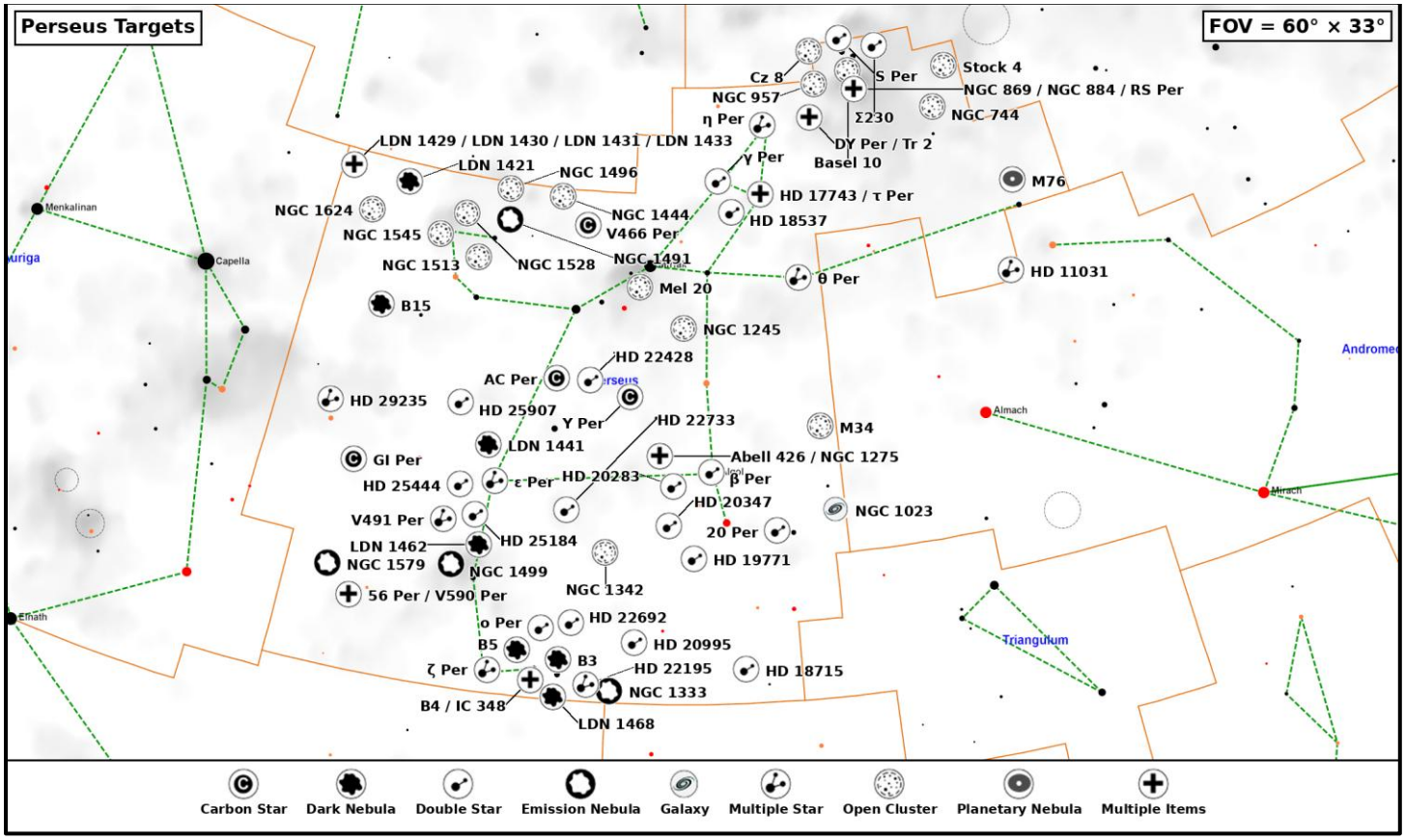
Constellation: Perseus (Per)

Evening Visibility: **October – December**
Opposition: **November**
Latitude Visibility: **+90° to -35°**
Online Information: | In-The-Sky.org | Constellation-guide.com |

In-The-Sky.org Constellation Map





Constellation Targets

Messier 76, HD 11031, Stock 4, NGC 744, Struve 230, Basel 10, NGC 869, NGC 884, RS Persei, S Persei, NGC 957, Czernik 8, DY Persei, Trumpler 2, NGC 1023, Messier 34, Theta Persei, Eta Persei, HD 17743, 20 Persei, Tau Persei, HD 18537, HD 18715, Gamma Persei, Beta Persei, HD 19771, NGC 1245, HD 20283, HD 20347, Melotte 20, Abell 426, NGC 1275, HD 20995, Y Persei, NGC 1333, Barnard 3, LDN 1468, ο Persei, Barnard 4, IC 348, Barnard 5, Zeta Persei, NGC 1342, HD 22195, HD 22428, HD 22692, HD 22733, V466 Persei, AC Persei, NGC 1444, Epsilon Persei, HD 25184, NGC 1499, LDN 1441, LDN 1462, NGC 1579, NGC 1491, HD 25444, NGC 1496, V491 Persei, HD 25907, NGC 1513, NGC 1528, NGC 1545, V590 Persei, 56 Persei, GI Persei, Barnard 15, LDN 1421, HD 29235, NGC 1624, LDN 1429, LDN 1431, LDN 1430, LDN 1433

Mythology/Back Story

In Greek mythology Perseus was the hero who rescued Andromeda from the sea monster Cetus. Perseus is one of the larger constellations in the northern sky. This constellation is in a rich part of the Milky Way and consists of a lot of targets. This constellation is also the radiant of the Perseid meteor shower, one of the best showers of the year peaking around August 12-13.

Constellation Guide

Constellation Highlights

This constellation is full of a lot of different types of objects.

- **M-76 (PN)** – The Little Dumbbell Nebula
- **Perseus Double Cluster (OC)** – NGC-869 & NGC 884. Great binocular and small telescope target
- **M-34 (OC)** – The Spiral Cluster
- **Beta Persei (DS)** – Algol, the Demon Star: an eclipsing binary that fades from 2.1 to 3.3 every 2.9 days.
- **NGC-1023 (G)** – This galaxy has a high surface brightness, so it should be easy to spot.
- **V466 Persei (CS)** – BV=+4.25 this should be red.

Constellation Targets Summary List

Object (Type)	Links	Gear	Aliases	Stats
Messier 76 (PN)	1	T	M-76; NGC-650; NGC-651; Little Dumbbell Nebula; Barbell Nebula; Cork Nebula; Apple Core Nebula; ARO 2; PK 130-10.1; PN G130.9-10.5; VV 6	| Mag=10.1 | Size=2.7'x1.8' | SB=20.4 | mBortle=9 | mApt=50mm | MC=Butterfly (bipolar) |
HD 11031 (MS-4)	1	B, T	SAO-037536; HIP-8475; HR 526; HD 11031; Σ-162; STF 162; ADS 1438; BD+47 508; WDS01493+4754	**AB** | Mag=6.5 / 7.2 | Sep=2" | PA=197° | mBortle=9 | mApt=60mm | RecMag=120x | Spec=A3V | Color=white | **AC** | Mag=6.5 / 9.2 | Sep=20.7" | PA=178° | mBortle=9 | mApt=50mm | RecMag=10x | Spec=A3V | Color=white | **AD** | Mag=6.5 / 10.0 | Sep=138.8" | PA=96° | mBortle=9 | mApt=50mm | RecMag=10x | Spec=A3V | Color=white |
Stock 4 (OC)		T	Lund 61; OCl 342; C 0149+568	| Mag=7.5 | Size=12' | SB=21.5 | mBortle=9 | mApt=102mm | MC=IV1p |
NGC 744 (OC)	1	T	NGC-744; Collinder 22; Lund 65; OCl 345; C 0155+552	| Mag=7.9 | Size=11' | SB=21.7 | mBortle=9 | mApt=114mm | MC=III1p |
Struve 230 (DS)	1	B, T	HD 13633; Σ-230; STF 230; WDS02149+5829; BD +57 522; ADS 1717	**AB** | Mag=7.9 / 9.4 | Sep=23.8" | PA=259° | mBortle=9 | mApt=50mm | RecMag=10x | Spec=B8III | Color=blue-white |
Basel 10 (OC)		T	Lund 40; OCl 349.1; C 0215+580	| Mag=9.9 | Size=2' | SB=20.0 | mApt=300mm | MC=II1p |
Perseus OB1 Association				
NGC 869 (OC)	1	B, T	NGC-869; Caldwell 14; C-14; Melotte 13; Mel-13; Perseus Double Cluster; Double Cluster; Cr 24; h Per; Collinder 24; Raab 10; OCISM 86; h Persei; OCl 350	| Mag=3.7 | Size=30' | SB=19.7 | mBortle=9 | mApt=50mm | MC=I3r |
NGC 884 (OC)	1	B, T	NGC-884; Caldwell 14; C-14; Melotte 14; Mel-14; Perseus Double Cluster; Double Cluster; Cr 25; Chi Persei; Levy-254;	| Mag=3.8 | Size=30' | SB=19.8 | mBortle=9 | mApt=50mm | MC=I3r |

Object (Type)	Links	Gear	Aliases	Stats
			Collinder 25; OCl 353; χ Persei; Chi Per Cluster; Raab 10	
RS Persei (CS, VS)	1	T	SAO-023257; HD 14488; GCVS630011; RS Per; BD +56 583; 2MASS J02222428+5706340; AAVSO 0215+56A	| Magnitude Range= 7.8 to 10.0 | Period=245d | Spec=M4Iab | BV=+2.27 | Color=orange-red |
S Persei (DS)	1, 2	B, T	SAO-023261; HIP-11093; HD 14528; S Per; GCVS630002; BD +57 552; BLL 7; WDS 02229+5835; AAVSO 0215+58	**AB** | Mag=7.9 / 11.4 | Sep=69.1" | PA=20° | mBortle=9 | mApt=102mm | RecMag=10x | Magnitude Range= 7.9 to 12.8 | Period=2.3y | Spec=M3Iae-M7 | BV=+2.46 | Color=orange-red |
NGC 957 (OC)	1	T	NGC-957; Collinder 28; Lund 84; OCl 362; C 0230+573	| Mag=7.6 | Size=10' | SB=21.2 | mBortle=9 | mApt=102mm | MC=III2m |
Czernik 8 (OC)		T	MWSC210; FSR597; OCL359; APOC4063; Cz8	| Mag=9.7 | Size=7' | SB=22.6 | mApt=250mm | MC=II2p |
DY Persei (CS, VS)	1	T	DY Per; 2MASS J02351713+5608446; AAVSO 0228+55; IRAS 02316+5555; TYC 3691-1782-1	| Magnitude Range= 10.5 to 16.0 | Period=2.2y | Spec=C4,5(R8) | BV=+2.00 | Color=orange-red |
Trumpler 2 (OC)	1	B, T	Rabbit; Tr-02; Tr 2; Collinder 29; Lund 88; OCl 365; C 0233+557	| Mag=5.9 | Size=17' | SB=20.7 | mBortle=9 | mApt=50mm | MC=II2p |
NGC 1023 (G)	1	T	NGC-1023; Perseus Lenticular Galaxy; UGC 2154; PGC 10123; MCG 6-6-73; MCG +06-06-073; Levy-68; CGCG 523-83; Arp 135; 2MASS 02402401+3903477	| Mag=9.5 | Size=8.7'x3.0' | SB=21.7 | mBortle=6 | mApt=50mm | MC=SB0 |
Messier 34 (OC)	1	B, T	M-34; NGC-1039; Melotte 17; Mel-17; Spiral Cluster; Star Eyed Susan; Cr 31; OCL 382; Collinder 31; Lund 91; Raab 13; C 0238+425	| Mag=5.5 | Size=35' | SB=21.8 | mBortle=9 | mApt=50mm | MC=II3r |
Theta Persei (MS-3)	1, 2	B, T	SAO-038288; HIP-12777; HR 799; HD 16895; θ Per; θ Persei; Theta Per; 13 Per; Σ-296; STF 296; ADS 2081; BD+48 746; FK5 93; WDS02442+4914; GJ 107; CCDM J02441+4913; IDS 02374+4848	**AB** | Mag=4.2 / 9.1 | Sep=21.2" | PA=305° | mBortle=9 | mApt=50mm | RecMag=10x | Period=2720y | Spec=F8V / M1.5 | Color=yellow-white / red | **AC** | Mag=4.2 / 11.1 | Sep=94.8" | PA=244° | mBortle=9 | mApt=80mm | RecMag=10x | Spec=F8V | Color=yellow-white |
Eta Persei (MS-3)	1, 2	B, T	SAO-023655; HIP-13268; Miram; HR 834; HD 17506; Eta Per; η Persei; η Per; 15 Per; 15 Persei; Σ-307; STF 307; ADS 2157; GC 3390; BD+55 714; FK5 99; WDS02507+5554; CCDM J02506+5553A; IDS 02434+5529 A; PPM 28039	**AB** | Mag=3.8 / 8.5 | Sep=27.1" | PA=301° | mBortle=9 | mApt=50mm | RecMag=10x | Spec=M3Ib-IIa / B9V | Color=red / blue-white | **AE** | Mag=3.8 / 9.2 | Sep=238.3" | PA=296° | mBortle=9 | mApt=50mm | RecMag=10x | Spec=M3Ib-IIa | Color=red |

Object (Type)	Links	Gear	Aliases	Stats
HD 17743 (DS)	1	T	SAO-023674; HIP-13424; HR 846; Σ-314; STF 314; ADS 2185; BD+52 640; WDS02529+5300; A 2906	**AB,C** | Mag=7.0 / 7.3 | Sep=1.6" | PA=317° | mBortle=9 | mApt=80mm | RecMag=150x | Spec=B8III | Color=blue-white |
20 Persei (DS)	1, 2	T	SAO-055975; HIP-13490; HR 855; HD 17904; 20 Per; Σ-318; STF 318; ADS 2200; BD+37 655; WDS02537+3820; BU 524	**AB,C** | Mag=5.4 / 9.7 | Sep=13.8" | PA=238° | mBortle=9 | mApt=50mm | RecMag=20x | Spec=F4IV | Color=yellow-white |
Tau Persei (DS)	1, 2	B, T	SAO-023685; HIP-13531; HR 854; HD 17878; HD 17879; Tau Per; τ Per; τ Persei; 18 Per; 18 Persei; BD +52 641; EDG 1; ADS 2202; WDS 02543+5246	**AB** | Mag=4.0 / 12.3 | Sep=51" | PA=107° | mBortle=6 | mApt=130mm | RecMag=10x | Magnitude Range= 3.9 to 4.1 | Period=4.2y | Spec=G4III / A4V | Color=yellow / white |
HD 18537 (DS)	1	T	SAO-023763; HIP-14043; HR 890; Σ-331; STF 331; ADS 2270; BD+51 665; WDS03009+5221	**AB** | Mag=5.2 / 6.2 | Sep=11.8" | PA=85° | mBortle=9 | mApt=50mm | RecMag=20x | Spec=B7V / B9V | Color=blue-white / blue-white |
HD 18715 (DS)	1	T	SAO-056095; HIP-14081; Σ-336; STF 336; WDS03015+3225; BD +31 526; ADS 2286	**AB** | Mag=7.0 / 8.3 | Sep=8.7" | PA=8° | mBortle=9 | mApt=50mm | RecMag=30x | Spec=G5IV | Color=yellow |
Gamma Persei (DS)	1, 2	B, T	SAO-023789; HIP-14328; Al Fakhbir; Alphecher; HR 915; HD 18925; γ Per; γ Persei; Gamma Per; 23 Per; 23 Persei; HJ2170; ADS 2324; BD+52 654; FK5 108; WDS03048+5330; CCDM J03048+5331AP; GC 3664; IDS 02576+5307 AP; PPM 28201	**AB** | Mag=2.9 / 10.8 | Sep=55.2" | PA=329° | mBortle=9 | mApt=70mm | RecMag=10x | Magnitude Range= 2.9 to 3.2 | Period=14.6y | Spec=G8III / A2V | Color=yellow / white |
Beta Persei (DS)	1, 2	B, T	SAO-038592; HIP-14576; Algol; Head of Medusa; Demon Star; Gorgonea Prima; Gorgona; El Ghoul; HR 936; HD 19356; Bet Per; β Per; β Persei; Beta Per; 26 Per; 26 Persei; Levy-100; BD +40 673; BU 526; ADS 2362; WDS 03082+4057; FK5 111; GC 3733; PPM 45864	**AB** | Mag=2.1 / 12.7 | Sep=59.4" | PA=156° | mBortle=4 | mApt=150mm | RecMag=10x | Magnitude Range= 2.1 to 3.3 | Period=2.9d | Spec=B8V | Color=blue-white |
HD 19771 (DS)	1	T	SAO-056241; HIP-14886; Σ-360; STF 360; WDS03122+3713; BD +36 650; ADS 2390	**AB** | Mag=8.0 / 8.3 | Sep=3" | PA=124° | mBortle=9 | mApt=50mm | RecMag=80x | Period=871y | Spec=G0 | Color=yellow |
NGC 1245 (OC)	1	B, T	NGC-1245; Melotte 18; Mel-18; Patrick Starfish Cluster; Collinder 38; Lund 103; OCl 389; Raab 14; C 0311+470	| Mag=8.4 | Size=10' | SB=22.0 | mBortle=5 | mApt=130mm | MC=II2r |
HD 20283 (DS)	1	T	SAO-038700; HIP-15282; HR 979; Σ-369; STF 369; ADS 2443; BD+39 743; WDS03171+4029	**AB** | Mag=6.8 / 7.7 | Sep=3.6" | PA=30° | mBortle=9 | mApt=50mm | RecMag=70x | Spec=B9VpSi | Color=blue-white |

Object (Type)	Links	Gear	Aliases	Stats
HD 20347 (DS)	1	T	SAO-056320; HIP-15329; OΣ53; WDS03177+3838; STT53; BD +38 689; ADS 2446	**AB** | Mag=7.7 / 8.5 | Sep=0.6" | PA=237° | mApt=200mm | RecMag=300x | Period=113y | Spec=G0 | Color=yellow |
Melotte 20 (OC)	1	B	Mel-20; Alpha Persei Cluster; Alpha Persei Moving Group; Little Cloud of Pirates; Collinder 39; OCL392; Cr 39; Lund106; Perseus OB3 Association; OCl 392.0; C 0318+484; Per OB3	| Mag=1.2 | Size=300' | SB=22.2 | mBortle=9 | mApt=50mm | MC=III3m |
Perseus Galaxy Cluster				
Abell 426 (GCl)	1	B, T	NGC-1275 Cluster; Perseus Cluster; Perseus Galaxy Cluster; Great Perseus-Andromeda Stratum; ACO-426; LGG 88; Levy-333	| Mag=12.5 | Size=30' | SB=28.5 |
NGC 1275 (G)	1	T	NGC-1275; Caldwell 24; C-24; Perseus A; UGC 2669; PGC 12429; MCG 7-7-63; CGCG 540-103; IRAS 03164+4119; 2MASS 03194823+4130420; 3C84	| Mag=11.6 | Size=2.2'x1.7' | SB=21.7 | mBortle=4 | mApt=114mm | MC=cD pec |
HD 20995 (DS)	1	T	SAO-056419; HIP-15876; HR 1019; Σ-382; STF 382; ADS 2514; BD+33 636; WDS03245+3332	**AB** | Mag=5.8 / 9.3 | Sep=4.7" | PA=153° | mBortle=9 | mApt=102mm | RecMag=50x | Spec=A0V | Color=white |
Y Persei (CS, VS)		T	HIP-16126; HD 21280; Y Per; BD +43 726	| Magnitude Range= 8.1 to 11.3 | Period=253d | Spec=C4,3e(R4e) | BV=+2.52 | Color=red |
Perseus Molecular Cloud				
NGC 1333 (RN)	1	T	NGC-1333; Embryo Nebula; Phantom Tiara Nebula; Levy 44; LBN 741; Ced 16; GN 03.26.1	| Mag=5.6 | Size=6'x3' | SB=17.4 |
Barnard 3 (DN)		B, T	B-3	| Size=20' | mBortle=4 | mApt=50mm | Opacity=5 |
LDN 1468 (DN)		T		| Size=11.7' | mBortle=4 | mApt=50mm | Opacity=5 |
o Persei (DS)	1, 2	B, T	SAO-056646; HIP-17313; HR 1123; HD 22951; 40 Per; 40 Persei; Σ-431; STF 431; ADS 2699; BD+33 698; WDS03424+3358; GC 4420; CCDM J03424+3358A	**AB** | Mag=5.0 / 10.0 | Sep=19.9" | PA=239° | mBortle=9 | mApt=50mm | RecMag=10x | Spec=B1.5IV | Color=blue-white |
Barnard 4 (DN)		B, T	B-4; LDN 1470	| Size=45'x45' | mBortle=4 | mApt=50mm | Opacity=5 |
IC 348 (OC, EN)	1	T	Collinder 41; OCl 409; OCl SM 99; C 0341+321	| Mag=7.3 | Size=10' | SB=20.9 | mBortle=9 | mApt=80mm | MC=III2pn |
Barnard 5 (DN)	1	B	B-5; LDN 1471	| Size=60' | mBortle=4 | mApt=50mm | Opacity=5 |

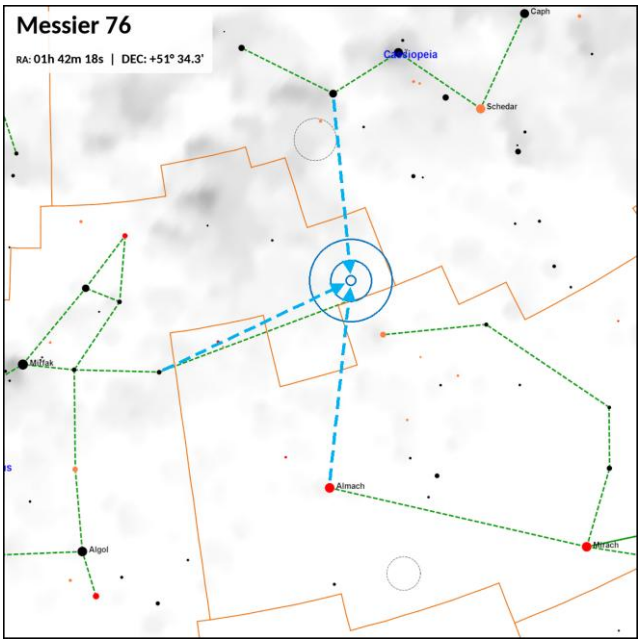
Object (Type)	Links	Gear	Aliases	Stats
Zeta Persei (MS-5)	1, 2	B, T	SAO-056799; HIP-18246; HR 1203; HD 24398; ζ Per; Zeta Per; ζ Persei; 44 Per; Σ-464; STF 464; ADS 2843; BD+31 666; FK5 144; WDS03541+3153	**AB** | Mag=2.9 / 9.2 | Sep=12.8" | PA=208° | mBortle=9 | mApt=60mm | RecMag=20x | Spec=B1Ib / B8V | Color=blue-white / blue-white | **AC** | Mag=2.9 / 11.2 | Sep=33.3" | PA=286° | mBortle=9 | mApt=80mm | RecMag=10x | Spec=B1Ib | Color=blue-white | **AD** | Mag=2.9 / 10.4 | Sep=98.6" | PA=195° | mBortle=9 | mApt=60mm | RecMag=10x | Spec=B1Ib | Color=blue-white | **AE** | Mag=2.9 / 10.0 | Sep=120" | PA=186° | mBortle=9 | mApt=50mm | RecMag=10x | Spec=B1Ib | Color=blue-white |
NGC 1342 (OC)	1	B, T	NGC-1342; Melotte 21; Mel-21; Stingray Cluster; Little Scorpion Cluster; Sea Robin Cluster; Collinder 40; Lund 110; OCl 401; Raab 15; C 0328+371	| Mag=6.7 | Size=20' | SB=21.8 | mBortle=9 | mApt=60mm | MC=III2m |
HD 22195 (MS-3)	1	B, T	SAO-056569; HIP-16757; HD 22195; β533; WDS03356+3141; BU533; BD +31 619; ADS 2628	**AB** | Mag=7.6 / 7.7 | Sep=1" | PA=220° | mBortle=9 | mApt=130mm | RecMag=240x | Spec=F4V | Color=yellow-white | **AC** | Mag=7.6 / 9.2 | Sep=225" | PA=294° | mBortle=9 | mApt=50mm | RecMag=10x | Spec=F4V | Color=yellow-white |
HD 22428 (DS)	1	B, T	SAO-039005; HIP-16972; WDS03383+4448; S430; BD +44 757	**AB** | Mag=7.2 / 7.5 | Sep=41.1" | PA=96° | mBortle=9 | mApt=50mm | RecMag=10x | Spec=A0 | Color=white |
HD 22692 (DS)	1	T	SAO-056613; HIP-17129; Σ-425; STF 425; WDS03401+3407; BD +33 690; ADS 2668	**AB** | Mag=7.5 / 7.6 | Sep=1.9" | PA=58° | mBortle=9 | mApt=70mm | RecMag=130x | Spec=F9V | Color=yellow-white |
HD 22733 (DS)	1	B, T	SAO-056623; HIP-17190; Σ-426; STF 426; WDS03408+3907; BD +38 782; ADS 2677	**AB** | Mag=8.7 / 9.4 | Sep=19.6" | PA=341° | mBortle=9 | mApt=50mm | RecMag=10x | Spec=A7IV | Color=white |
V466 Persei (CS, VS)		T	HD 232820; GCVS630466; V466 Per; BD +51 762	| Magnitude Range= 7.6 to 9.1 | Spec=C5,5(N5) | BV=+4.25 | Color=deep red |
AC Persei (CS, VS)		T	GCVS630057; BD+44°788; AC Per	| Magnitude Range= 9.0 to 9.6 | Spec=C6,3(N3) | BV=+3.09 | Color=red |
NGC 1444 (OC)	1	T	NGC-1444; OCl 394; Collinder 43; C 0345+525	| Mag=6.6 | Size=4' | SB=18.2 | mBortle=9 | mApt=60mm | MC=IV1p |
Epsilon Persei (MS-3)	1, 2	B, T	SAO-056840; HIP-18532; Adid Australis; Áldu; HR 1220; HD 24760; Eps Per; ε Per; ε Persei; Epsilon Per; 45 Persei; 45 Per; Σ-471; STF 471; ADS 2888; GC	**AB** | Mag=2.9 / 8.9 | Sep=8.8" | PA=12° | mBortle=9 | mApt=80mm | RecMag=30x | Spec=B0.5V / A2V | Color=blue-white / white |

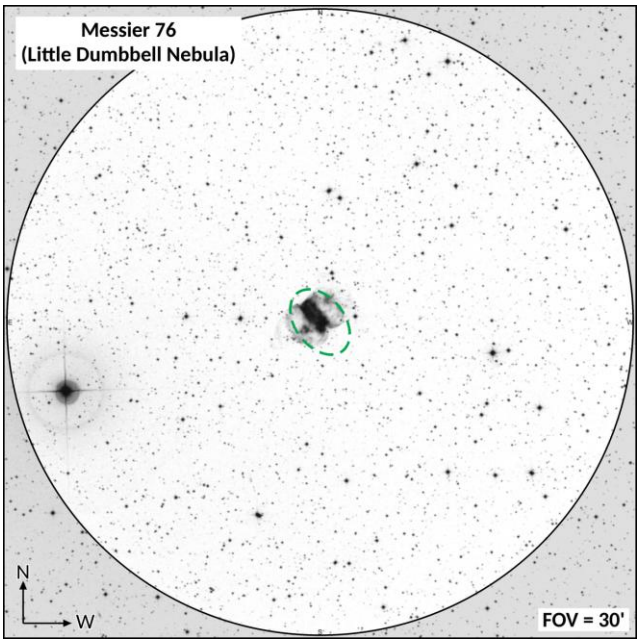
Object (Type)	Links	Gear	Aliases	Stats
			4759; BD+39 895; FK5 147; WDS03579+4001; PPM46661; Sky3570109	**AD** | Mag=2.9 / 9.3 | Sep=163.2" | PA=146° | mBortle=9 | mApt=50mm | RecMag=10x | Spec=B0.5V | Color=blue-white |
HD 25184 (DS)	1	B, T	SAO-056902; HIP-18793; Σ-476; STF 476; WDS04016+3840; BD +38 832; ADS 2932	**AB** | Mag=8.0 / 9.2 | Sep=25.9" | PA=289° | mBortle=9 | mApt=50mm | RecMag=10x | Spec=K2 | Color=orange |
California Molecular Cloud				
NGC 1499 (EN)	1	B	NGC-1499; Sh2-220; California Nebula; LBN 756	| Mag=6.0 | Size=144'x40' | SB=24.0 |
LDN 1441 (DN)		T		| Size=5.6' | mBortle=4 | mApt=50mm | Opacity=5 |
LDN 1462 (DN)		T		| Size=5.9' | mBortle=4 | mApt=50mm | Opacity=5 |
NGC 1579 (RN, EN)	1	T	NGC-1579; Sh2-222; Northern Trifid; Levy 50; LBN 766; LBN 767; Ced 35; DG 34; [B77] 70; [SS62] 19; [TP72] 12; LBN 165.38-08.73	| Mag=9.9 | Size=12'x8' | SB=23.5 |
NGC 1491 (EN)	1	T	NGC-1491; Sh2-206; Fossil Footprint Nebula; Little Pacman Nebula; Levy-49; LBN 704; LBN 706; Ced 25	| Mag=10.0 | Size=3' | SB=21.0 |
HD 25444 (DS)	1	T	SAO-056936; HIP-18986; Σ-483; STF 483; WDS04041+3931; BD +39 918; ADS 2959	**AB** | Mag=7.4 / 9.4 | Sep=1.6" | PA=50° | mBortle=9 | mApt=150mm | RecMag=150x | Period=440y | Spec=G5 | Color=yellow |
NGC 1496 (OC)		T	NGC-1496; Collinder 44; Lund 122; OCl 396; C 0400+524	| Mag=9.6 | Size=4' | SB=21.2 | mApt=250mm | MC=III2p |
V491 Persei (MS-3)	1	B, T	SAO-056982; HIP-19255; HD 25893; OΣ531; WDS04076+3804; STT531; BD +37 878; ADS 2992	**AB** | Mag=7.3 / 9.7 | Sep=2.9" | PA=353° | mBortle=9 | mApt=102mm | RecMag=80x | Period=590y | Spec=K1V | Color=orange | **AC** | Mag=7.3 / 8.8 | Sep=225.1" | PA=217° | mBortle=9 | mApt=50mm | RecMag=10x | Spec=K1V | Color=orange |
HD 25907 (DS)	1	B, T	SAO-039327; HIP-19287; WDS04080+4311; AG308; BD +42 896	**AB** | Mag=7.2 / 6.6 | Sep=130.1" | PA=70° | mBortle=9 | mApt=50mm | RecMag=10x | Spec=K0 | Color=orange |
NGC 1513 (OC)	1	T	NGC-1513; Collinder 46; Lund 125; OCl 398; C 0406+493	| Mag=8.4 | Size=10' | SB=22.0 | mBortle=5 | mApt=130mm | MC=II1m |
NGC 1528 (OC)	1	B, T	NGC-1528; Melotte 23; Mel-23; Collinder 47; Cr-47; Lund 126; OCl 397; Raab 16; C 0411+511	| Mag=6.4 | Size=23' | SB=21.8 | mBortle=9 | mApt=60mm | MC=II2m |
NGC 1545 (OC)	1	B, T	NGC-1545; Running Man Cluster; Magic Pentagram Cluster; Collinder 49; Lund 131; OCl 399; C 0417+501	| Mag=6.2 | Size=18' | SB=21.1 | mBortle=9 | mApt=50mm | MC=IV2p |
V590 Persei (DS)	1	B, T	SAO-057211; HIP-20570; HD 27770; Σ-533; STF 533;	**AB** | Mag=7.3 / 8.5 | Sep=19.7" | PA=62° | mBortle=9 | mApt=50mm | RecMag=10x |

Object (Type)	Links	Gear	Aliases	Stats
			WDS04244+3419; BD +33 851; ADS 3185	Magnitude Range= 7.2 to 7.4 | Period=5.7d | Spec=B8V | Color=blue-white |
56 Persei (DS)	1, 2	T	SAO-057216; HIP-20591; HR 1379; HD 27786; 56 Per; ADS 3188; BD+33 854; OΣ81; STT81; WDS04246+3358	**AB** | Mag=5.8 / 9.3 | Sep=4.2" | PA=13° | mBortle=9 | mApt=102mm | RecMag=60x | Spec=F4IV-V | Color=yellow-white |
GI Persei (CS, VS)		T	GCVS630192; GI Per	| Magnitude Range= 13.8 to 15.8 (photographic) | Period=400d | Spec=C7,4(N) | BV=+4.50 | Color=deep red |
Barnard 15 (DN)		T	B-15; LDN 1445; LM 34	| Size=13' | mBortle=4 | mApt=50mm | Opacity=5 |
LDN 1421 (DN)		T		| Size=3.2' | mBortle=4 | mApt=70mm | Opacity=5 |
HD 29235 (MS-3)	1	B, T	Σ-565; STF 565; WDS04381+4207; ADS 3338; Struve 565	**AB** | Mag=7.7 / 9.1 | Sep=1.4" | PA=167° | mBortle=9 | mApt=130mm | RecMag=170x | Spec=K0 | Color=orange | **AC** | Mag=7.7 / 10.3 | Sep=22.8" | PA=100° | mBortle=9 | mApt=50mm | RecMag=10x | Spec=K0 | Color=orange |
NGC 1624 (OC)	1	T	NGC-1624; Sh2-212; Tribble Nebula; Little Cocoon Nebula; Levy 8; Cr 53; OCL 403; LBN 722; Collinder 53; Lund 136; Mrk 11; OCl 403.0; C 0436+503	| Mag=11.8 | Size=5'x5' | SB=23.9 | MC=II1pn |
LDN 1429 (DN)		T		| Size=6.1' | mBortle=4 | mApt=50mm | Opacity=5 |
LDN 1431 (DN)		T		| Size=3.4' | mBortle=4 | mApt=70mm | Opacity=5 |
LDN 1430 (DN)		T		| Size=3.2' | mBortle=4 | mApt=70mm | Opacity=5 |
LDN 1433 (DN)		T		| Size=4.7' | mBortle=4 | mApt=50mm | Opacity=5 |

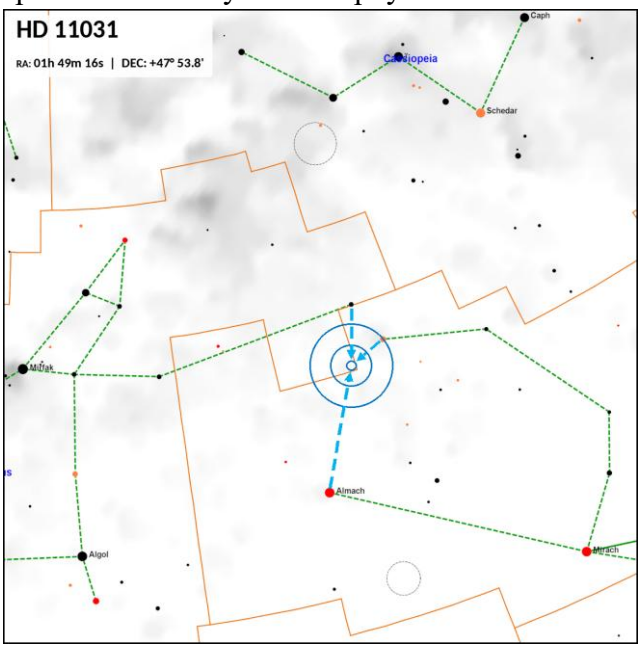
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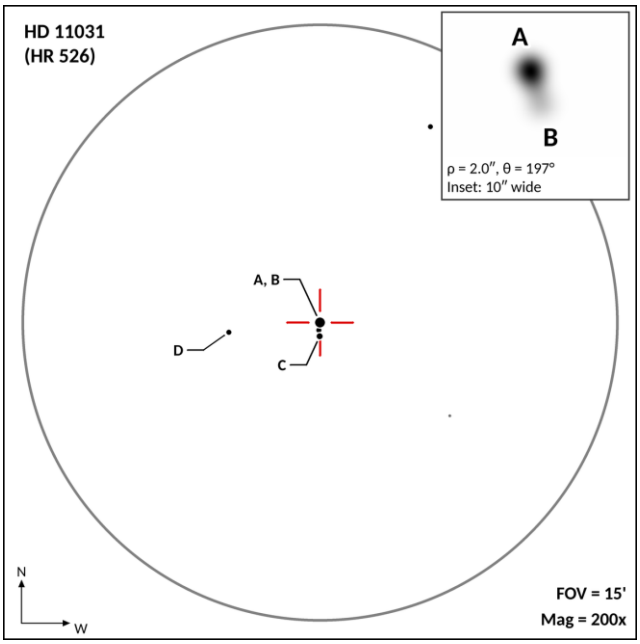
Messier 76 (PN || Mag=10.1 | Size=2.7'x1.8' | SB=20.4 | mBortle=9 | mApt=50mm | MC=Butterfly (bipolar) |) The Little Dumbbell Nebula is a bipolar planetary nebula composed of a ring (seen edge-on) and two lobes on either opening of the ring. Its name comes from its resemblance to the Dumbbell Nebula (M-27). This object was originally thought to be two separate nebulae and was given the identifiers NGC-650 and NGC-651 but has been recognized as a single object.



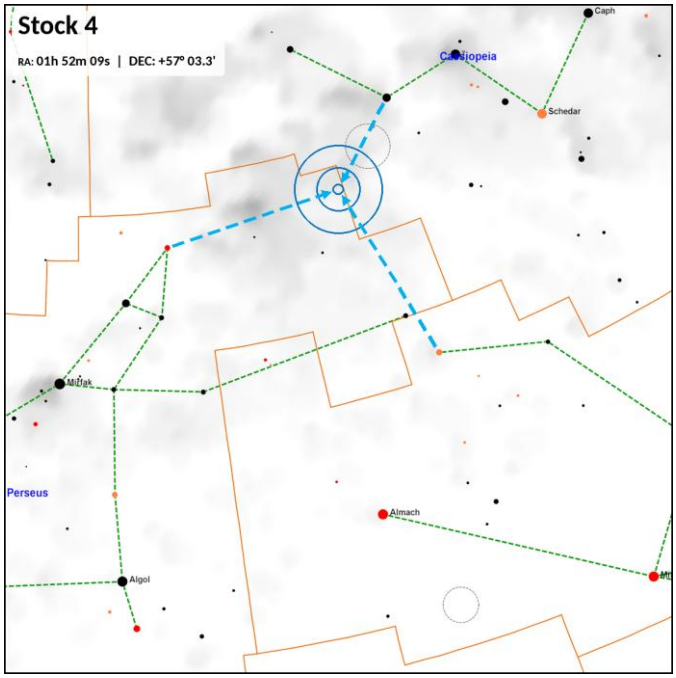


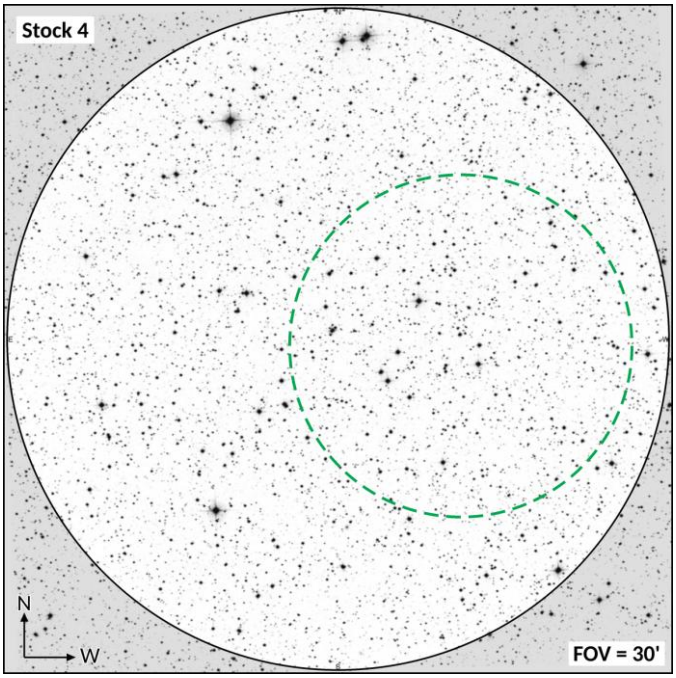
HD 11031 (MS-4 || **AB** | Mag=6.5 / 7.2 | Sep=2" | PA=197° | mBortle=9 | mApt=60mm | RecMag=120x | Spec=A3V | Color=white || **AC** | Mag=6.5 / 9.2 | Sep=20.7" | PA=178° | mBortle=9 | mApt=50mm | RecMag=10x | Spec=A3V | Color=white || **AD** | Mag=6.5 / 10.0 | Sep=138.8" | PA=96° | mBortle=9 | mApt=50mm | RecMag=10x | Spec=A3V | Color=white |) Located 420 light years away the AB and C components in this system are physical.



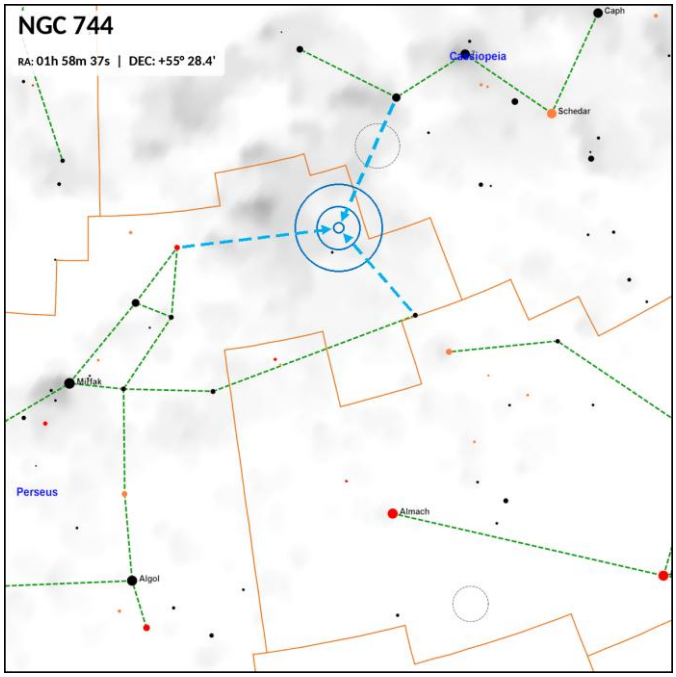


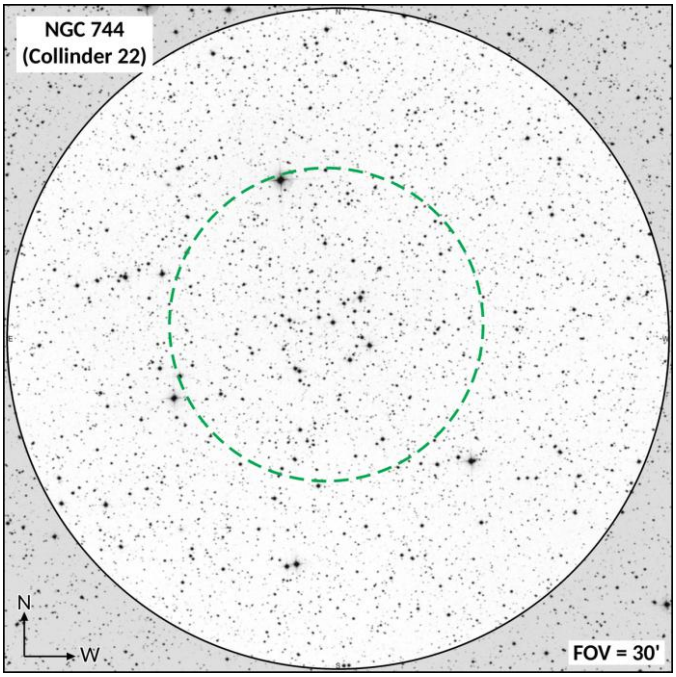
Stock 4 (OC || Mag=7.5 | Size=12' | SB=21.5 | mBortle=9 | mApt=102mm | MC=IV1p |) Located 3,900 light years away with an estimated physical diameter of 14 light years. Trumpler Class IV-Not well detached from the surrounding star field, 1-Small range of brightness between stars, p-Poor cluster with less than 50 stars.



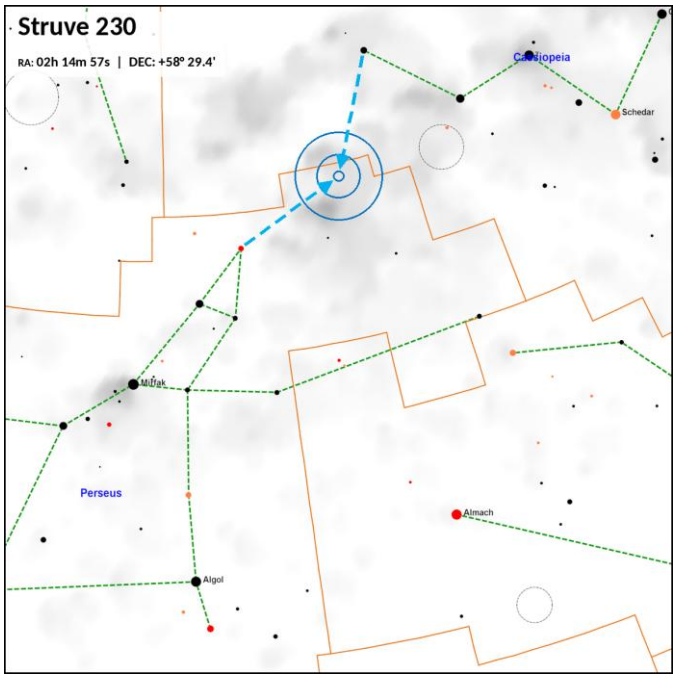


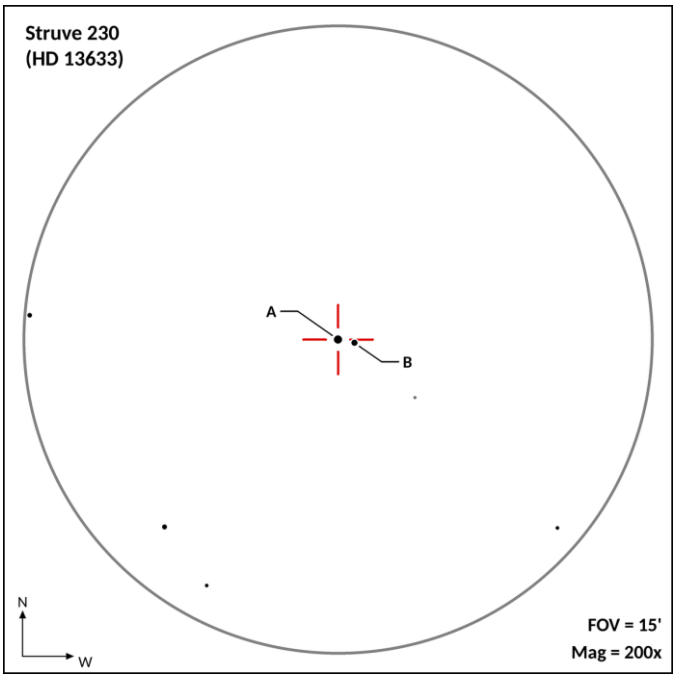
NGC 744 (OC || Mag=7.9 | Size=11' | SB=21.7 | mBortle=9 | mApt=114mm | MC=III1p |) A small open cluster. Trumpler Class III-Detached with no noticeable central concentration, 1-Small range of brightness between stars, p-Poor cluster with less than 50 stars.



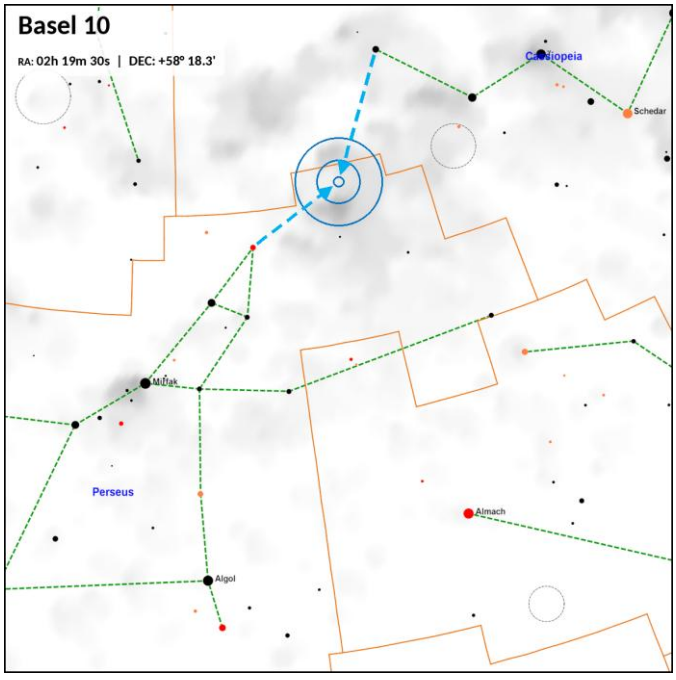


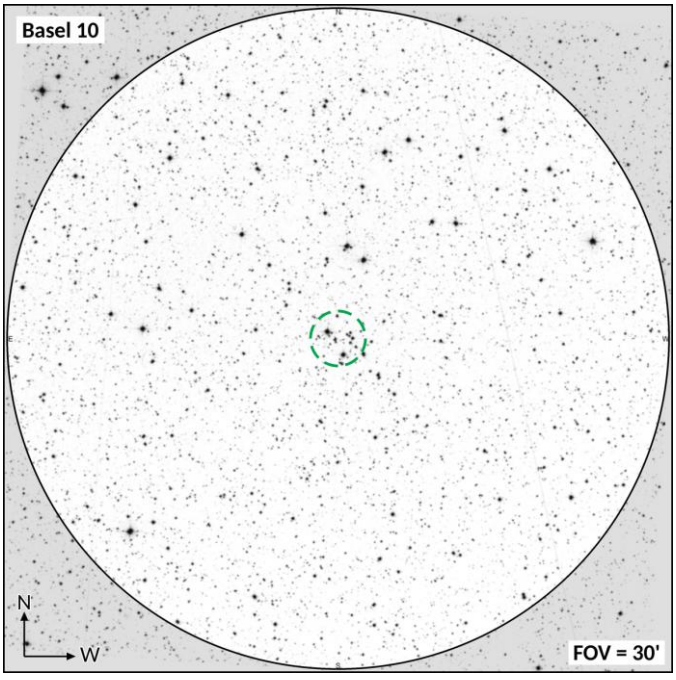
Struve 230 (DS || **AB** | Mag=7.9 / 9.4 | Sep=23.8" | PA=259° | mBortle=9 | mApt=50mm | RecMag=10x | Spec=B8III | Color=blue-white |) Located 2,100 light years away, this double is physical. The primary has a mass 5.2 times that of our Sun's.



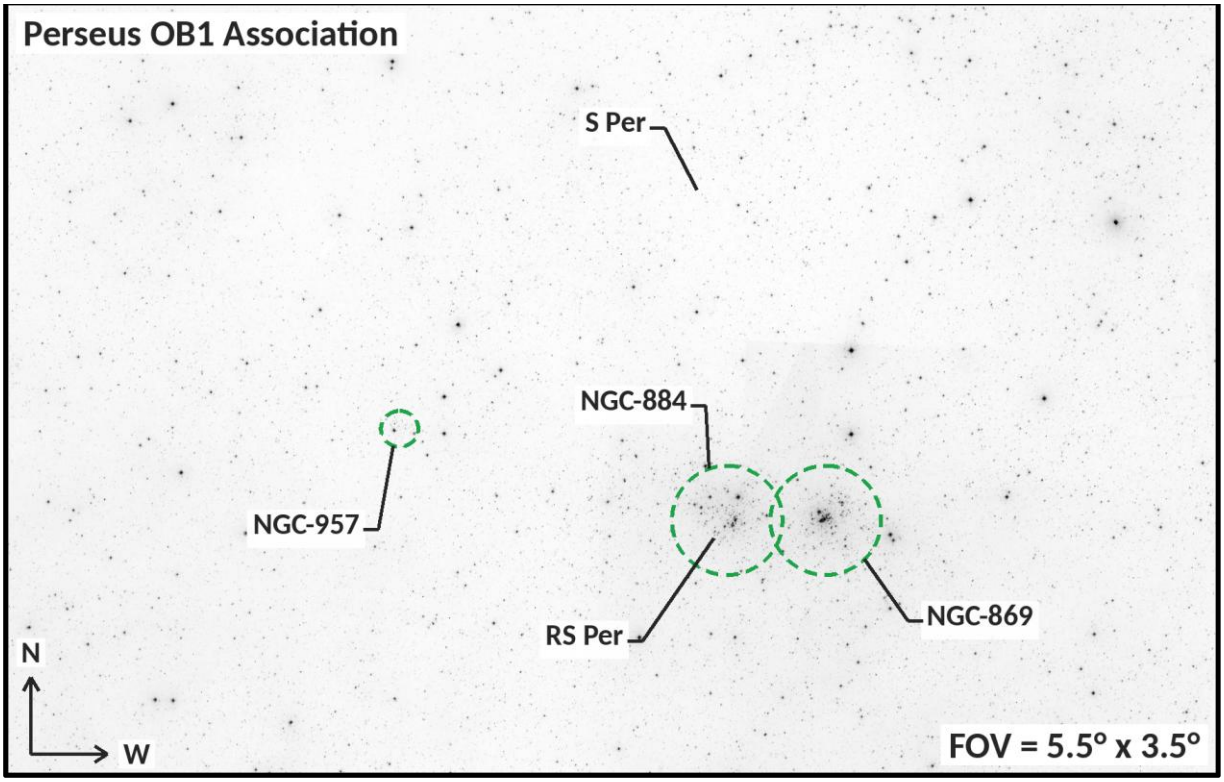


Basel 10 (OC || Mag=9.9 | Size=2' | SB=20.0 | mApt=300mm | MC=II1p |) Located 6,300 light years away with an estimated physical diameter of 3.7 light years. Trumpler Class II-Detached with little central concentration, 1-Small range of brightness between stars, p-Poor cluster with less than 50 stars.





Perseus OB1 Association



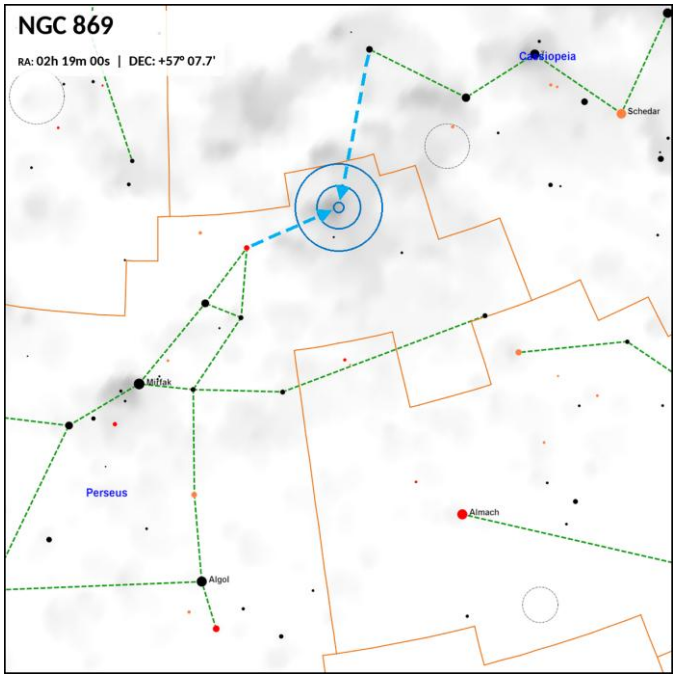
The Perseus OB1 Association region contains NGC 869, NGC 884, RS Persei, S Persei and NGC 957.

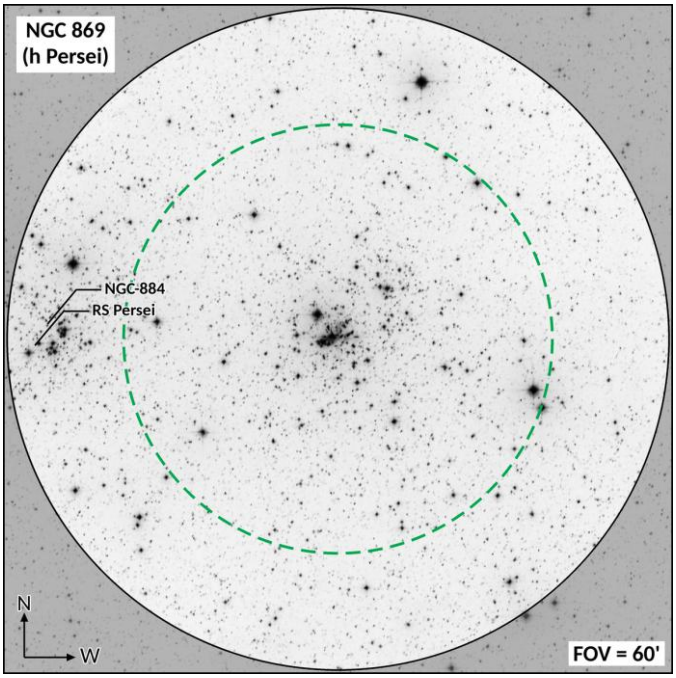
Perseus OB1 (Per OB1) is an OB association, a loose, gravitationally unbound family of young, massive stars that formed together and are slowly drifting apart. It is one of the richest in the Milky Way, with about 150 catalogued luminous members, including its brightest star, the blue supergiant 9 Persei, and one of the Galaxy's largest groups of red supergiants. It lies in, and gave its name to, the Perseus spiral arm, and spans a circle about 4° in radius, roughly 1,000 by 750 light years. Published distances disagree: about 6,000 light years for the association as a whole, 7,500 for the Double Cluster and 7,900 for S Persei.

The Double Cluster, NGC 869 (h Persei) and NGC 884 (χ Persei), has long been treated as the association's core; W. W. Morgan described the two clusters as its nuclei in 1953. Both are about 14 million years old. Some authors question whether the clusters are physically part of the association or simply share its line of sight in the same spiral arm. To the unaided eye the pair is a hazy patch; a low-power wide-field eyepiece shows both clusters in one view.

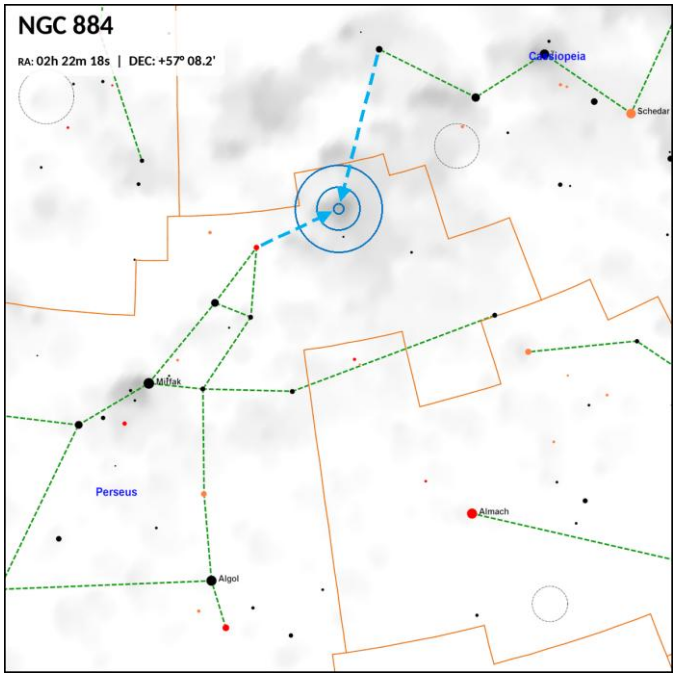
Of the guide's members, RS Persei is a red supergiant within NGC 884, S Persei (1.5° north) is a red supergiant whose velocity and distance place it in the association, and NGC 957 (1.5° east) is a probable but unconfirmed member.

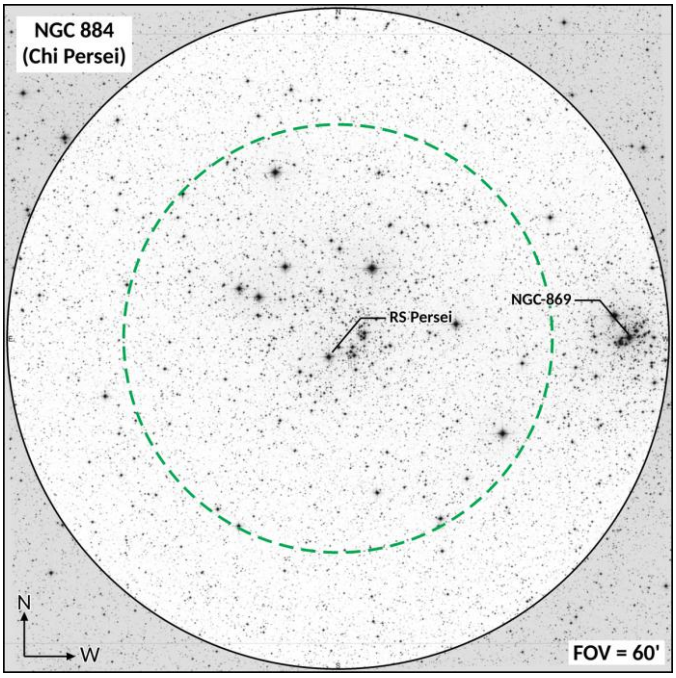
NGC 869 (OC || Mag=3.7 | Size=30' | SB=19.7 | mBortle=9 | mApt=50mm | MC=I3r |) Also known as h Persei this open cluster is one of two in the Double Cluster in Perseus. Trumpler Class I-Detached with strong central concentration, 3-Large range of brightness between stars, r-Rich cluster with more than 100 stars. See map and description above.



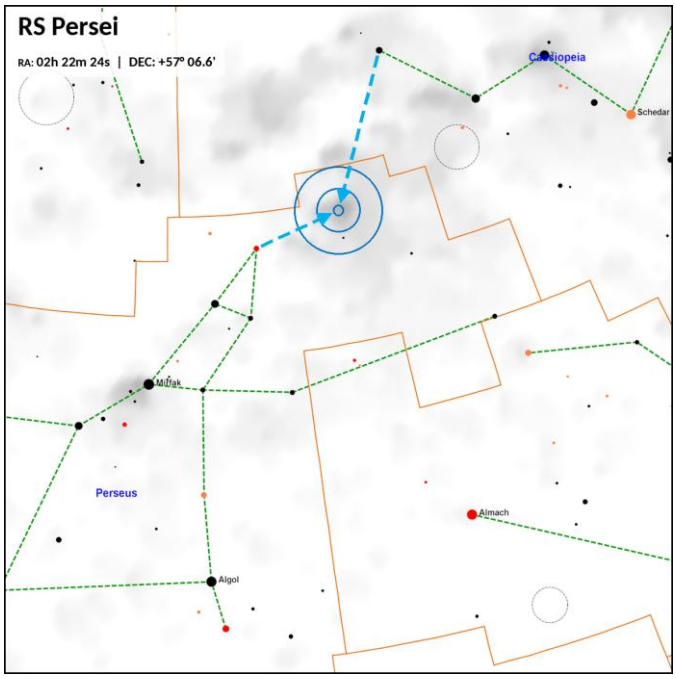


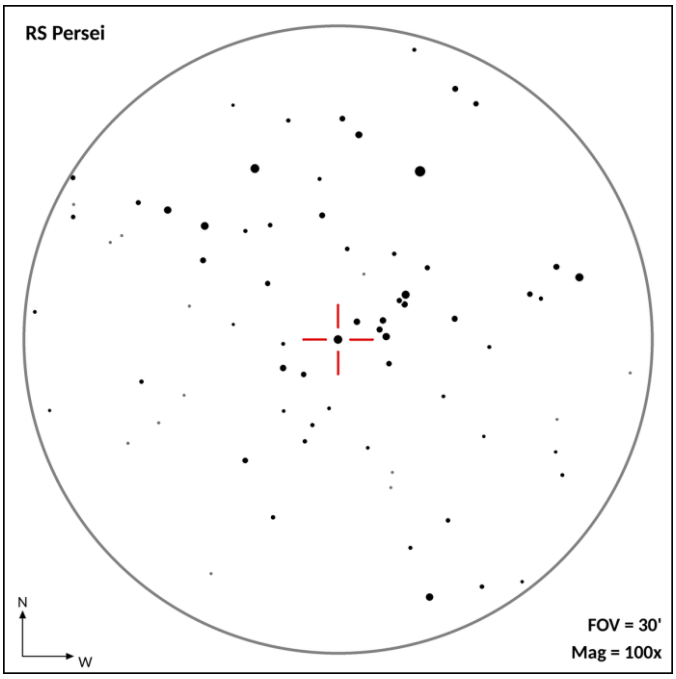
NGC 884 (OC || Mag=3.8 | Size=30' | SB=19.8 | mBortle=9 | mApt=50mm | MC=I3r |) Also known as χ Persei, this is one of the two open clusters in the Double Cluster in Perseus. Trumpler Class I-Detached with strong central concentration, 3-Large range of brightness between stars, r-Rich cluster with more than 100 stars.



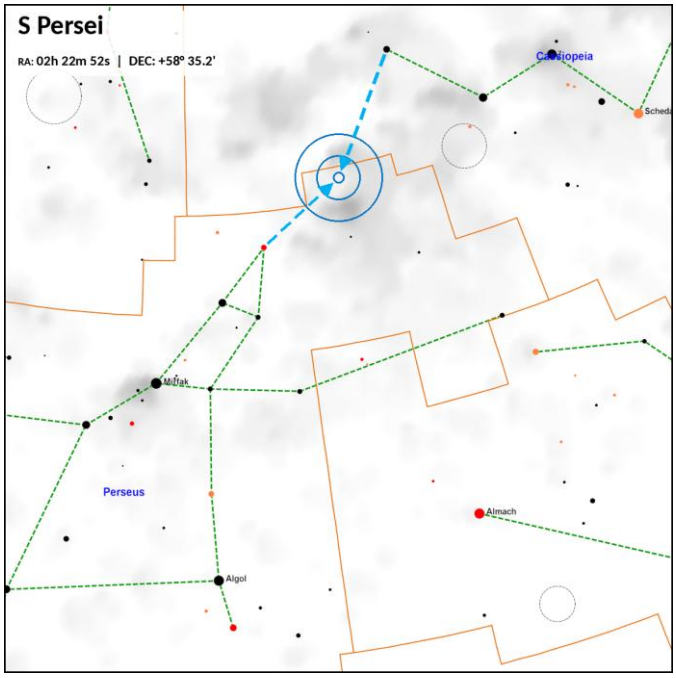


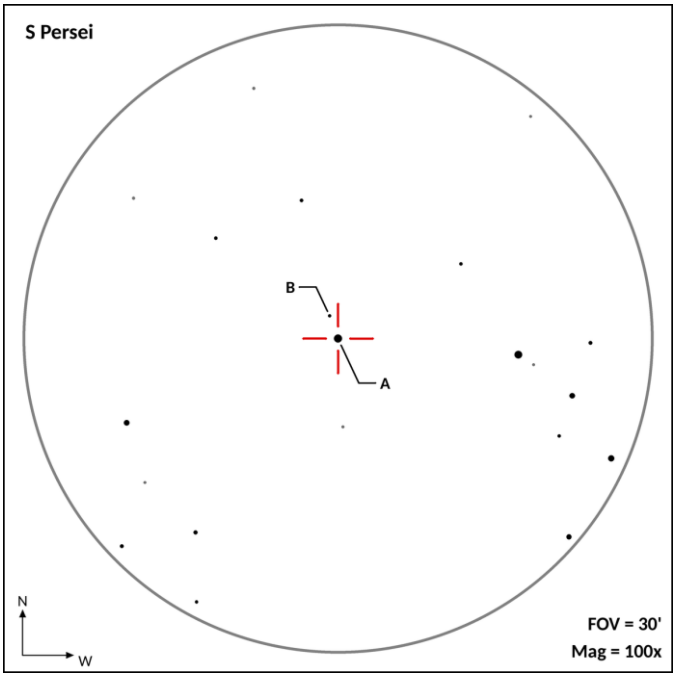
RS Persei (CS, VS || Magnitude Range= 7.8 to 10.0 | Period=245d | Spec=M4Iab | BV=+2.27 | Color=orange-red |) A red supergiant variable star located near the center of the open cluster NGC 884. This star's apparent magnitude varies from 7.8 to 10.0. BV=+2.27 indicating a color of Orange-Red.



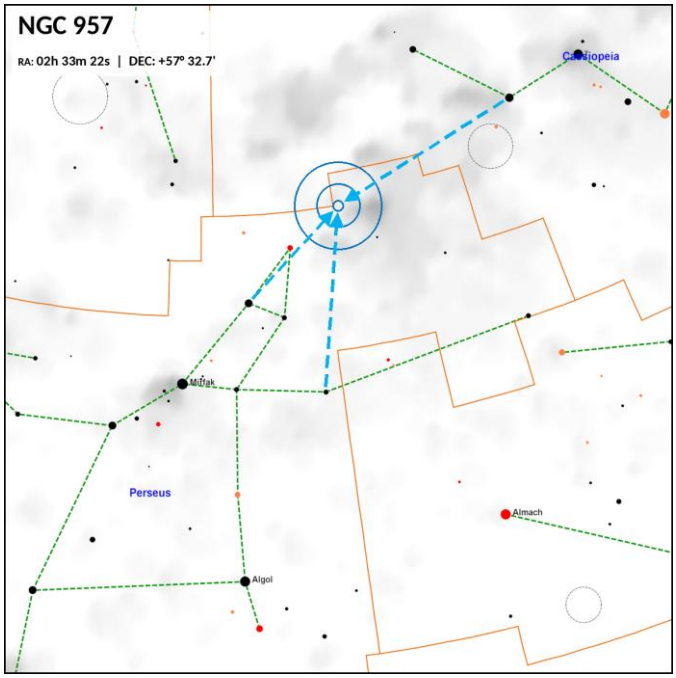


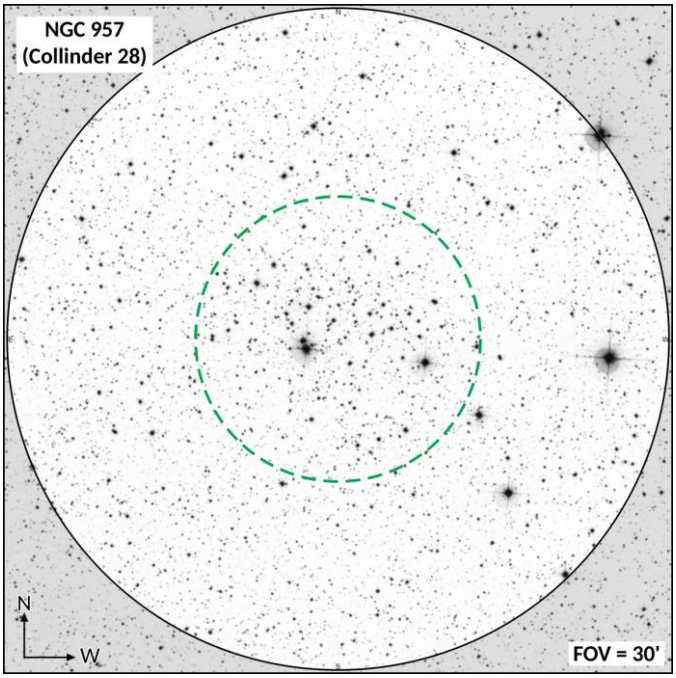
S Persei (DS || **AB** | Mag=7.9 / 11.4 | Sep=69.1" | PA=20° | mBortle=9 | mApt=102mm | RecMag=10x | Magnitude Range= 7.9 to 12.8 | Period=2.3y | Spec=M3Iae-M7 | BV=+2.46 | Color=orange-red |) A red supergiant or hypergiant located about 1.5° north of the Double Cluster, this is also classified as a double star system, but the components are not physical.



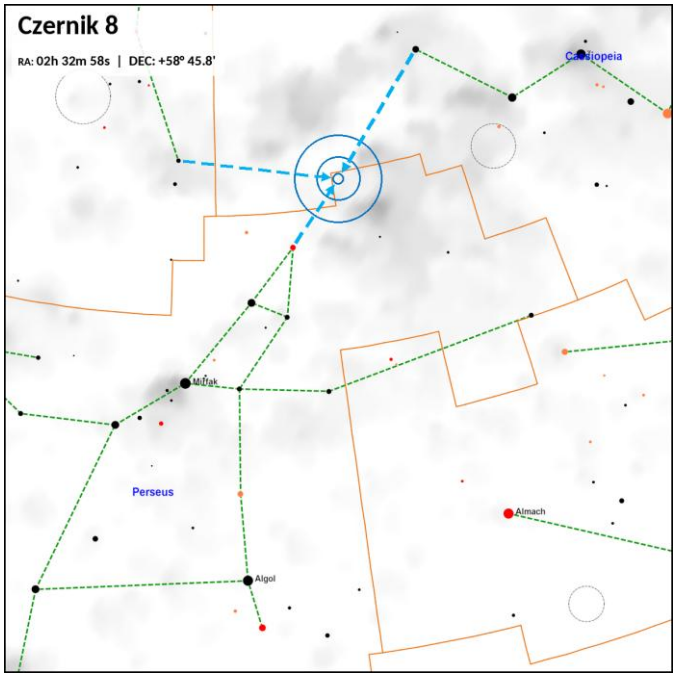


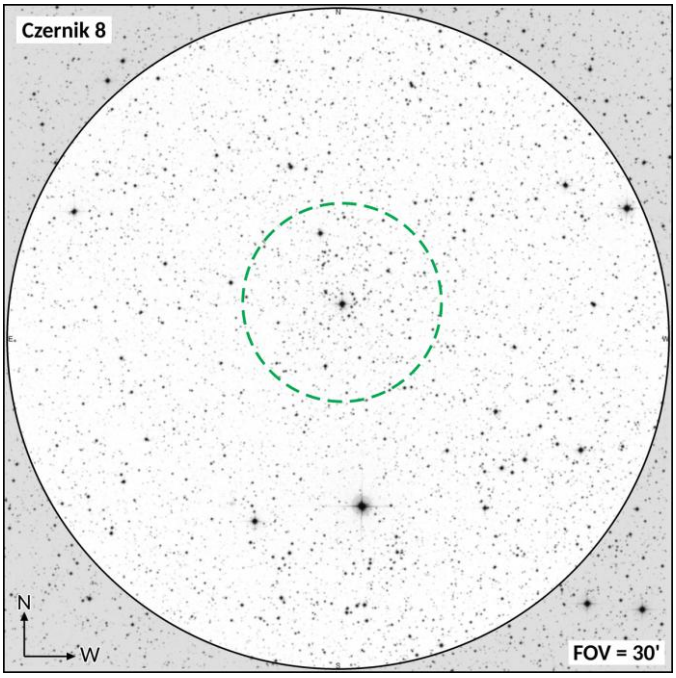
NGC 957 (OC || Mag=7.6 | Size=10' | SB=21.2 | mBortle=9 | mApt=102mm | MC=III2m |) Collinder 28 is a young open cluster estimated to be less than 11 million years old. Trumpler Class III-Detached with no noticeable central concentration, 2-Medium range of brightness between stars, m-Moderately rich cluster with 50 to 100 stars.



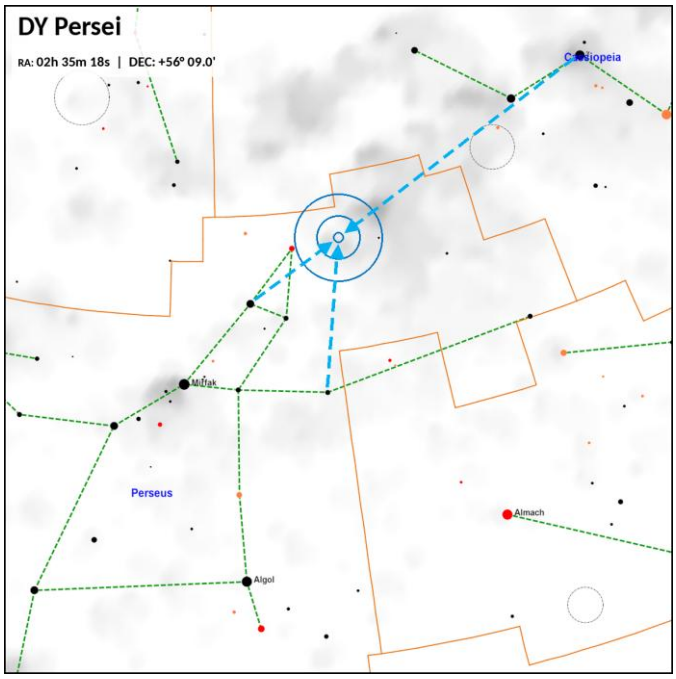


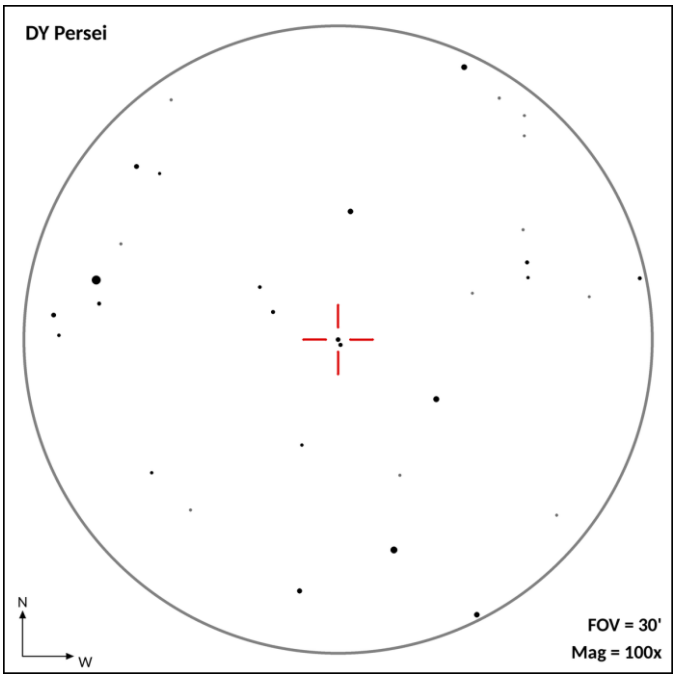
Czernik 8 (OC || Mag=9.7 | Size=7' | SB=22.6 | mApt=250mm | MC=II2p |) Located 4,600 light years away with an estimated physical diameter of 2.7 light years. Trumpler Class II-Detached with little central concentration, 2-Medium range of brightness between stars, p-Poor cluster with less than 50 stars.



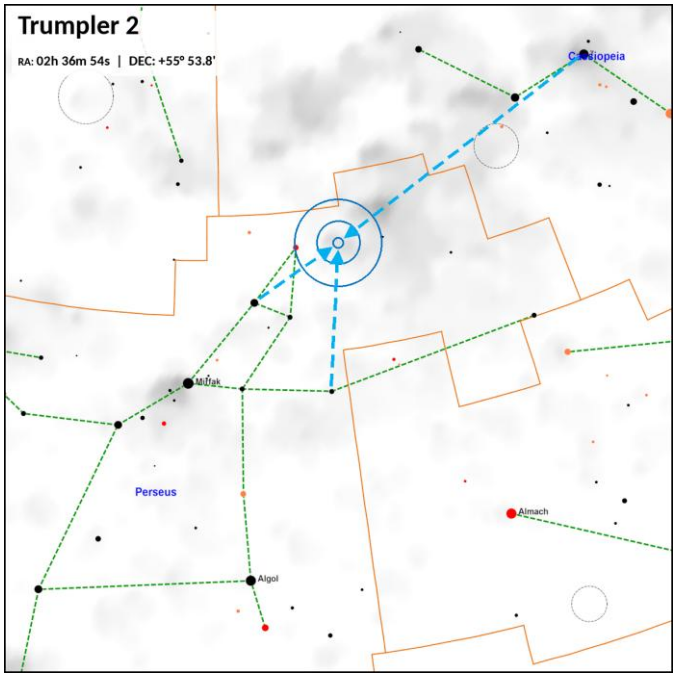


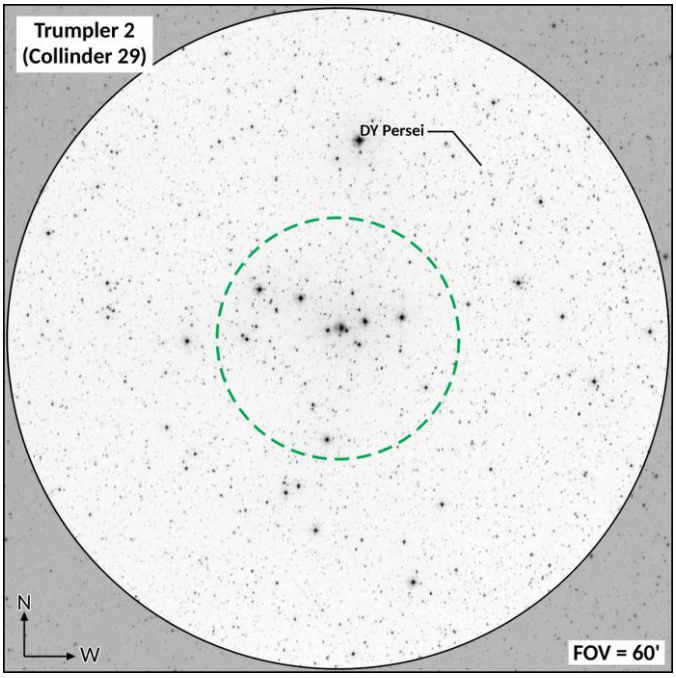
DY Persei (CS, VS || Magnitude Range= 10.5 to 16.0 | Period=2.2y | Spec=C4,5(R8) | BV=+2.00 | Color=orange-red |) A variable carbon star, this star is located on the outskirts of the open cluster Trumpler 2 but is not a member of this open cluster. BV=+2.00 indicating a color of Orange-Red.



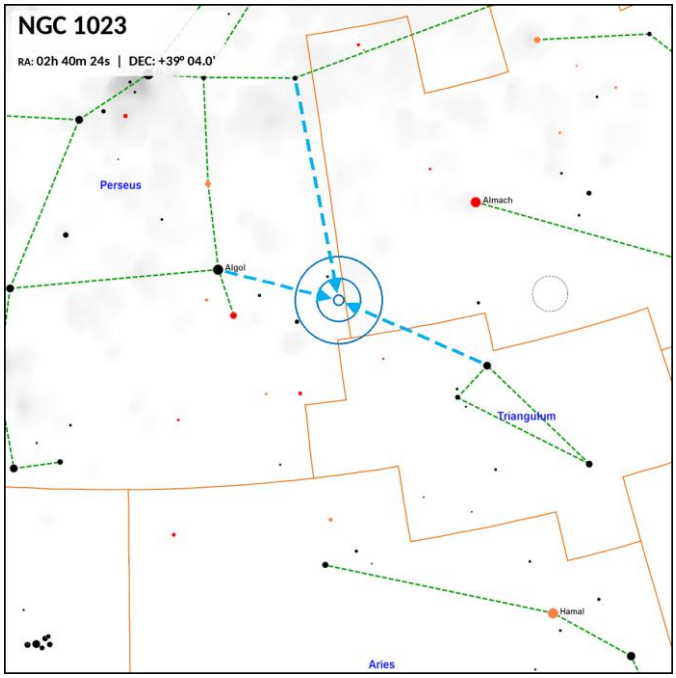


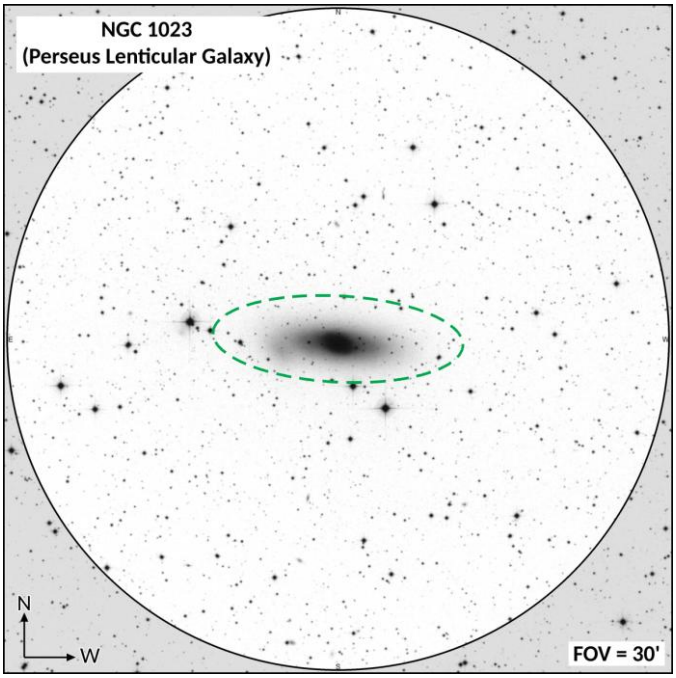
Trumpler 2 (OC || Mag=5.9 | Size=17' | SB=20.7 | mBortle=9 | mApt=50mm | MC=II2p |) This open cluster is estimated to be 2,365 light years away with a physical diameter of 12 light years. Trumpler Class II-Detached with little central concentration, 2-Medium range of brightness between stars, p-Poor cluster with less than 50 stars.



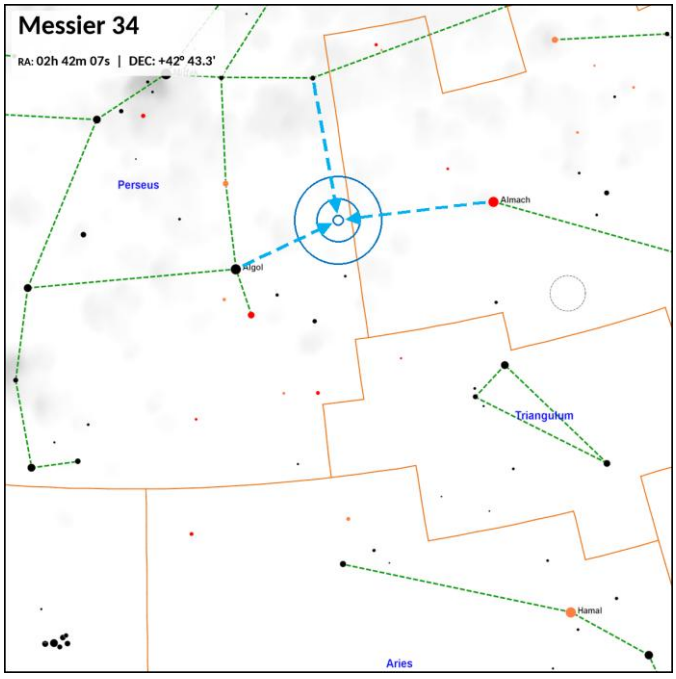


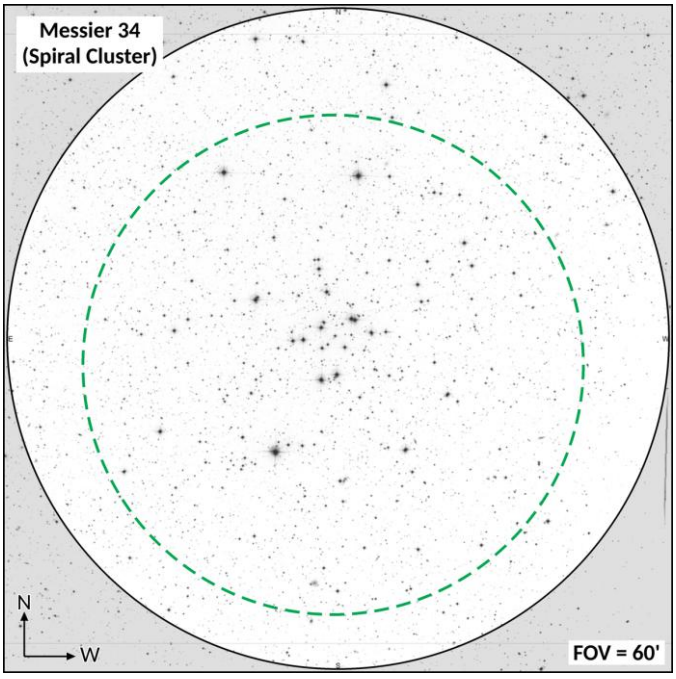
NGC 1023 (G || Mag=9.5 | Size=8.7'x3.0' | SB=21.7 | mBortle=6 | mApt=50mm | MC=SB0 |) The Perseus Lenticular Galaxy is a barred lenticular galaxy located 30 to 64 million light years away. A number of smaller galaxies have been found around this galaxy, collectively called the NGC 1023 Group. The group is part of the Virgo Supercluster of galaxies.



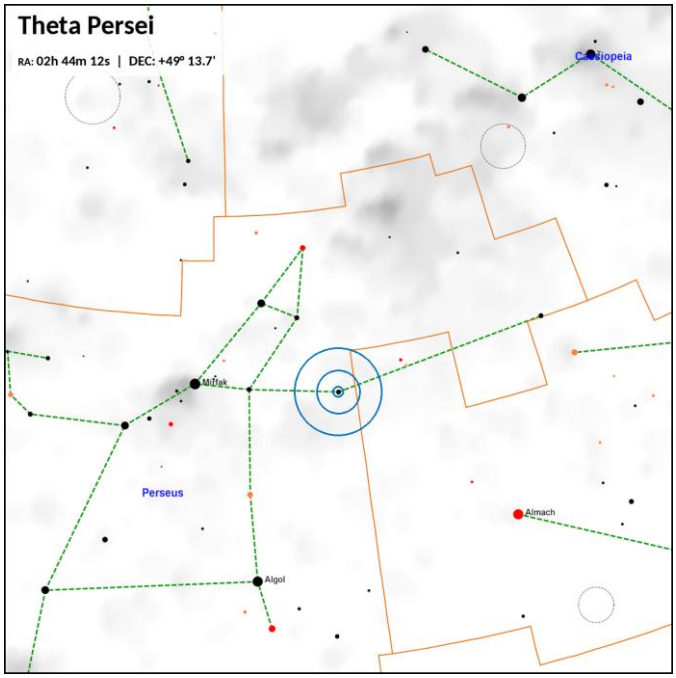


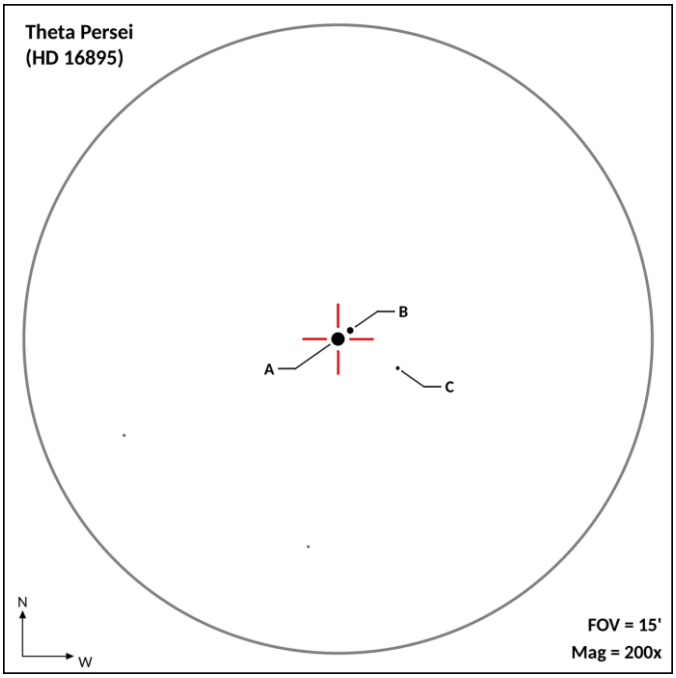
Messier 34 (OC || Mag=5.5 | Size=35' | SB=21.8 | mBortle=9 | mApt=50mm | MC=II3r |) The Spiral Cluster is an open cluster located about 1,500 light years away and has a physical radius of 7.5 light years. Trumpler Class II-Detached with little central concentration, 3-Large range of brightness between stars, r-Rich cluster with more than 100 stars.



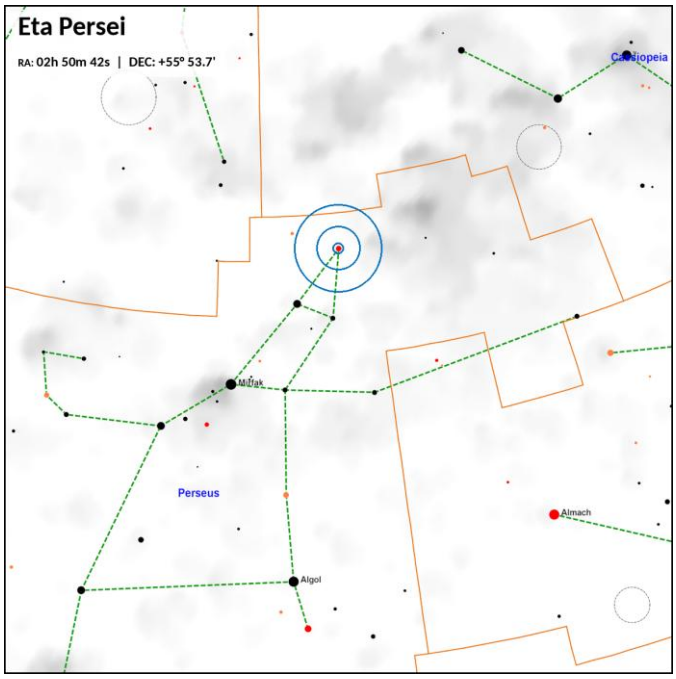


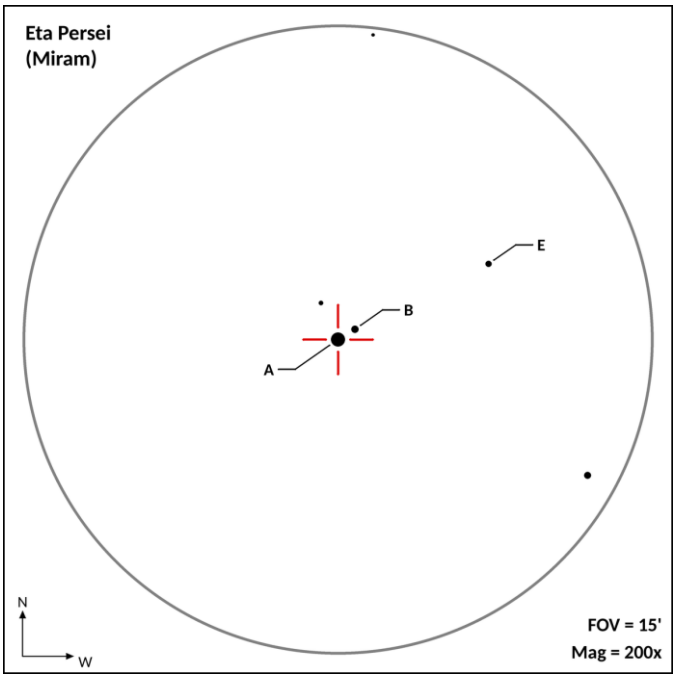
Theta Persei (MS-3 || **AB** | Mag=4.2 / 9.1 | Sep=21.2" | PA=305° | mBortle=9 | mApt=50mm | RecMag=10x | Period=2720y | Spec=F8V / M1.5 | Color=yellow-white / red || **AC** | Mag=4.2 / 11.1 | Sep=94.8" | PA=244° | mBortle=9 | mApt=80mm | RecMag=10x | Spec=F8V | Color=yellow-white |) Located 37 light years away, the AB components are physical with an orbital period of 2,720 years. The AC components are not physical.



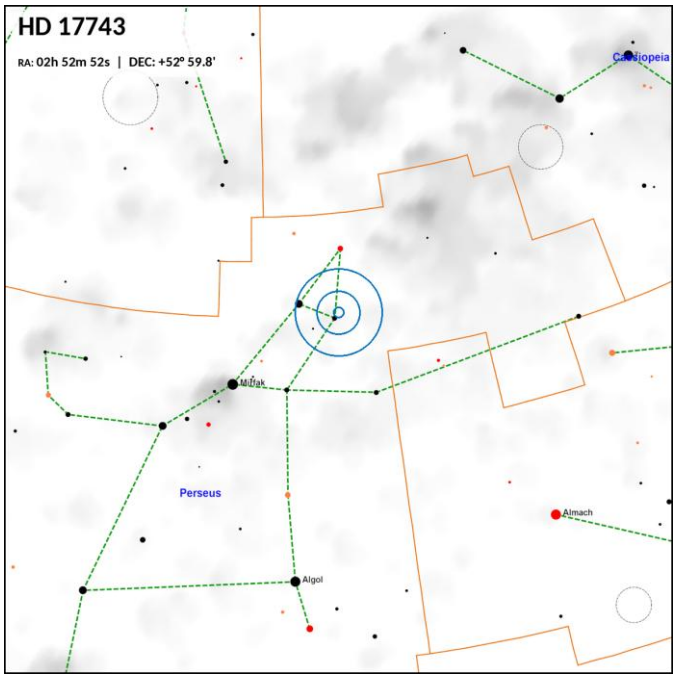


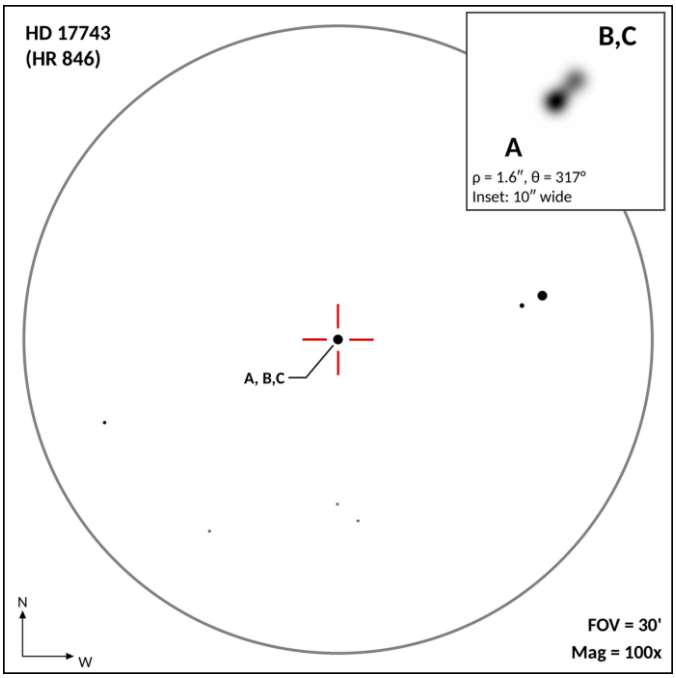
Eta Persei (MS-3 || **AB** | Mag=3.8 / 8.5 | Sep=27.1" | PA=301° | mBortle=9 | mApt=50mm | RecMag=10x | Spec=M3Ib-IIa / B9V | Color=red / blue-white || **AE** | Mag=3.8 / 9.2 | Sep=238.3" | PA=296° | mBortle=9 | mApt=50mm | RecMag=10x | Spec=M3Ib-IIa | Color=red |) Miram is reported to have a number of dim components, but none except the AB pair is physical. The AE pair is included since the E component is relatively bright.



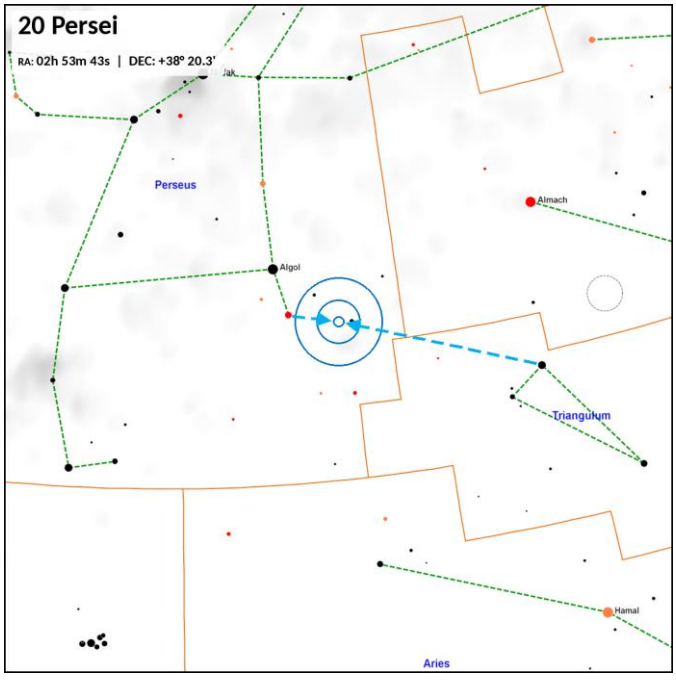


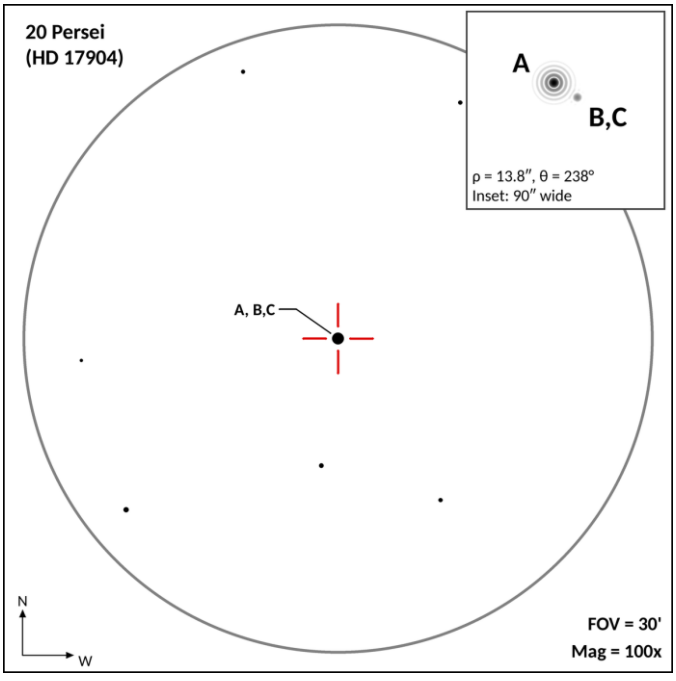
HD 17743 (DS || **AB,C** | Mag=7.0 / 7.3 | Sep=1.6" | PA=317° | mBortle=9 | mApt=80mm | RecMag=150x | Spec=B8III | Color=blue-white |) A triple star system where all three components are physical. AB has an orbital period of 85.8 years but the stars are very close at 0.3". The AB,C stars have an orbital period of 1,185 years. This system is located 1,004 light years away.



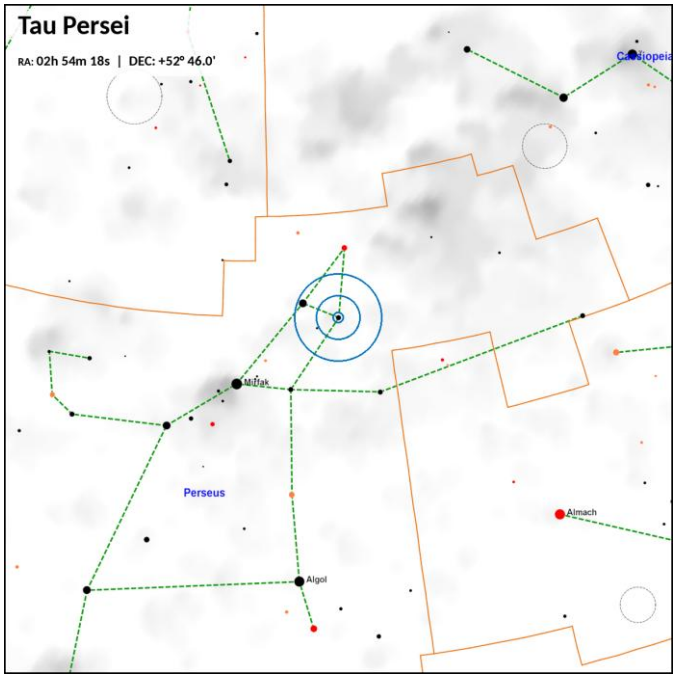


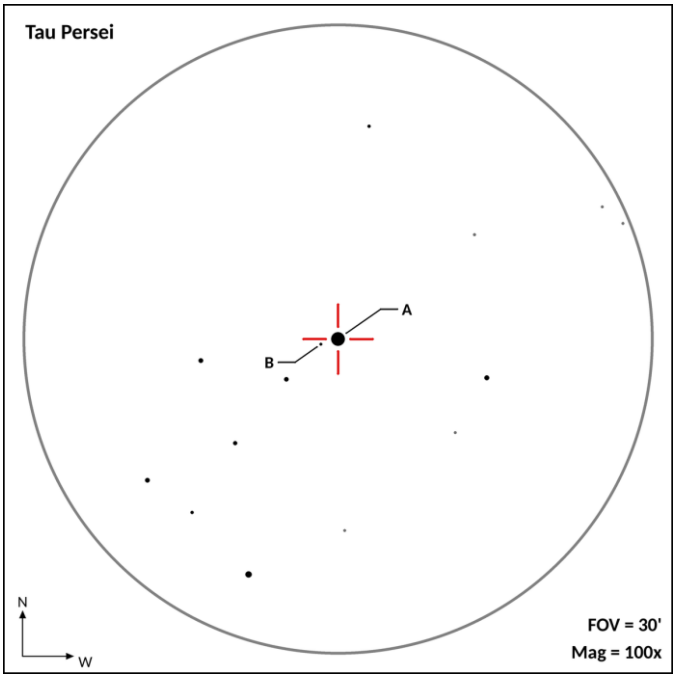
20 Persei (DS || **AB,C** | Mag=5.4 / 9.7 | Sep=13.8" | PA=238° | mBortle=9 | mApt=50mm | RecMag=20x | Spec=F4IV | Color=yellow-white |) Located 230 light years away, this is another triple star system. The AB components are only 0.2" apart, with an orbital period of 31.6 years. The AB,C orbital period is not known.



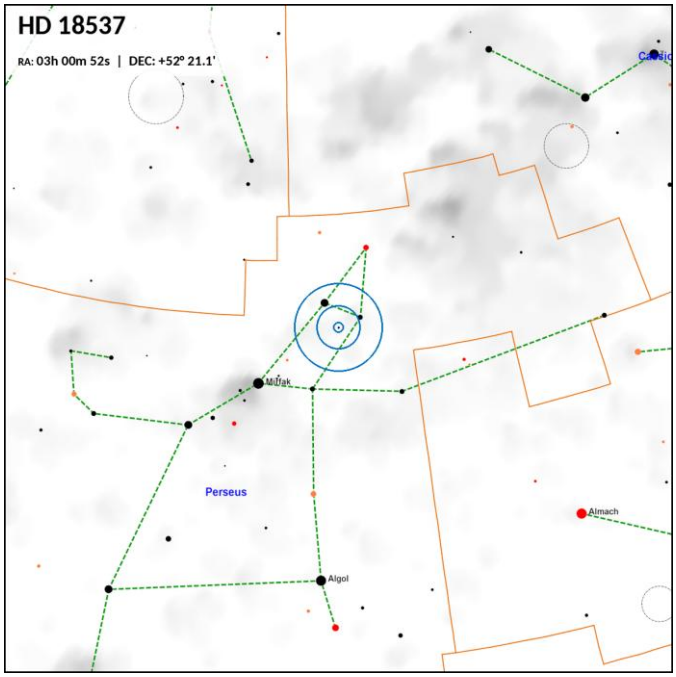


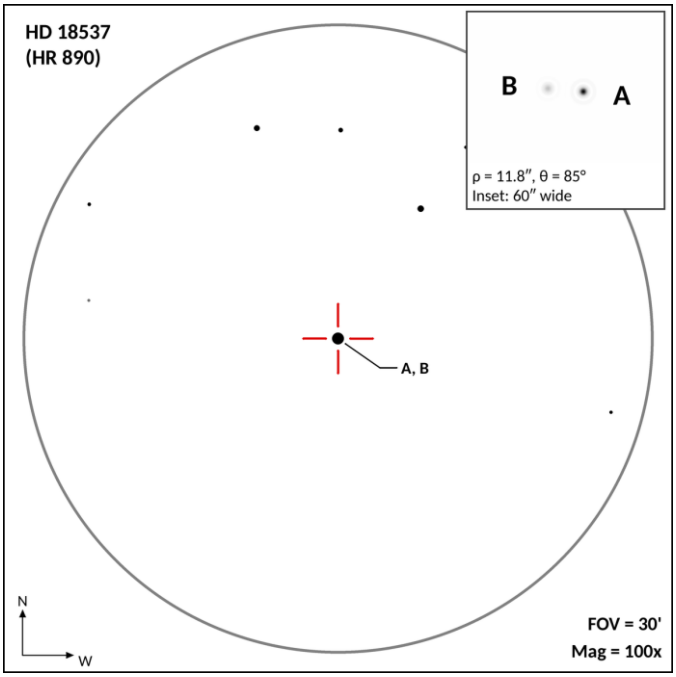
Tau Persei (DS || **AB** | Mag=4.0 / 12.3 | Sep=51" | PA=107° | mBortle=6 | mApt=130mm | RecMag=10x | Magnitude Range= 3.9 to 4.1 | Period=4.2y | Spec=G4III / A4V | Color=yellow / white |) Located 254 light years away, the AB components are not physical, but the Aa, Ab pair with a separation of 0.1" (not shown) have an orbital period of 4.2 years. The primary component is a yellow giant estimated to be 390 million years old.



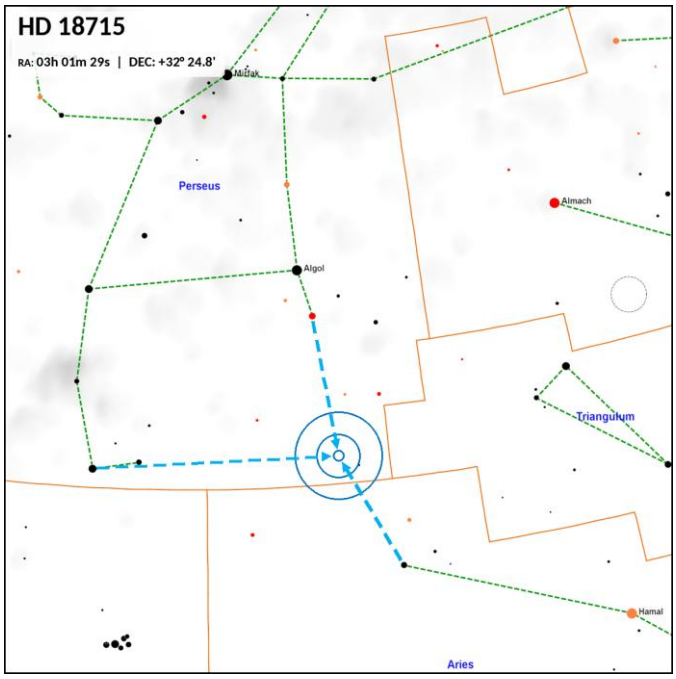


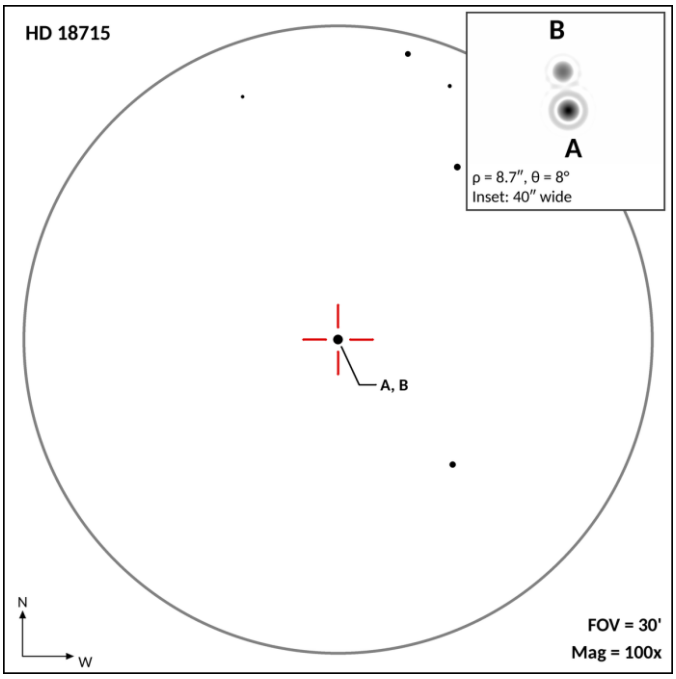
HD 18537 (DS || **AB** | Mag=5.2 / 6.2 | Sep=11.8" | PA=85° | mBortle=9 | mApt=50mm | RecMag=20x | Spec=B7V / B9V | Color=blue-white / blue-white |) Located 460 light years away, this is a physical double. The primary star is a blue-white main-sequence star with a mass of 4.5 times that of our Sun's.



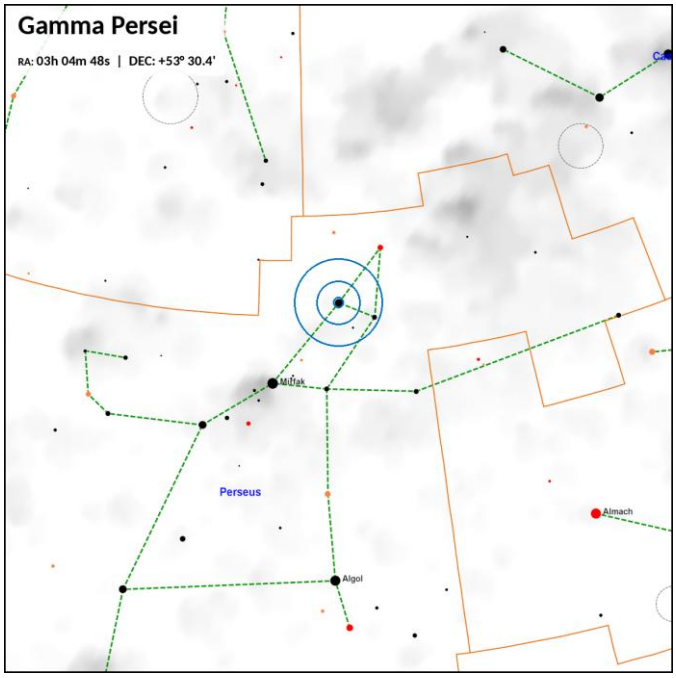


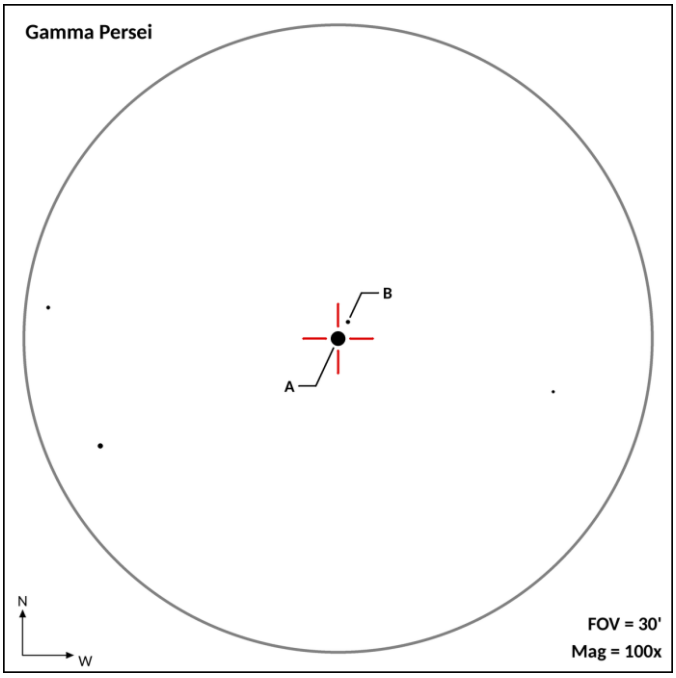
HD 18715 (DS || **AB** | Mag=7.0 / 8.3 | Sep=8.7" | PA=8° | mBortle=9 | mApt=50mm | RecMag=30x | Spec=G5IV | Color=yellow |) Located 790 light years away this is a physical double. The primary is a yellow star with a mass of 1.1 that of our Sun's but a diameter of 12.4 times that of our Sun's diameter.



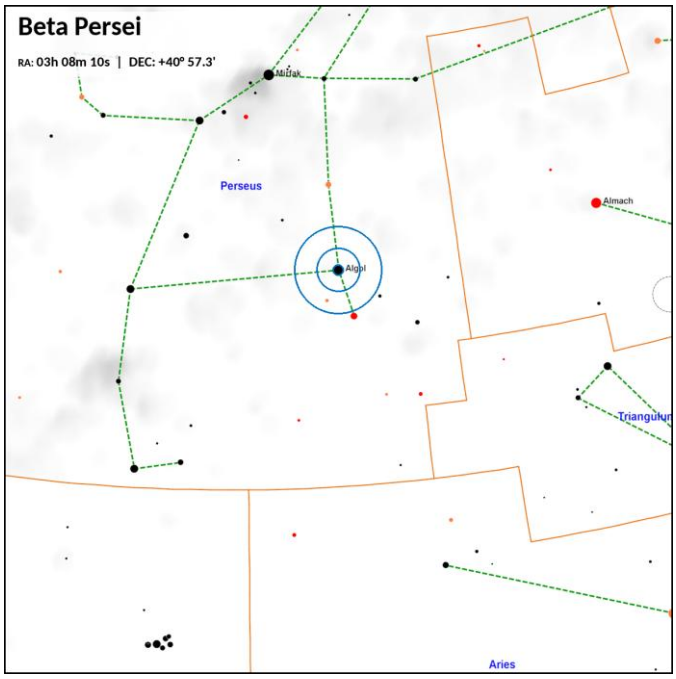


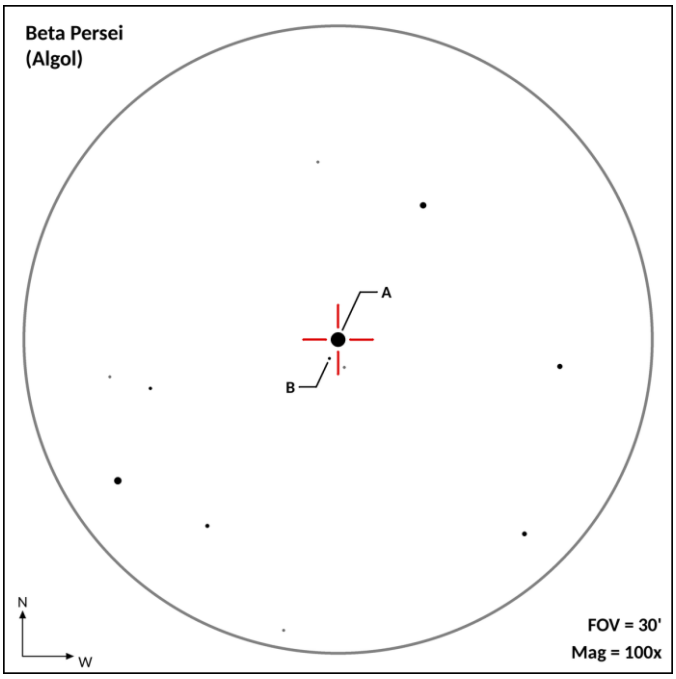
Gamma Persei (DS || **AB** | Mag=2.9 / 10.8 | Sep=55.2" | PA=329° | mBortle=9 | mApt=70mm | RecMag=10x | Magnitude Range= 2.9 to 3.2 | Period=14.6y | Spec=G8III / A2V | Color=yellow / white |) Located 221 light years away, this is a wide eclipsing binary (Aa, Ab pair) with an orbital period of 14.6 years. The AB pair is physical, but its period has not been determined.



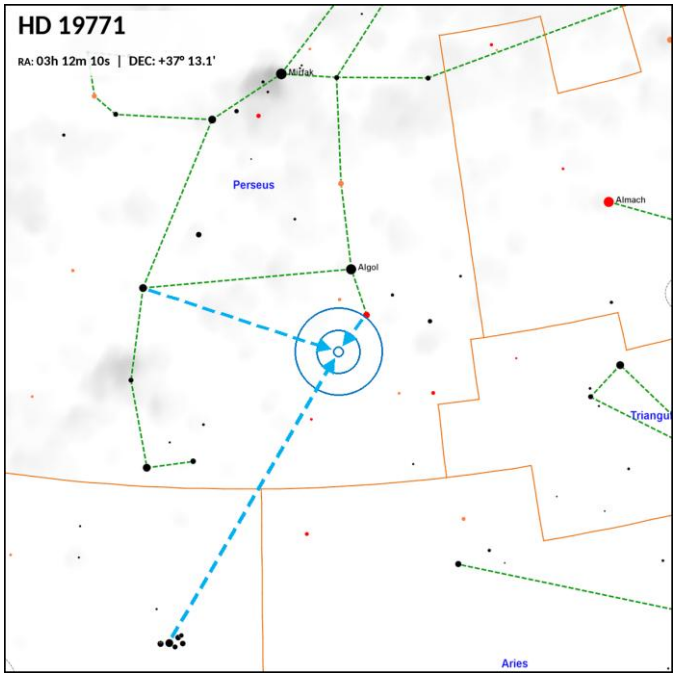


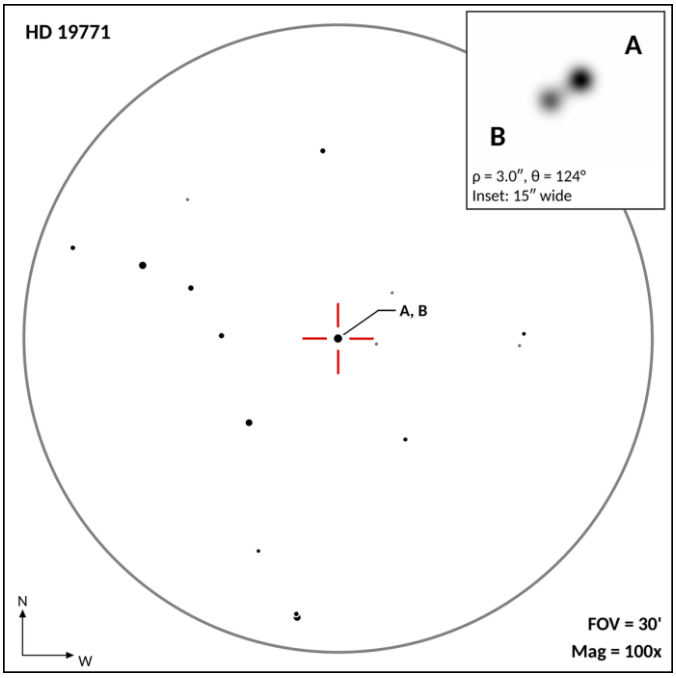
Beta Persei (DS || **AB** | Mag=2.1 / 12.7 | Sep=59.4" | PA=156° | mBortle=4 | mApt=150mm | RecMag=10x | Magnitude Range= 2.1 to 3.3 | Period=2.9d | Spec=B8V | Color=blue-white |) Algol, also known as the Demon Star is known to have a number of components. The AB components identified here are not physical in nature.



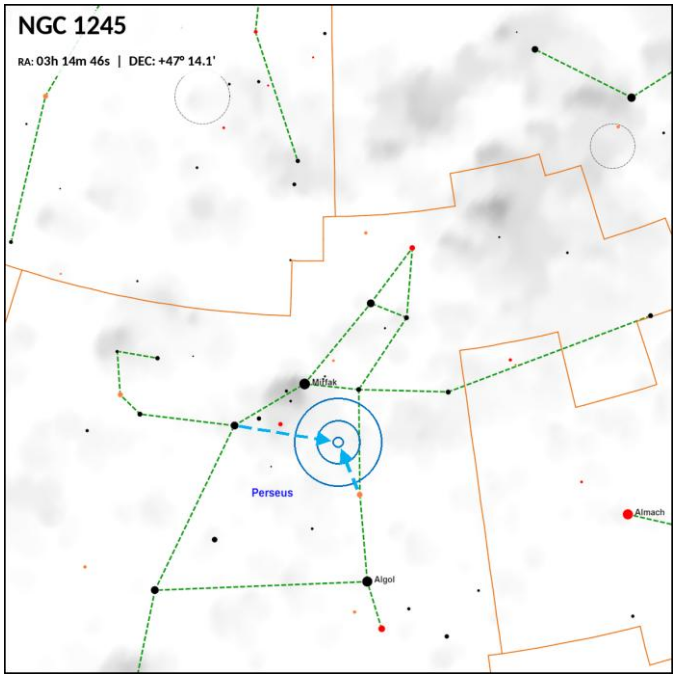


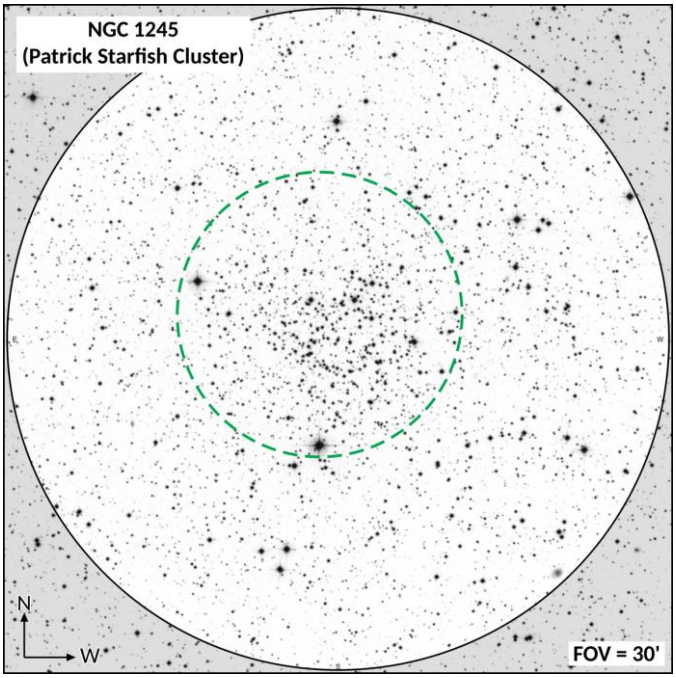
HD 19771 (DS || **AB** | Mag=8.0 / 8.3 | Sep=3" | PA=124° | mBortle=9 | mApt=50mm | RecMag=80x | Period=871y | Spec=G0 | Color=yellow |) Located 130 light years away, this is a physical double with an orbital period of 871 years. The primary is a yellow star with an energy output 1.7 times that of our Sun's luminosity.



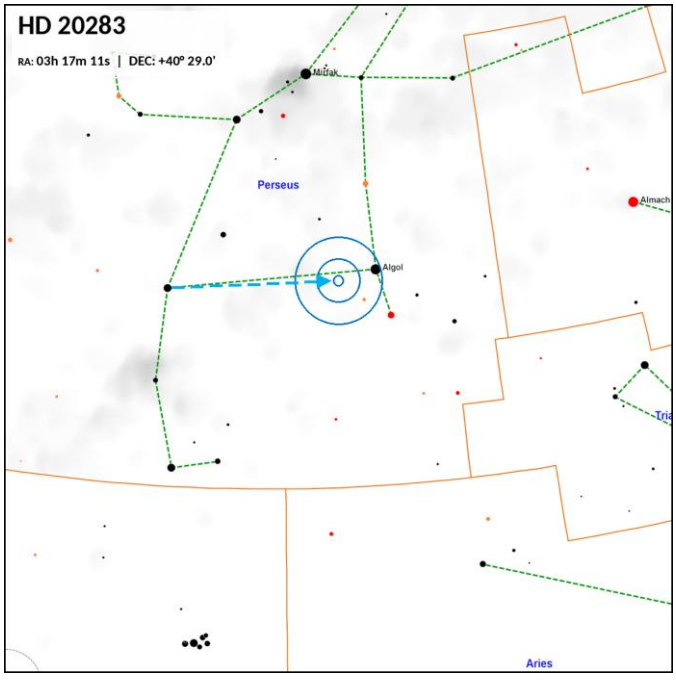


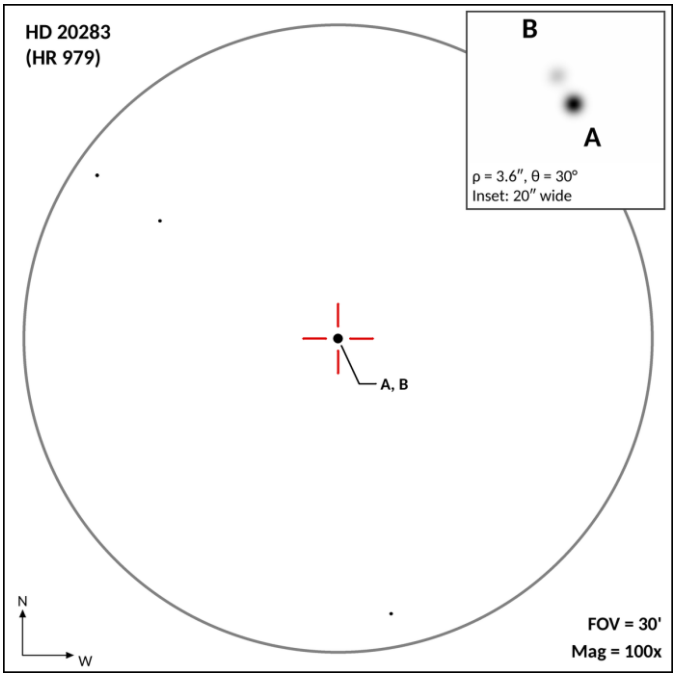
NGC 1245 (OC || Mag=8.4 | Size=10' | SB=22.0 | mBortle=5 | mApt=130mm | MC=II2r |) The Patrick Starfish Cluster is estimated to be nearly 1 billion years old and is located 9,800 light years away with a physical diameter of 27 light years. Trumpler Class II-Detached with little central concentration, 2-Medium range of brightness between stars, r-Rich cluster with more than 100 stars.



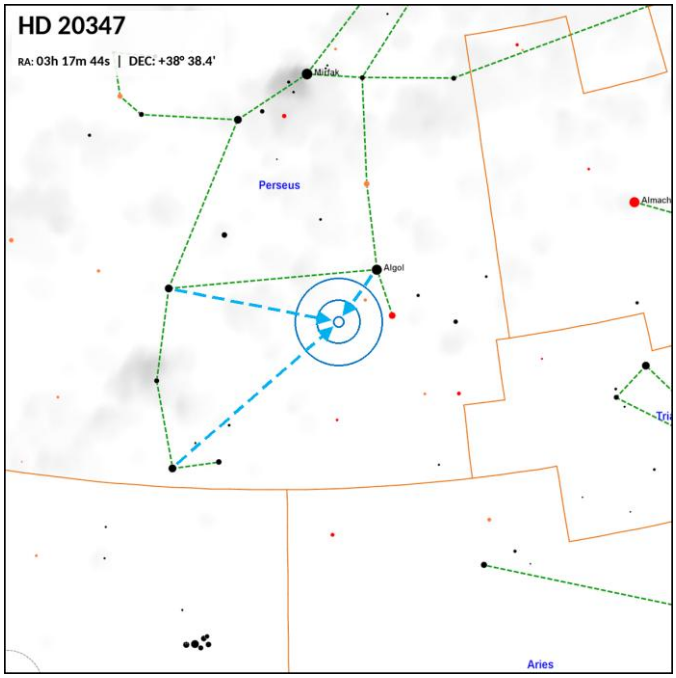


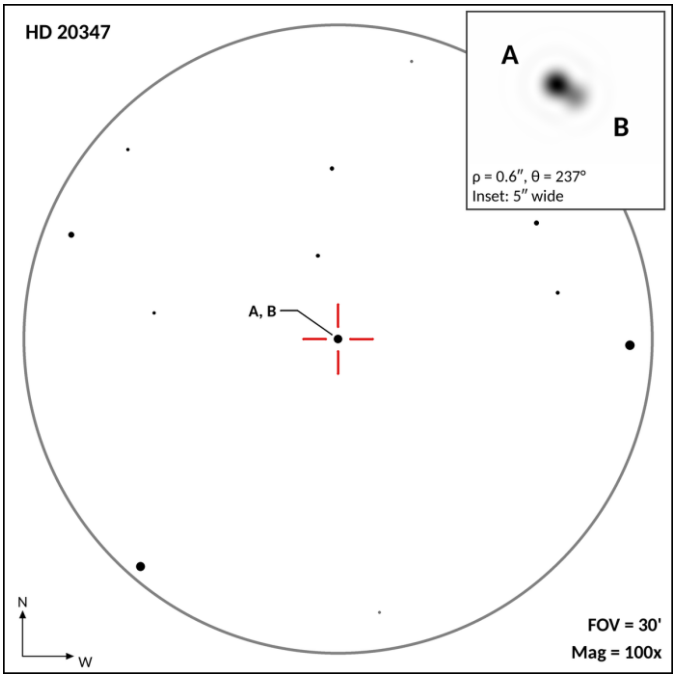
HD 20283 (DS || **AB** | Mag=6.8 / 7.7 | Sep=3.6" | PA=30° | mBortle=9 | mApt=50mm | RecMag=70x | Spec=B9VpSi | Color=blue-white |) Located 640 light years away, the primary is a blue-white main-sequence star with an estimated mass of 3.3 solar masses and a diameter of 3.5 times that of our Sun's. The nature of this double is uncertain.



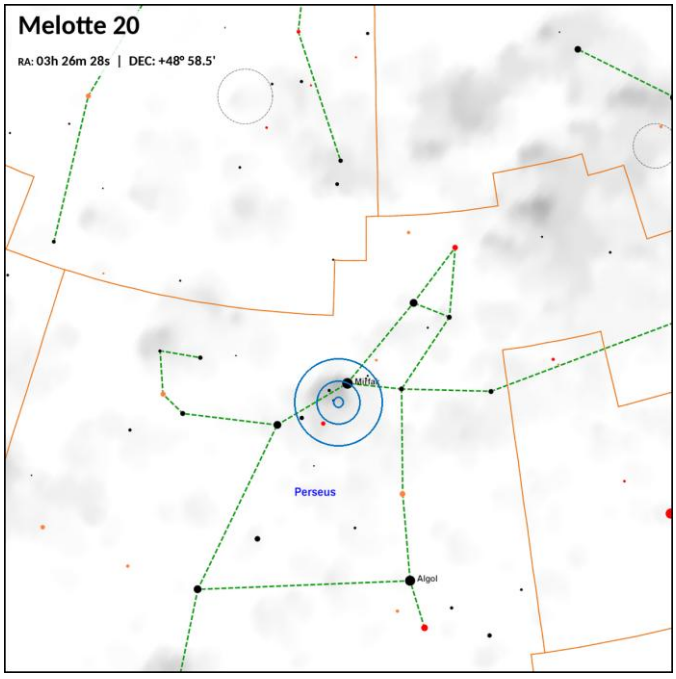


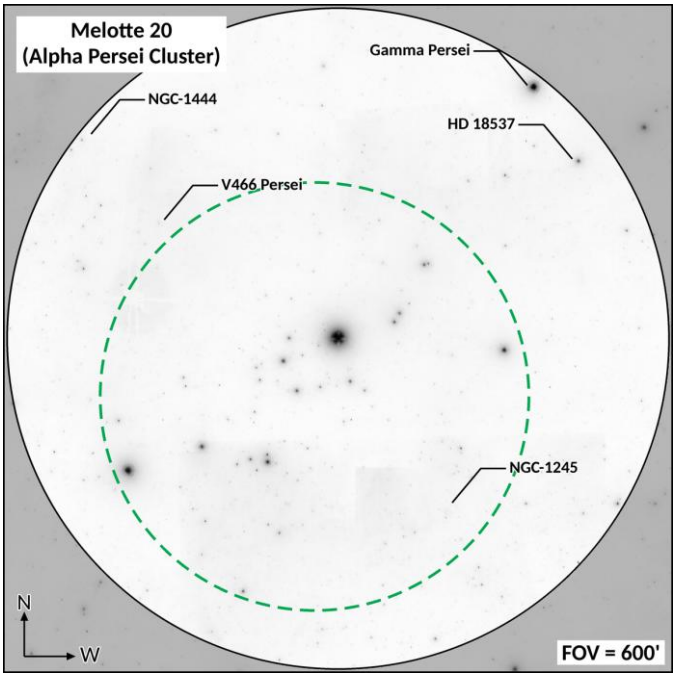
HD 20347 (DS || **AB** | Mag=7.7 / 8.5 | Sep=0.6" | PA=237° | mApt=200mm | RecMag=300x | Period=113y | Spec=G0 | Color=yellow |) Located 196 light years away this double is physical with an orbital period of 113 years. The primary is a yellow star with an energy output of 3.7 times that of our Sun's luminosity. Splitting this pair will be a challenge and require at least 8" of aperture to achieve.



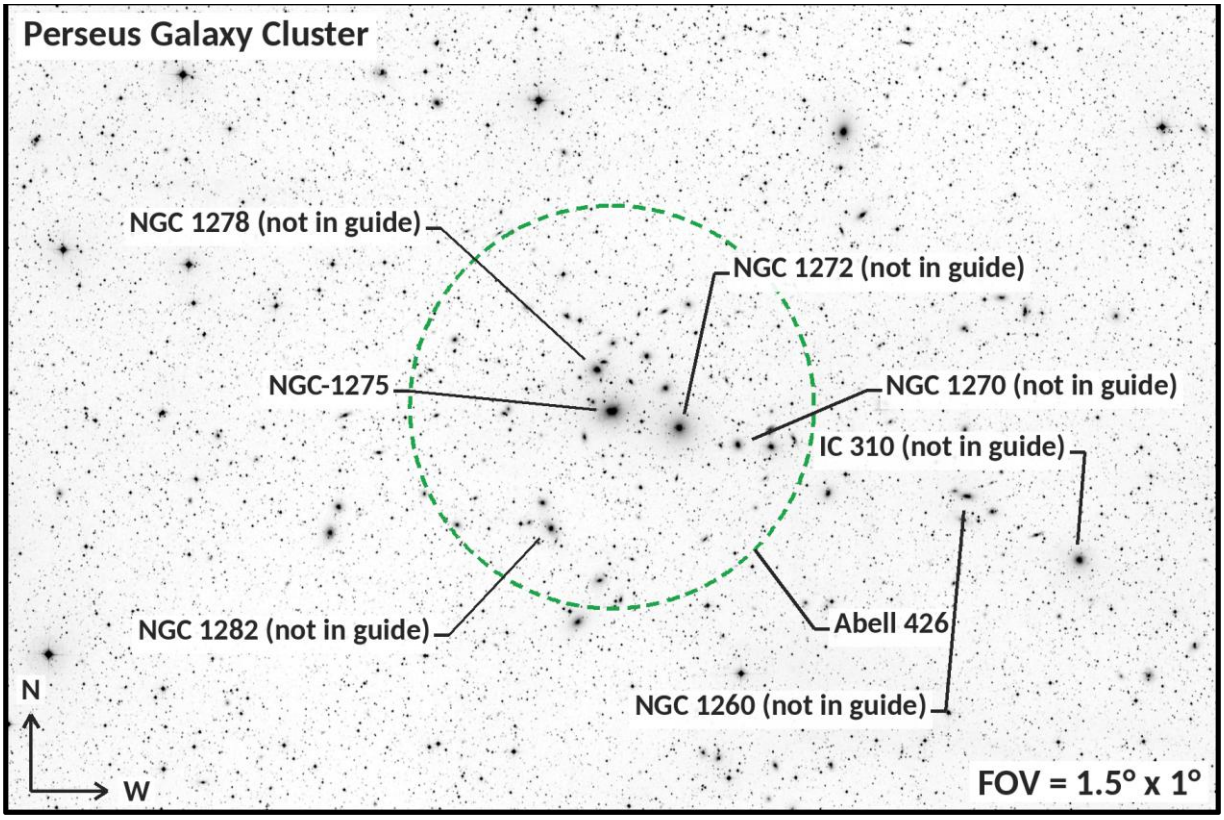


Melotte 20 (OC || Mag=1.2 | Size=300' | SB=22.2 | mBortle=9 | mApt=50mm | MC=III3m |) The Alpha Persei Cluster also known as Collinder 39 is an open cluster located about 560 light years away. Trumpler Class III-Detached with no noticeable central concentration, 3-Large range of brightness between stars, m-Moderately rich cluster with 50 to 100 stars.





Perseus Galaxy Cluster



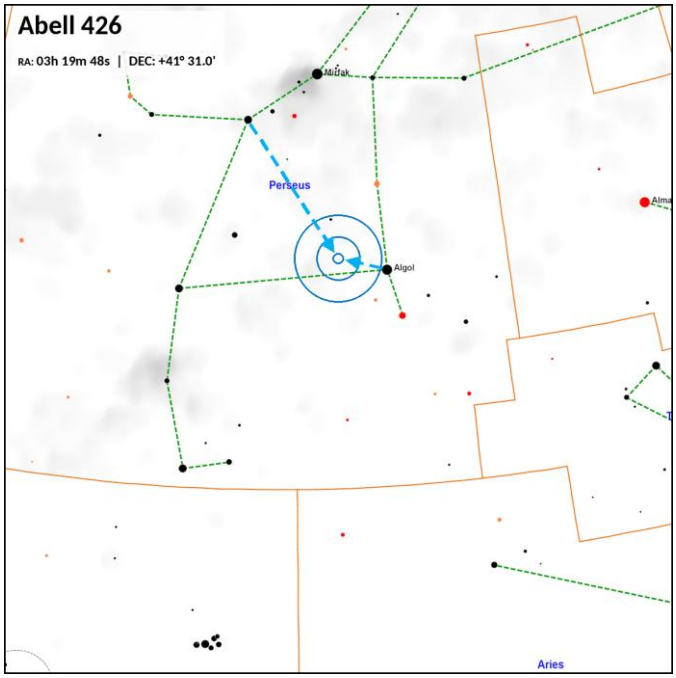
The Perseus Galaxy Cluster region contains Abell 426 and NGC 1275.

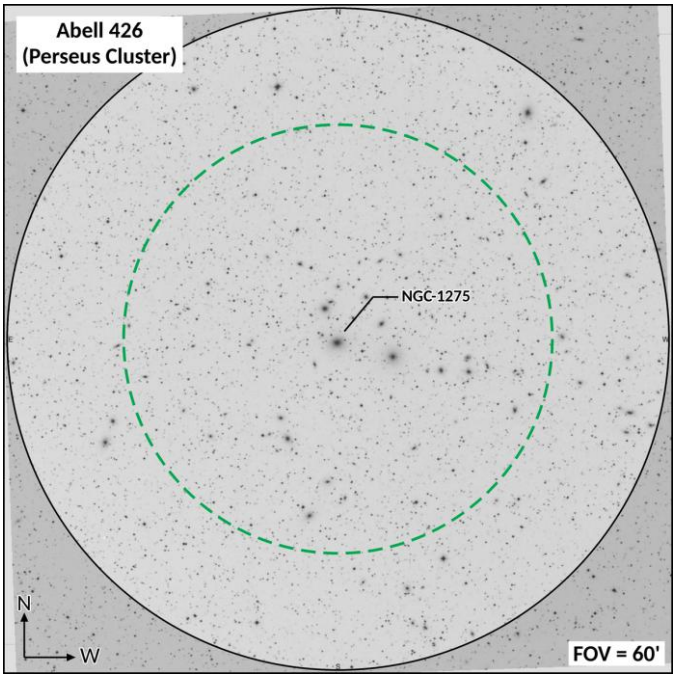
The Perseus Galaxy Cluster (Abell 426) is one of the nearest rich clusters of galaxies, about 240 million light years away, with more than a thousand member galaxies spread over several degrees of sky. It is the dominant cluster of the Perseus–Pisces Supercluster. Its galaxies are immersed in a vast cloud of gas at tens of millions of degrees, which makes it the brightest galaxy cluster in the sky at X-ray wavelengths.

NGC 1275 sits at the centre, where the X-ray emission peaks. It is the cluster's dominant galaxy and the radio source Perseus A (3C 84), powered by a supermassive black hole whose jets blow bubbles into the surrounding hot gas; Chandra X-ray images show these cavities and the plumes spreading out from them. Visually the cluster is a field of faint smudges: NGC 1275, at about magnitude 11.6, with NGC 1272 and a chain of smaller galaxies to its west, rewards larger apertures under dark skies.

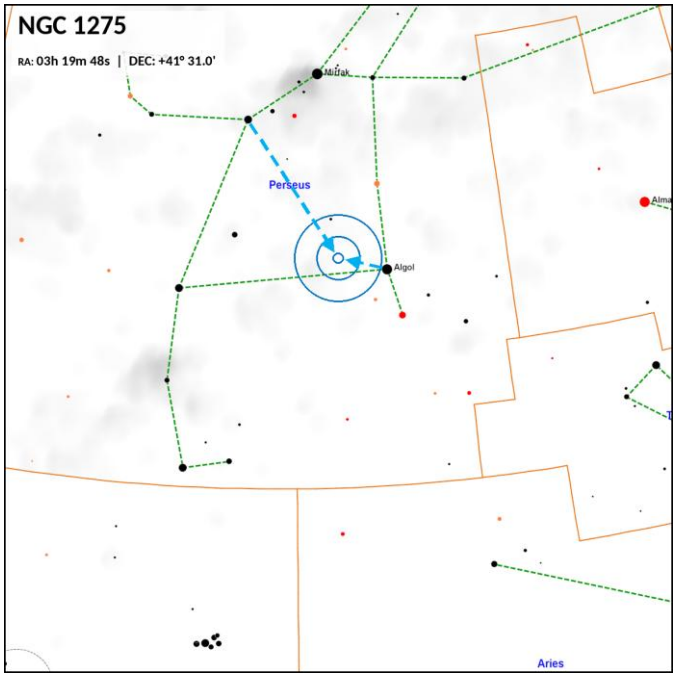
NGC 1275 is the only cluster galaxy with its own entry in this guide; the other galaxies labelled on the map are cluster members not covered here.

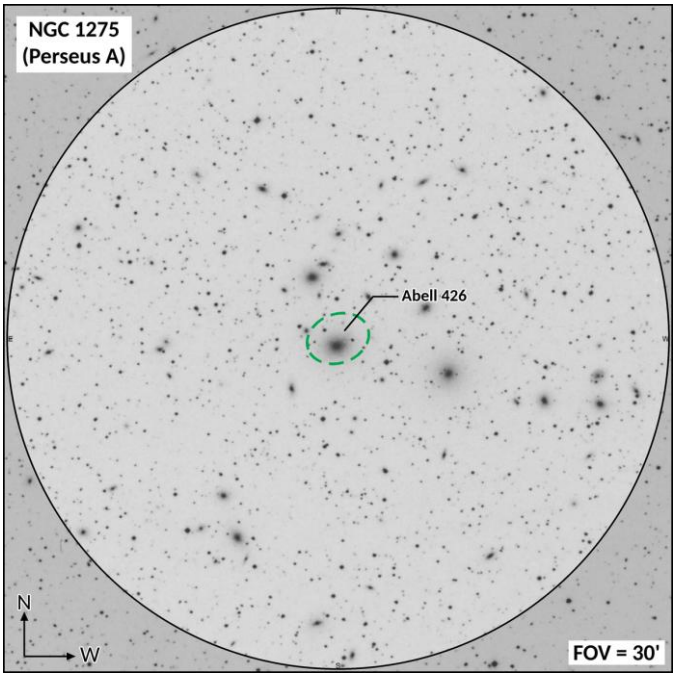
Abell 426 (GCl || Mag=12.5 | Size=30' | SB=28.5 |) The Perseus Cluster is one of the most massive objects in the known universe containing thousands of galaxies immersed in a vast cloud of multimillion-degree gas. It is located 240 million light years away with an approximate diameter of 5.0 million light years. See map and description above.



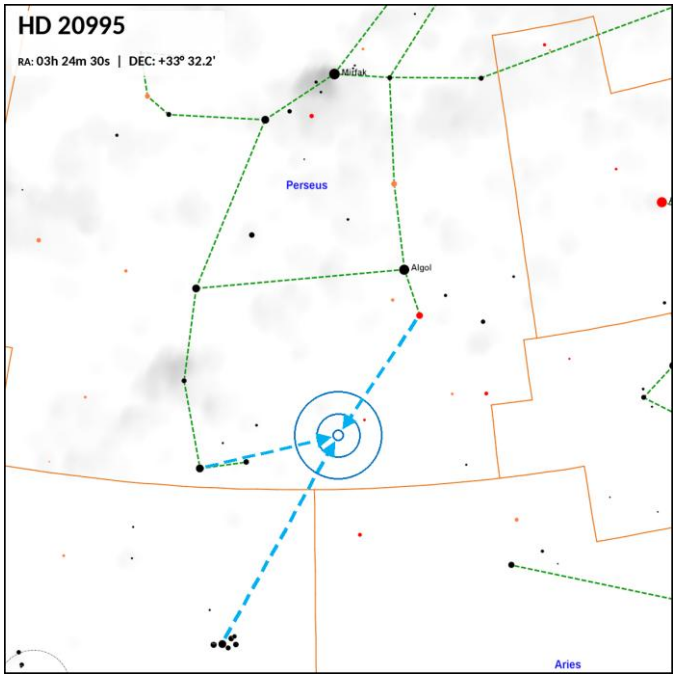


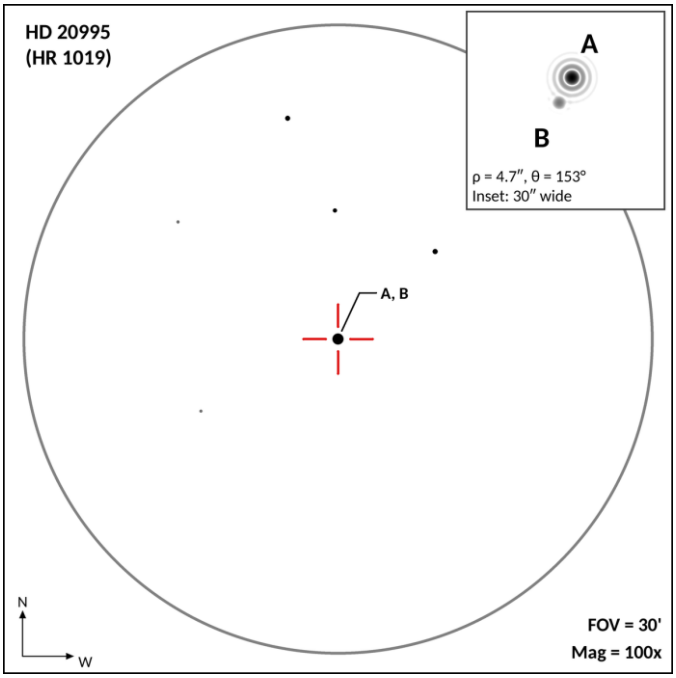
NGC 1275 (G || Mag=11.6 | Size=2.2'x1.7' | SB=21.7 | mBortle=4 | mApt=114mm | MC=cD pec |) Perseus A or Caldwell 24 is a type 1.5 Seyfert galaxy located 240 million light years away and a member of the Perseus Cluster of galaxies. NGC 1275 is actually two colliding galaxies with a supermassive black hole with an estimated mass of 800 million solar masses, including the black hole and the inner gas disk around it.



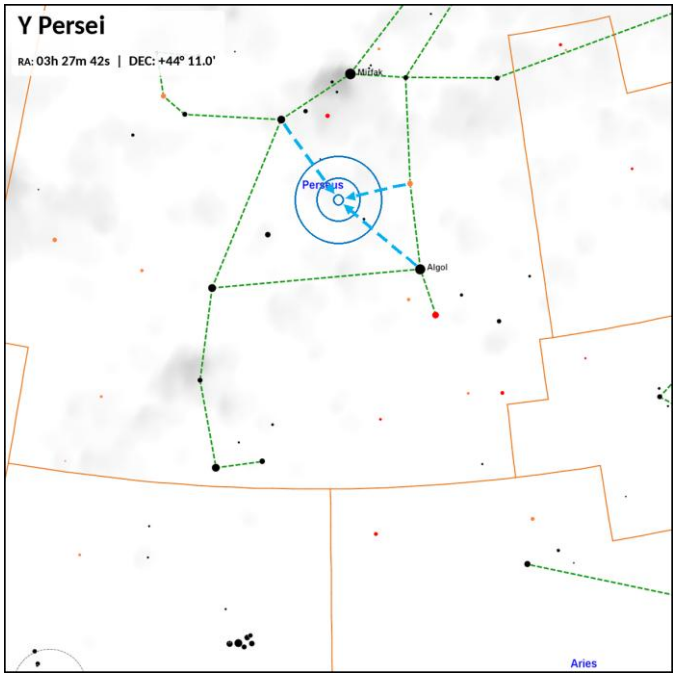


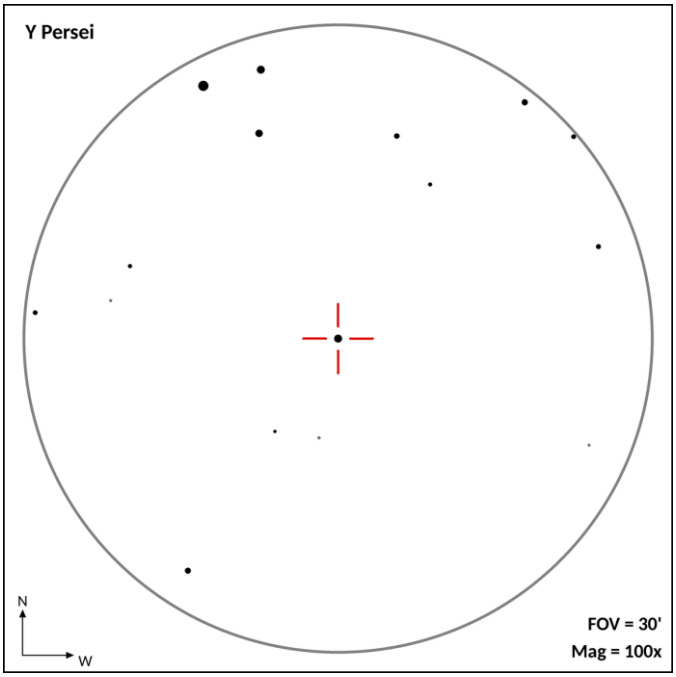
HD 20995 (DS || **AB** | Mag=5.8 / 9.3 | Sep=4.7" | PA=153° | mBortle=9 | mApt=102mm | RecMag=50x | Spec=A0V | Color=white |) Located 360 light years away this double is physical. The primary is a white main-sequence star with 89 times that of our Sun's luminosity, a diameter 3.3 times that of our Sun and 2.9 solar masses.



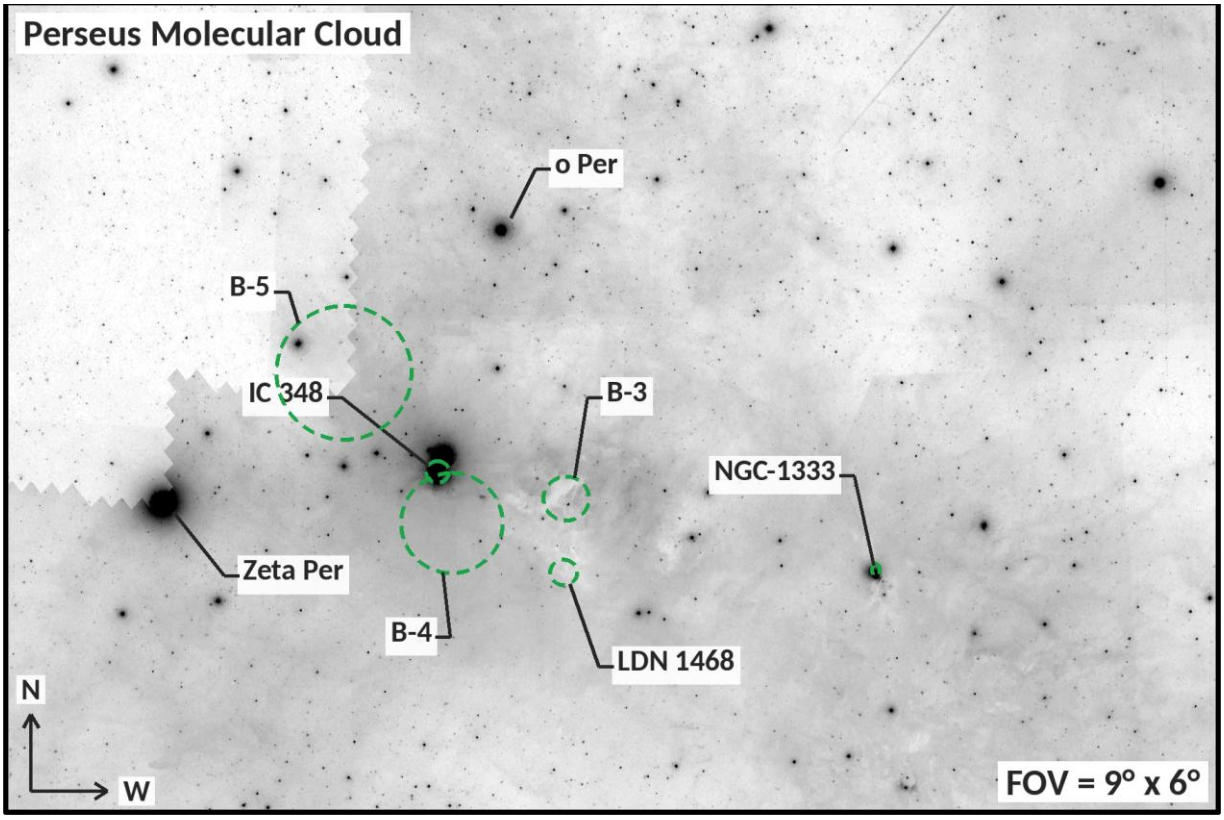


Y Persei (CS, VS || Magnitude Range= 8.1 to 11.3 | Period=253d | Spec=C4,3e(R4e) | BV=+2.52 | Color=red |) Located 4,200 light years away with 176 times that of our Sun's luminosity and a period of 253 days with a magnitude range of 8.1 to 11.3. BV=+2.52 indicating a color of Red.





Perseus Molecular Cloud



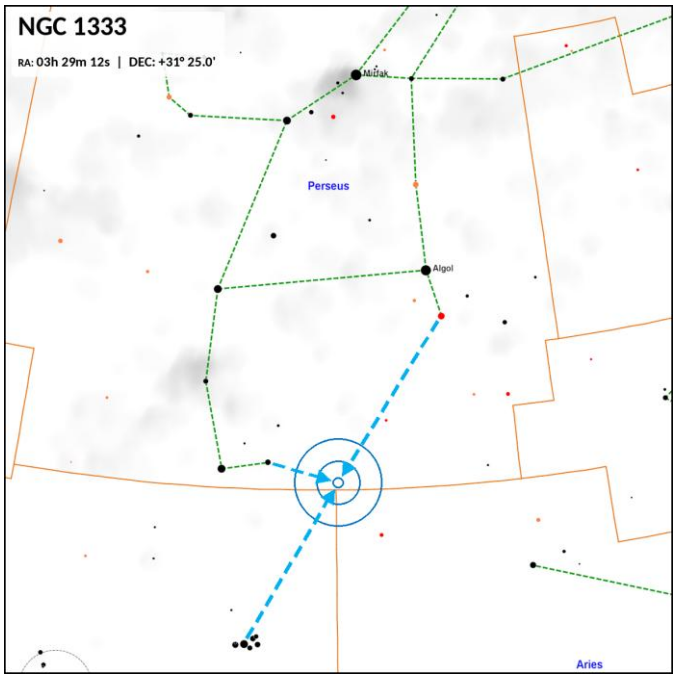
The Perseus Molecular Cloud region contains NGC 1333, Barnard 3, LDN 1468, o Persei, Barnard 4, IC 348, Barnard 5 and Zeta Persei.

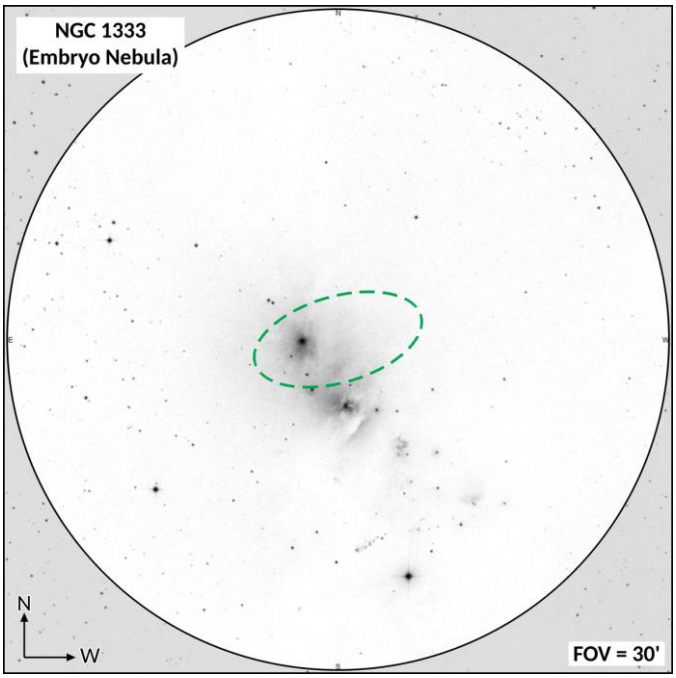
The Perseus Molecular Cloud is a chain of cold gas and dust about 1,000 light years away, covering roughly 6° by 2° of sky and holding more than 10,000 solar masses of material. It is almost invisible in ordinary light: it shows as dark nebulae that dim the stars behind them, broken by two young clusters where stars are forming now, NGC 1333 at the western end and IC 348 at the eastern end. Measured distances are about 960 light years for NGC 1333 and 1,040 light years for IC 348, so the cloud is tilted along our line of sight.

NGC 1333 is the youngest and most active part of the cloud, with many embedded protostars; IC 348 is somewhat older. Barnard 3, LDN 1468, Barnard 4 and Barnard 5 are dense dark clouds along the chain. The region needs dark skies: NGC 1333 shows as a small reflection nebula, and the dark clouds are best seen as starless patches in a low-power, wide-field view.

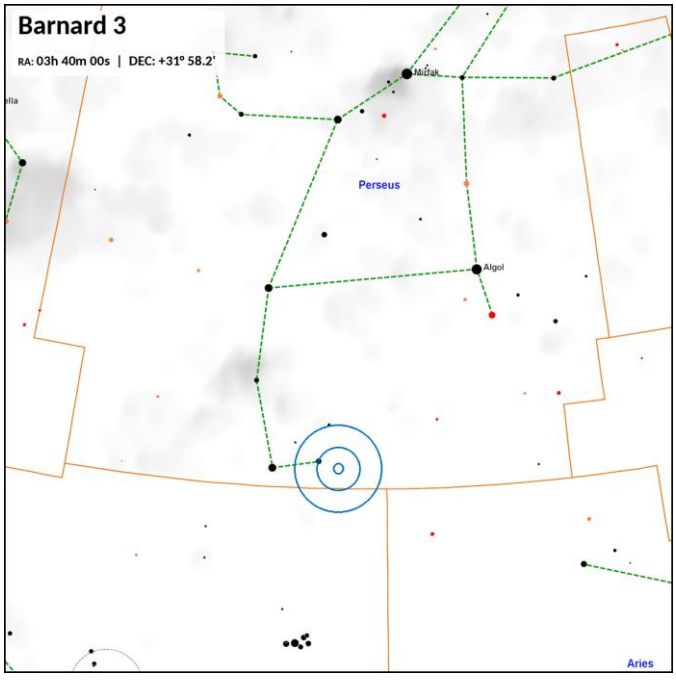
o Persei (40 Persei) and Zeta Persei are not part of the cloud. They belong to Perseus OB2, an association of hot young stars about 6 million years old just east of the cloud and at a similar distance. Per OB2 is probably an older generation from the same star-forming complex, and its stars may have helped trigger the star formation now under way in the cloud. o Persei should not be confused with Omicron Persei (Atik), the bright star beside IC 348.

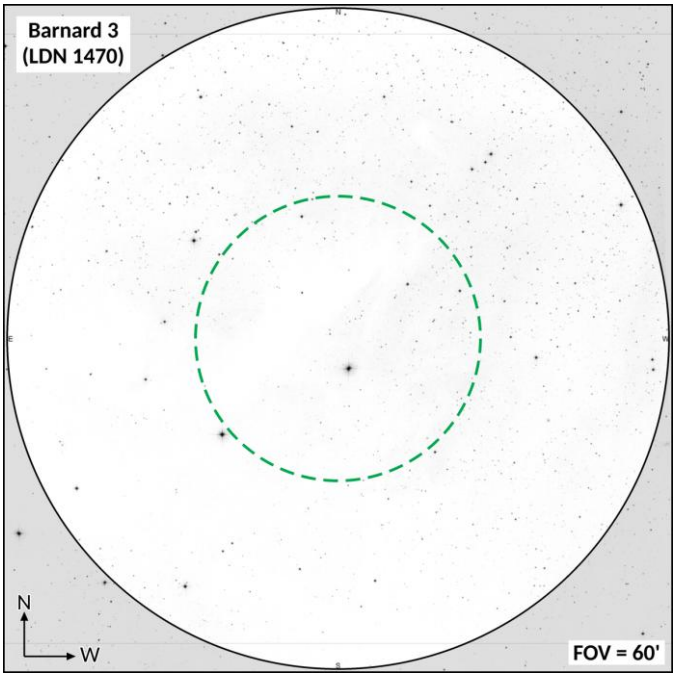
NGC 1333 (RN || Mag=5.6 | Size=6'x3' | SB=17.4 |) The Embryo Nebula is estimated to be 980 to 1,140 light years away and is a reflection nebula and is visible as a hazy patch in a small telescope. Larger aperture telescopes will show a pair of dark nebulae B1 & B2. The nebula is in the western part of the Perseus Molecular Cloud and a region of very active star formation. See map and description above.



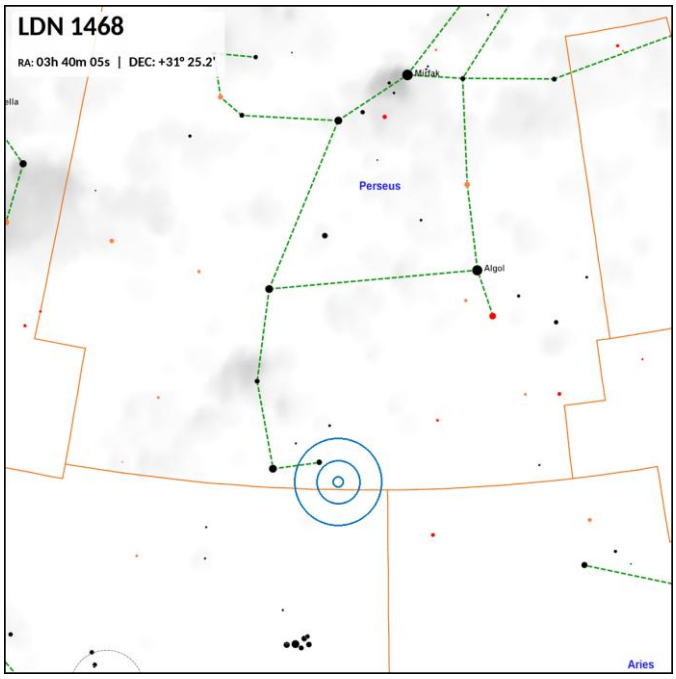


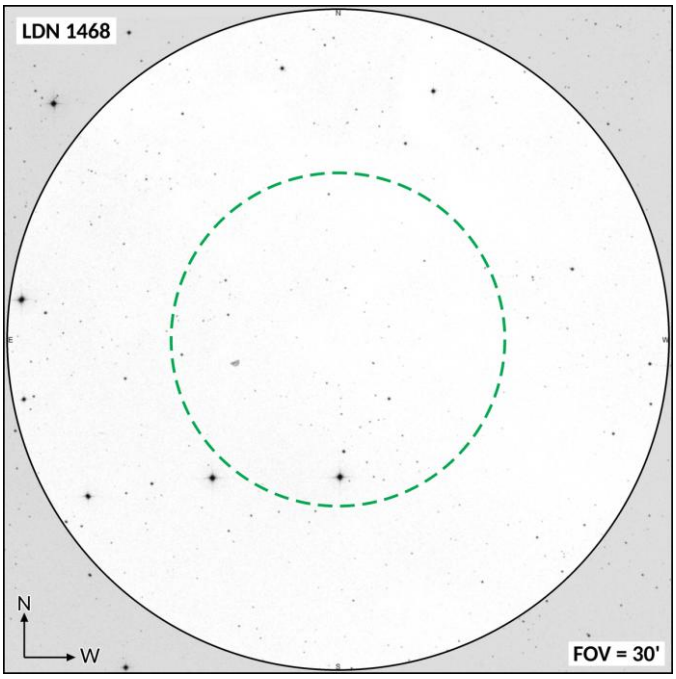
Barnard 3 (DN || Size=20' | mBortle=4 | mApt=50mm | Opacity=5 |) Located 1,000 light years away and appearing roughly 20' across, it has a diameter of roughly 6 light years. It is part of the Perseus Molecular Cloud.



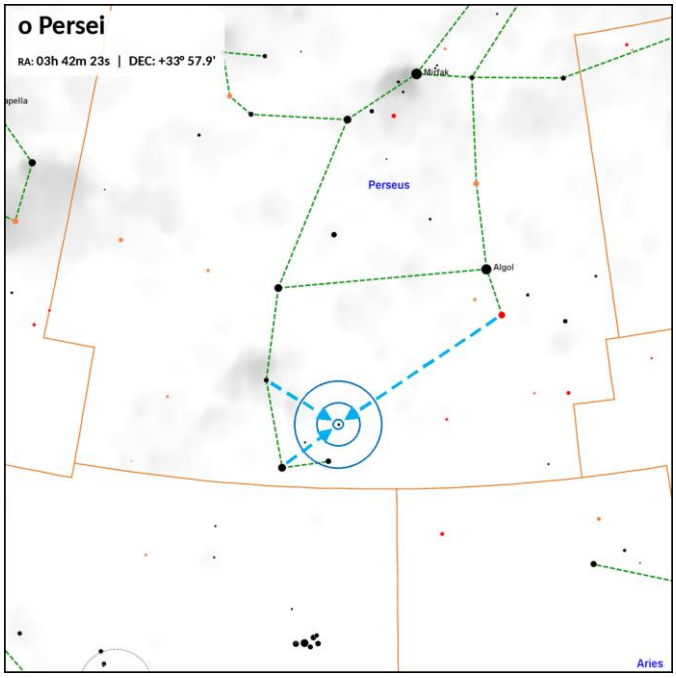


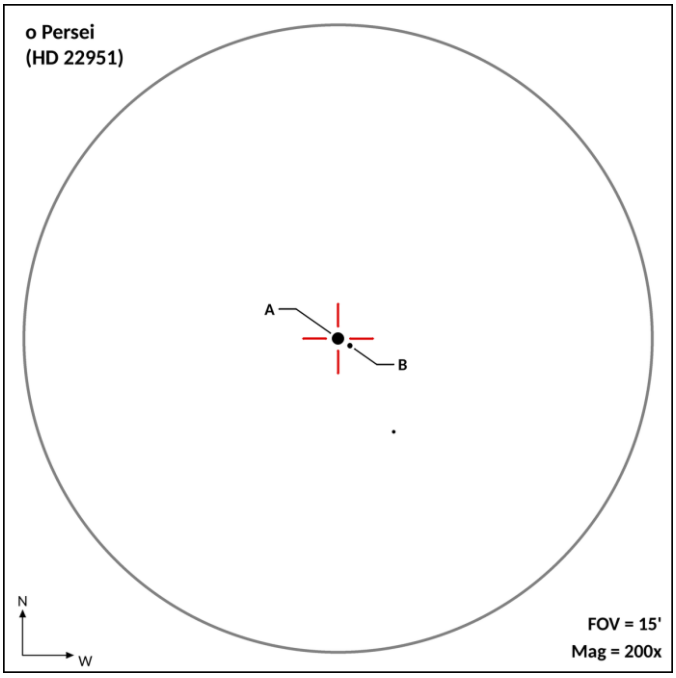
LDN 1468 (DN || Size=11.7' | mBortle=4 | mApt=50mm | Opacity=5 |) Located 1,000 light years away, this dark nebula has a diameter of roughly 3 light years and is part of the Perseus Molecular Cloud.



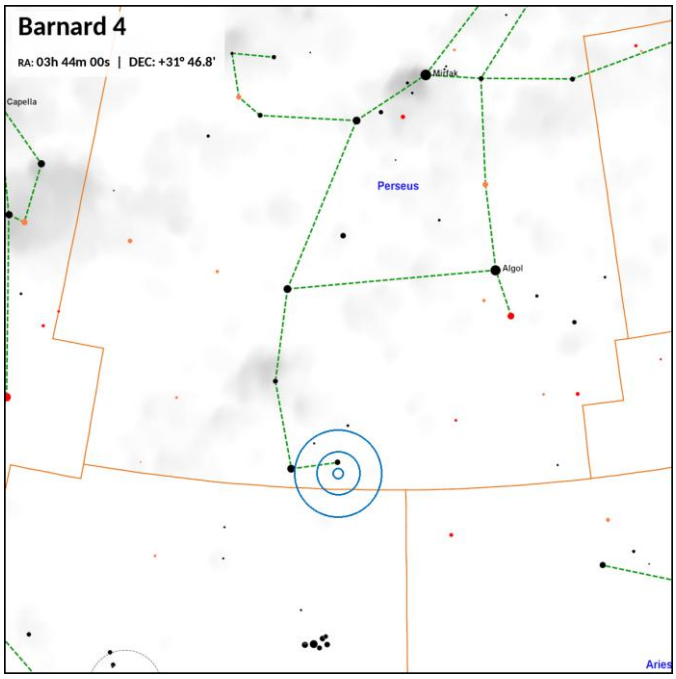


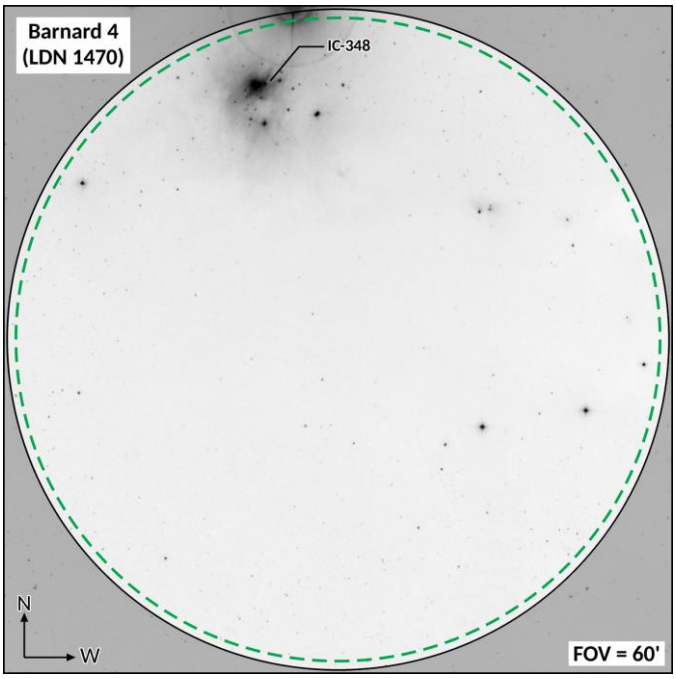
o Persei (DS || **AB** | Mag=5.0 / 10.0 | Sep=19.9" | PA=239° | mBortle=9 | mApt=50mm | RecMag=10x | Spec=B1.5IV | Color=blue-white |) A double star located 1,056 light years away is a blue-white main-sequence star 5.2 times hotter than our Sun, 4.6 times the diameter and with a mass of 17.5 Solar masses. With a Δ magnitude of about 5, the primary is about 100 times brighter than the secondary.



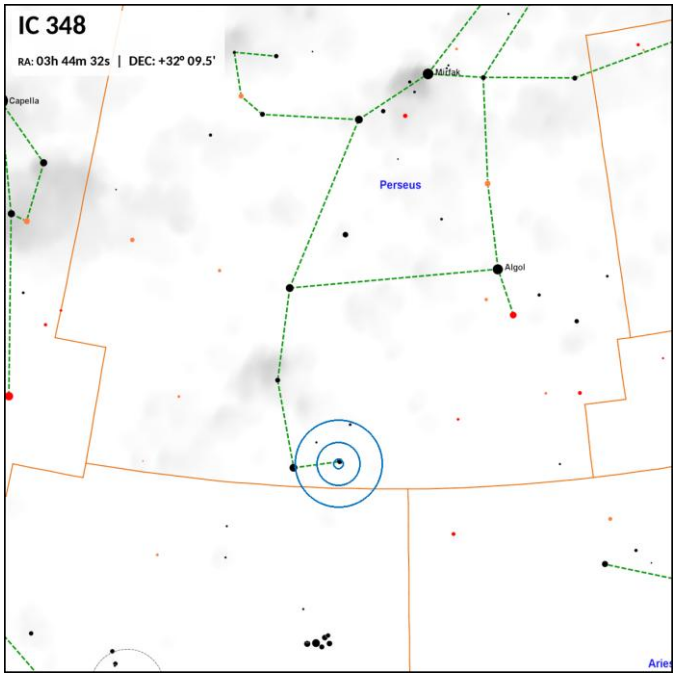


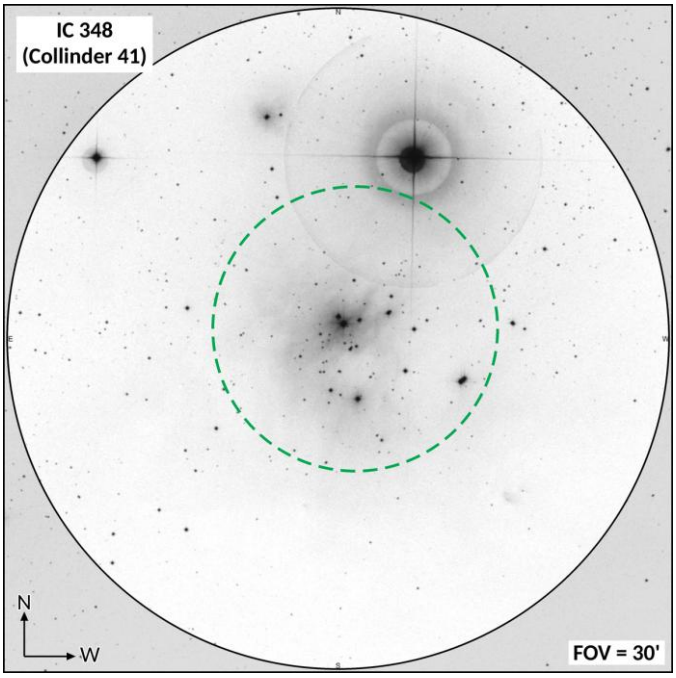
Barnard 4 (DN || Size=45'x45' | mBortle=4 | mApt=50mm | Opacity=5 |) Located 1,000 light years away, this dark nebula has a diameter of roughly 13 light years. It is part of the Perseus Molecular Cloud and is the dark cloud around the young cluster IC 348.



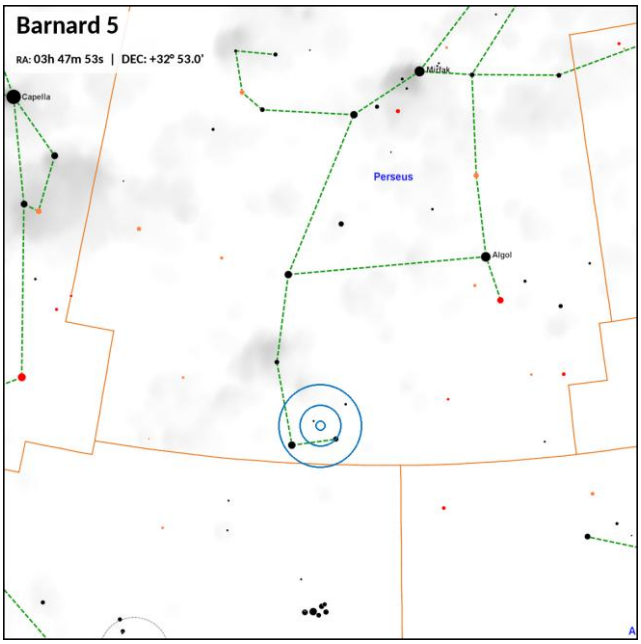


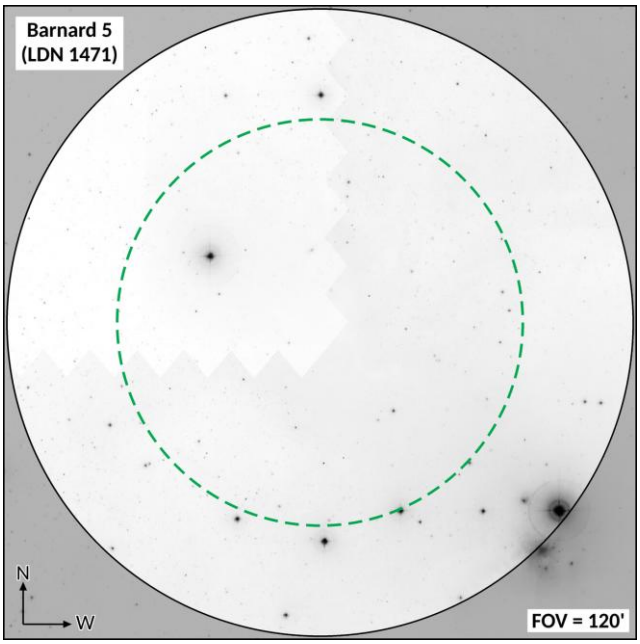
IC 348 (OC, EN || Mag=7.3 | Size=10' | SB=20.9 | mBortle=9 | mApt=80mm | MC=III2pn |) An emission nebula, this star-forming region contains an open cluster estimated to be no older than 5 million years. Trumpler Class III-Detached with no noticeable central concentration, 2-Medium range of brightness between stars, p-Poor cluster with less than 50 stars, n-Nebulosity associated with cluster.



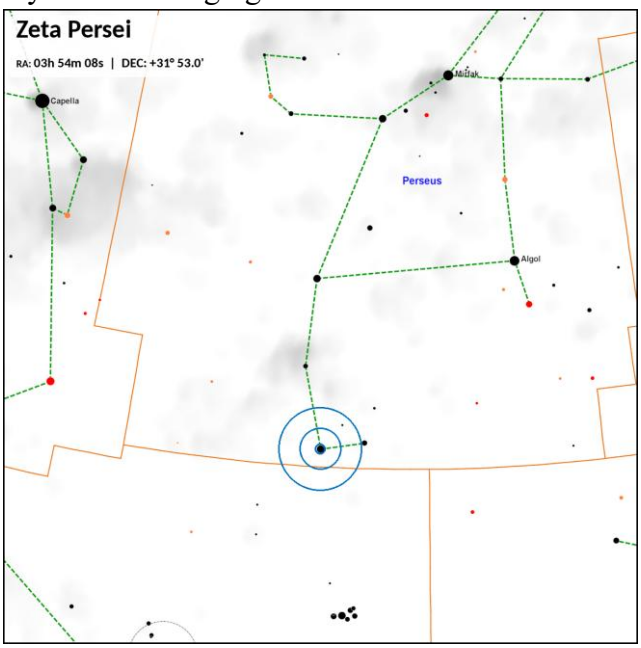


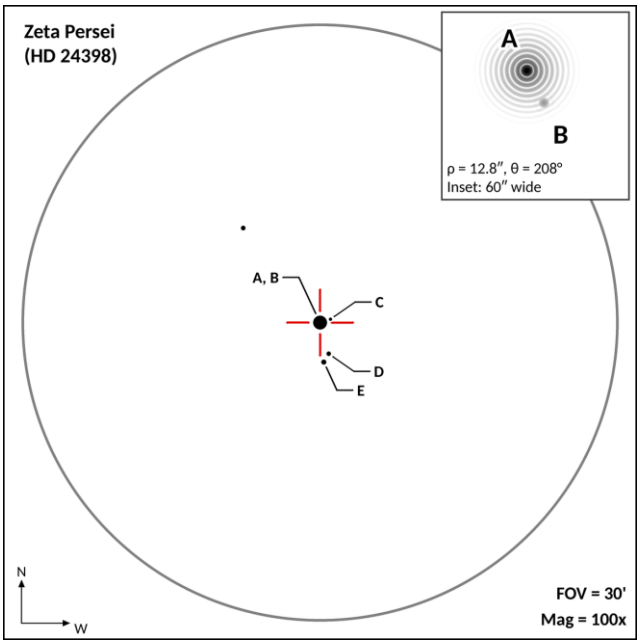
Barnard 5 (DN || Size=60' | mBortle=4 | mApt=50mm | Opacity=5 |) Located about 1,000 light years away at the eastern end of the Perseus Molecular Cloud, this dark nebula has a diameter of roughly 17 light years. It has several star forming regions inside of it, including the young star B5-IRS1 and its outflow.



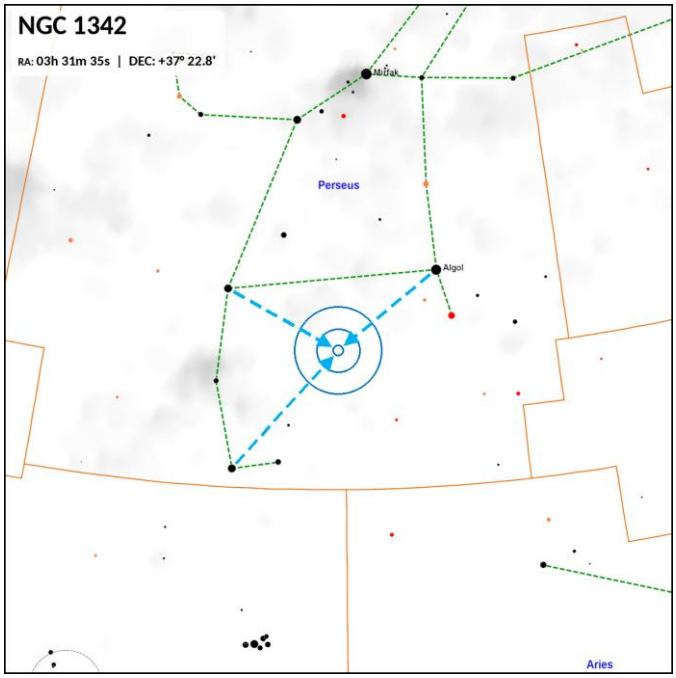


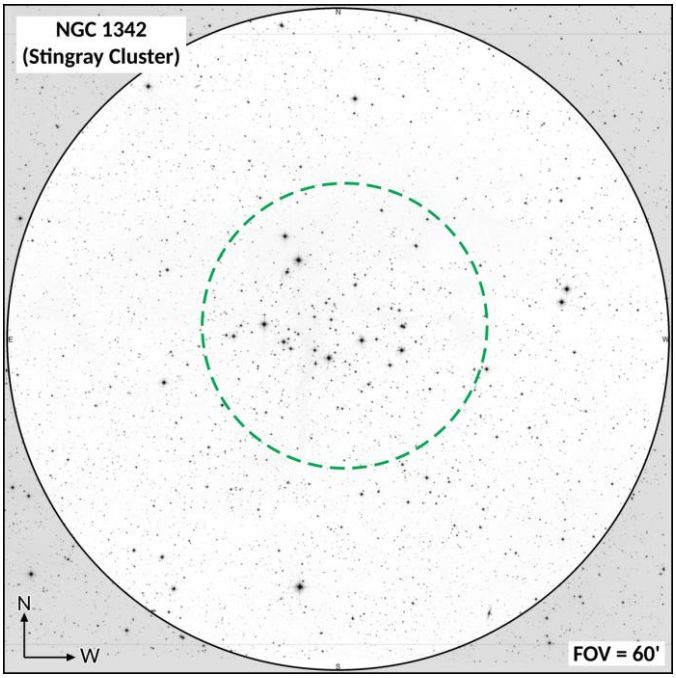
Zeta Persei (MS-5 || **AB** | Mag=2.9 / 9.2 | Sep=12.8" | PA=208° | mBortle=9 | mApt=60mm | RecMag=20x | Spec=B1Ib / B8V | Color=blue-white / blue-white || **AC** | Mag=2.9 / 11.2 | Sep=33.3" | PA=286° | mBortle=9 | mApt=80mm | RecMag=10x | Spec=B1Ib | Color=blue-white || **AD** | Mag=2.9 / 10.4 | Sep=98.6" | PA=195° | mBortle=9 | mApt=60mm | RecMag=10x | Spec=B1Ib | Color=blue-white || **AE** | Mag=2.9 / 10.0 | Sep=120" | PA=186° | mBortle=9 | mApt=50mm | RecMag=10x | Spec=B1Ib | Color=blue-white |) Physical pairs: AB, AD, AE, the AC pair is undetermined. The large magnitude differences between the pairs will make this multiple star system challenging to view.



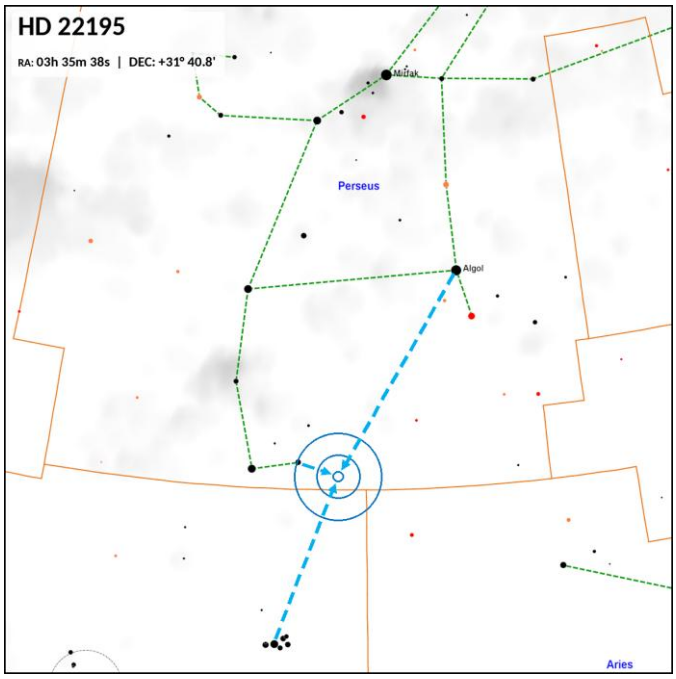


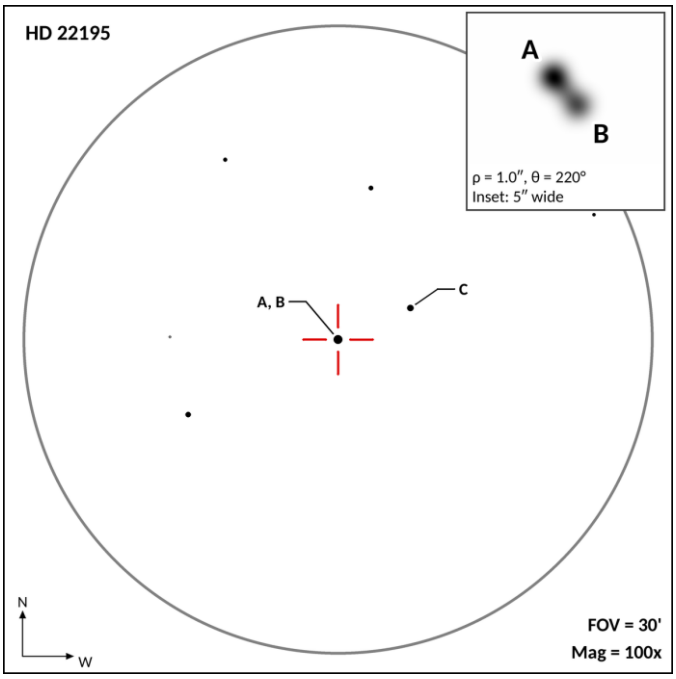
NGC 1342 (OC || Mag=6.7 | Size=20' | SB=21.8 | mBortle=9 | mApt=60mm | MC=III2m |) The Stingray Cluster consists of about 60 stars. Trumpler Class III-Detached with no noticeable central concentration, 2-Medium range of brightness between stars, m-Moderately rich cluster with 50 to 100 stars.



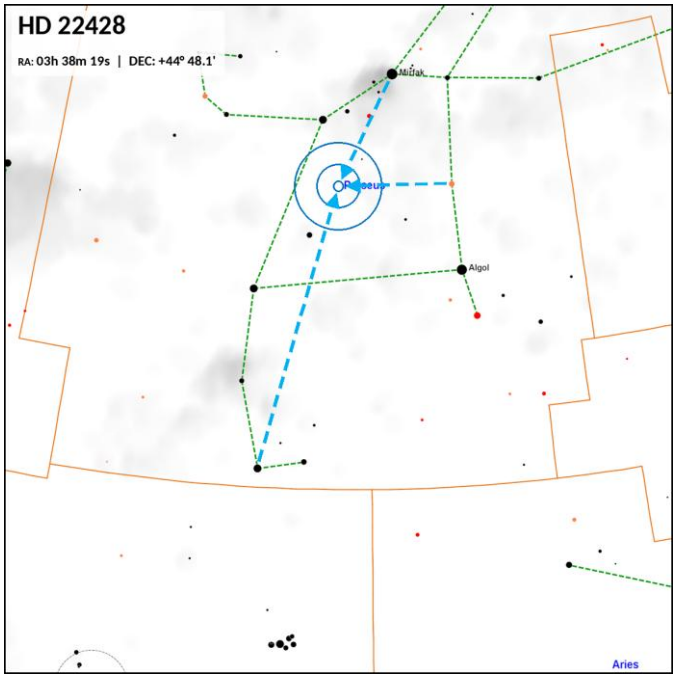


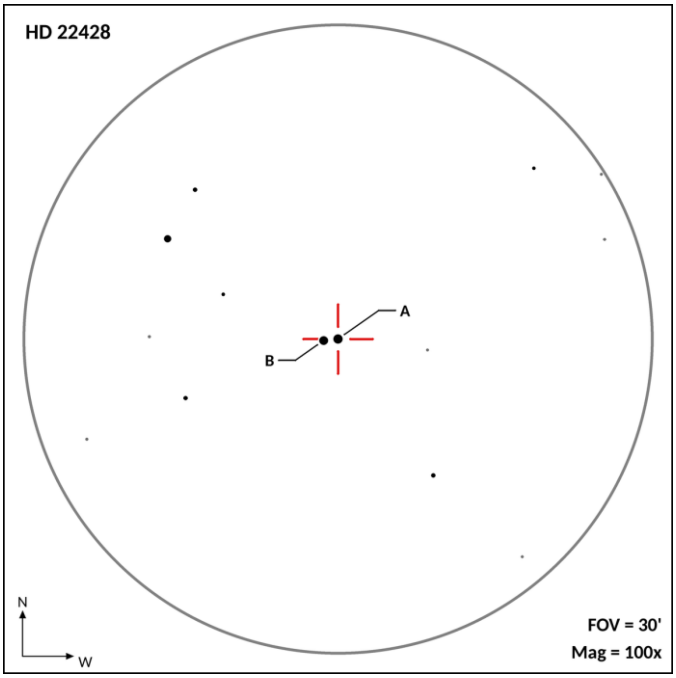
HD 22195 (MS-3 || **AB** | Mag=7.6 / 7.7 | Sep=1" | PA=220° | mBortle=9 | mApt=130mm | RecMag=240x | Spec=F4V | Color=yellow-white || **AC** | Mag=7.6 / 9.2 | Sep=225" | PA=294° | mBortle=9 | mApt=50mm | RecMag=10x | Spec=F4V | Color=yellow-white |) Located 280 light years away and is a triple star system where all three components are physically associated. The AB component has an orbital period of 463 years; the AC orbital period has not been determined.



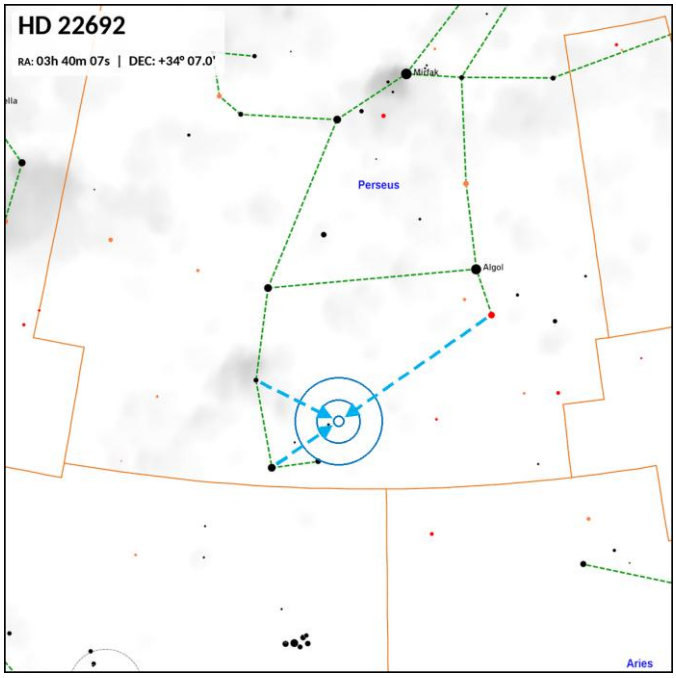


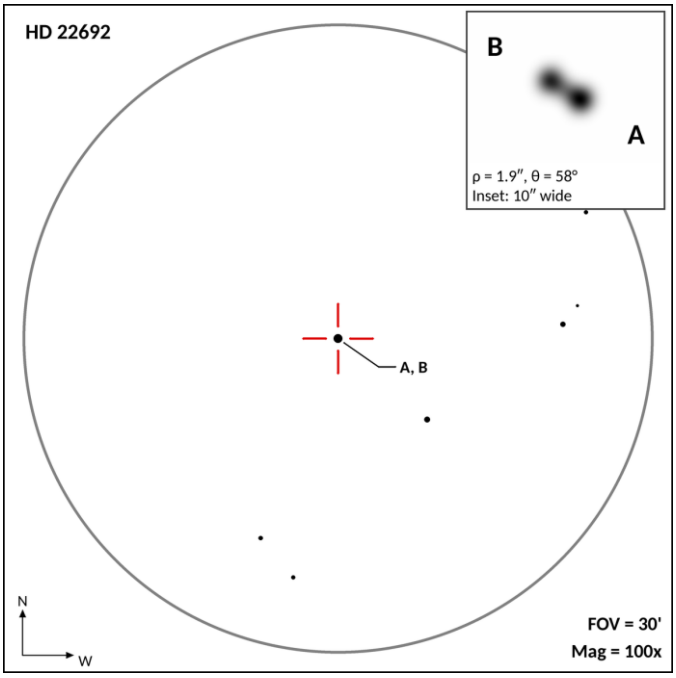
HD 22428 (DS || **AB** | Mag=7.2 / 7.5 | Sep=41.1" | PA=96° | mBortle=9 | mApt=50mm | RecMag=10x | Spec=A0 | Color=white |) Located 500 light years away, this is a physical double. The primary is a white star with an energy output 26 times the Sun's luminosity.



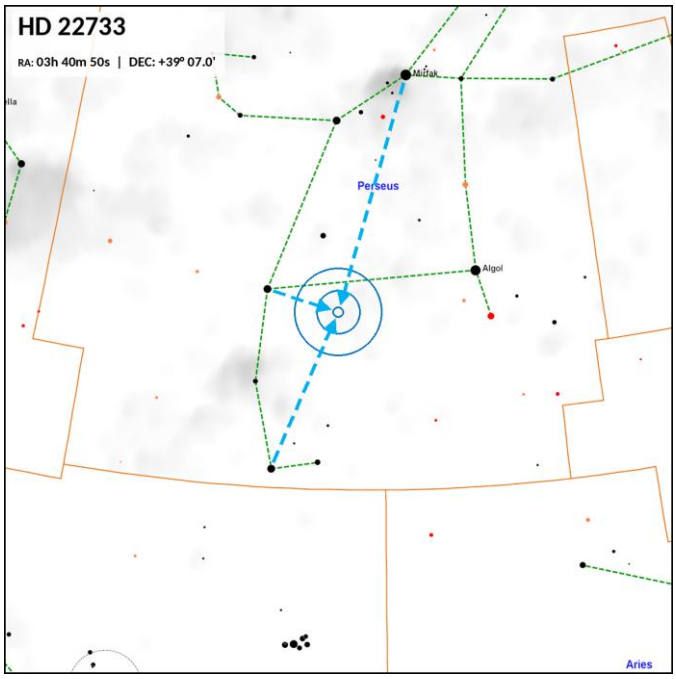


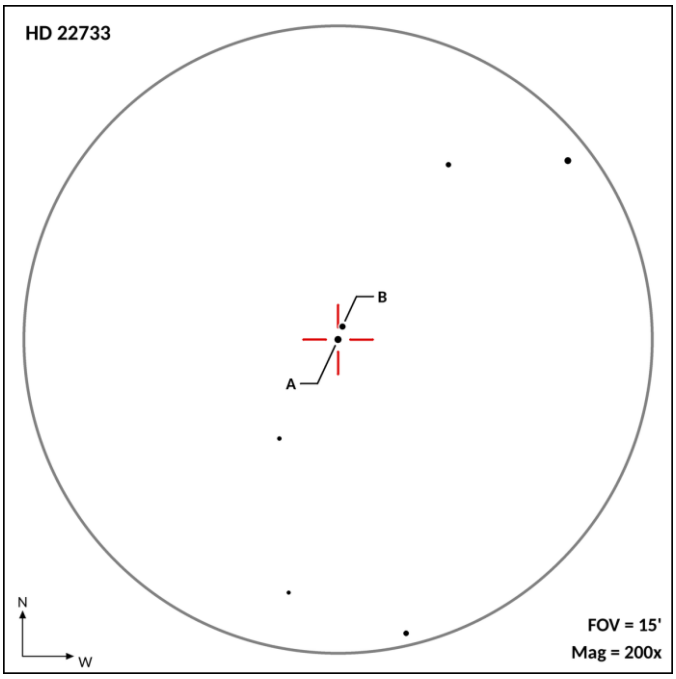
HD 22692 (DS || **AB** | Mag=7.5 / 7.6 | Sep=1.9" | PA=58° | mBortle=9 | mApt=70mm | RecMag=130x | Spec=F9V | Color=yellow-white |) Located 150 light years away the AB components in this system are physical with an orbital period of 947 years.



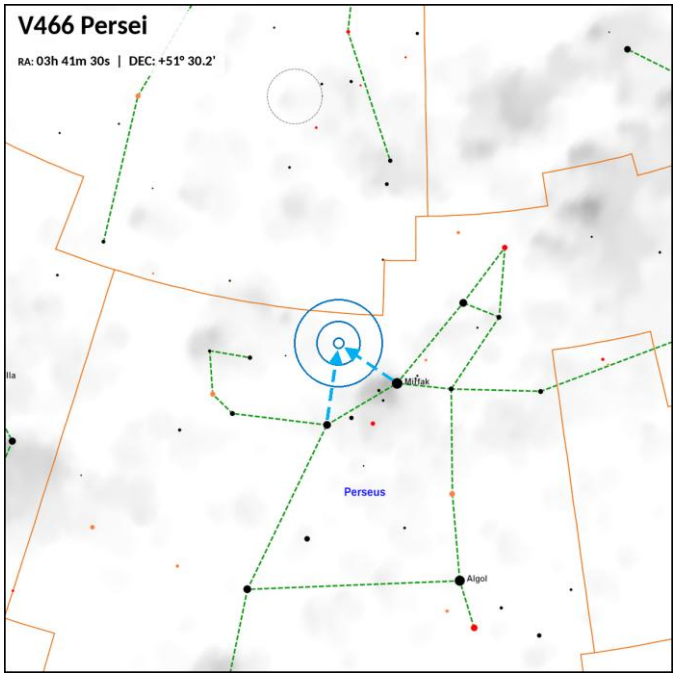


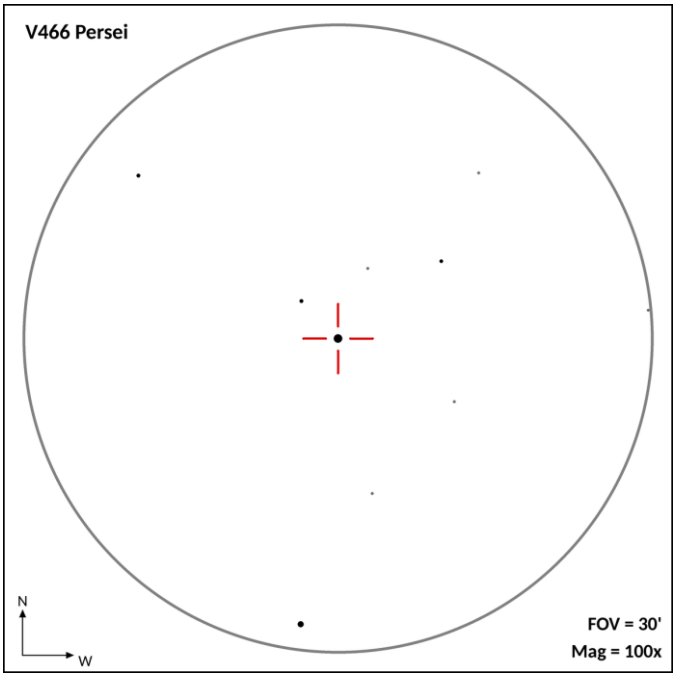
HD 22733 (DS || **AB** | Mag=8.7 / 9.4 | Sep=19.6" | PA=341° | mBortle=9 | mApt=50mm | RecMag=10x | Spec=A7IV | Color=white |) Located 560 light years away, this double is physical. The primary is a white subgiant with a luminosity 46 times that of our Sun's and 1.8 Solar masses.



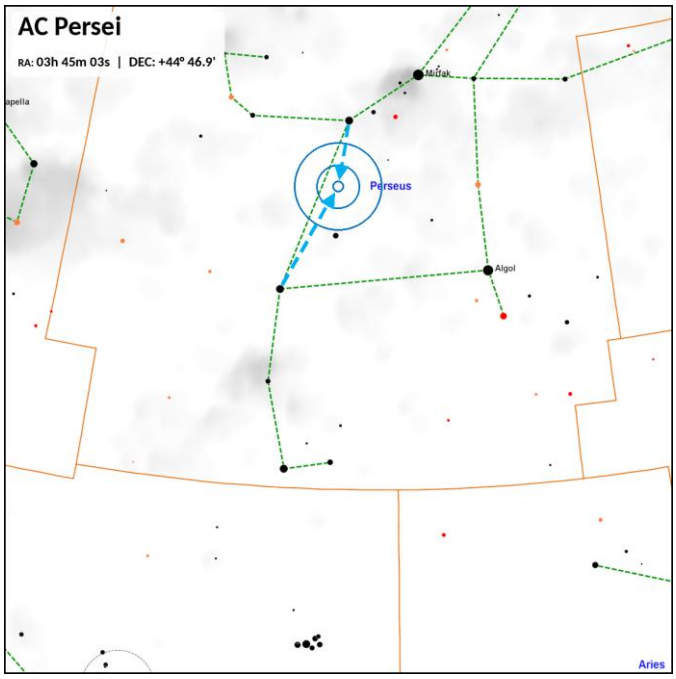


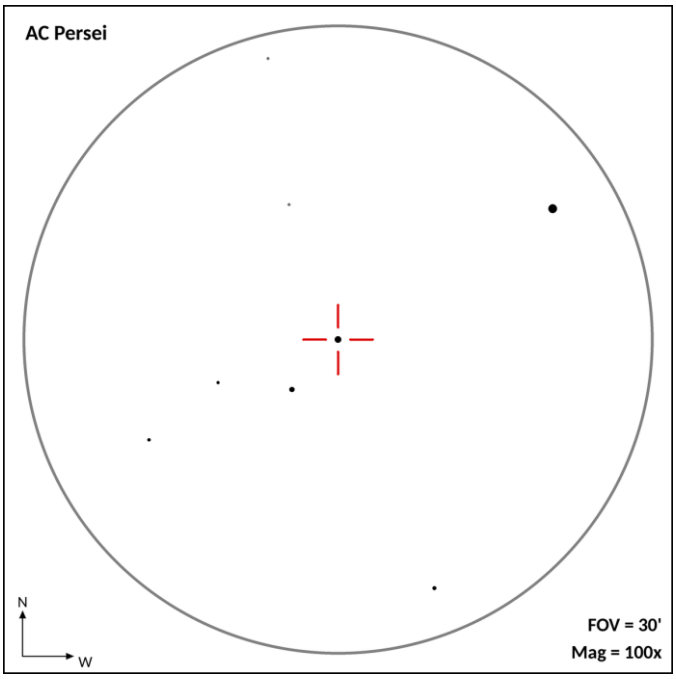
V466 Persei (CS, VS || Magnitude Range= 7.6 to 9.1 | Spec=C5,5(N5) | BV=+4.25 | Color=deep red |) Located 2,200 light years away this is a pulsating semi-regular variable star with an irregular or unknown period. BV=+4.25 indicating a color of Deep Red.



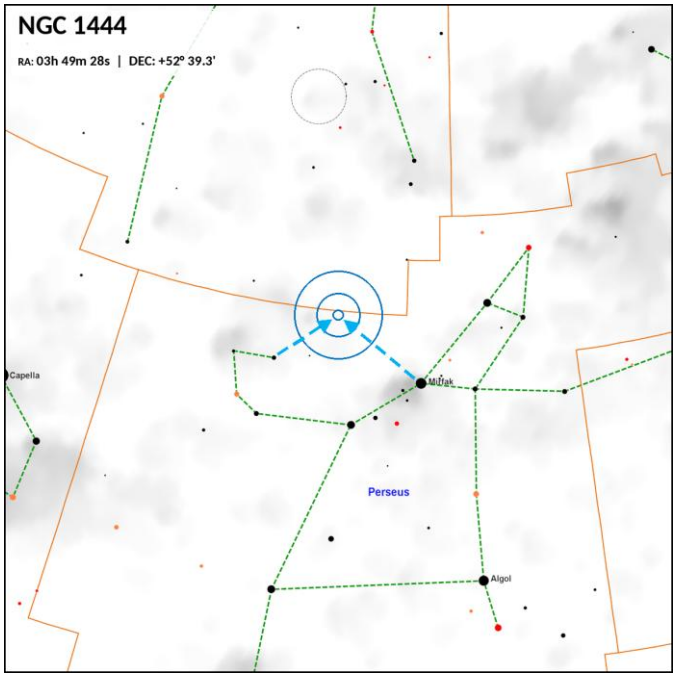


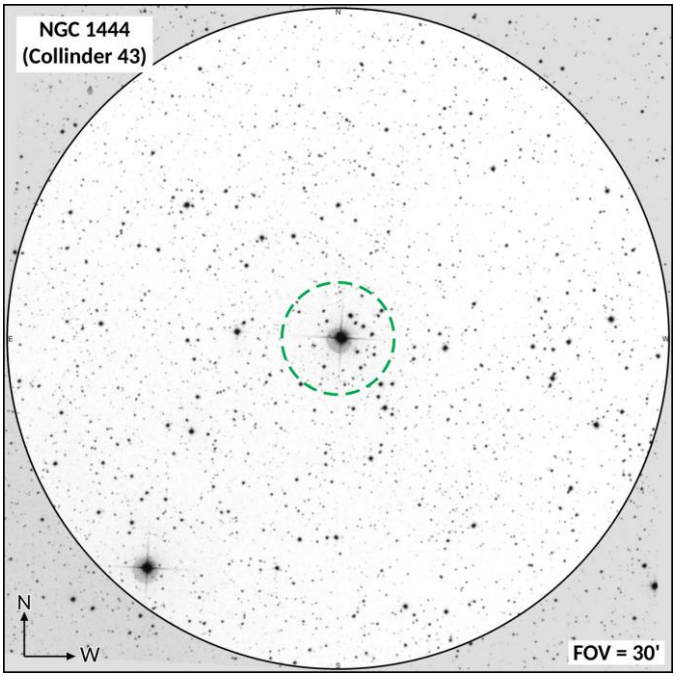
AC Persei (CS, VS || Magnitude Range= 9.0 to 9.6 | Spec=C6,3(N3) | BV=+3.09 | Color=red |) Located 4,300 light years away this is a pulsating long-period variable star with an irregular or unknown period. BV=+3.09 indicating a color of Red.



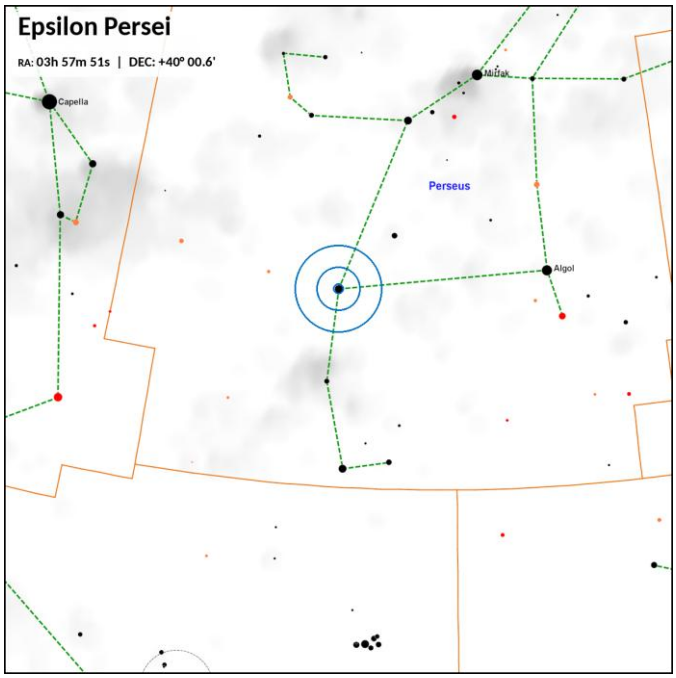


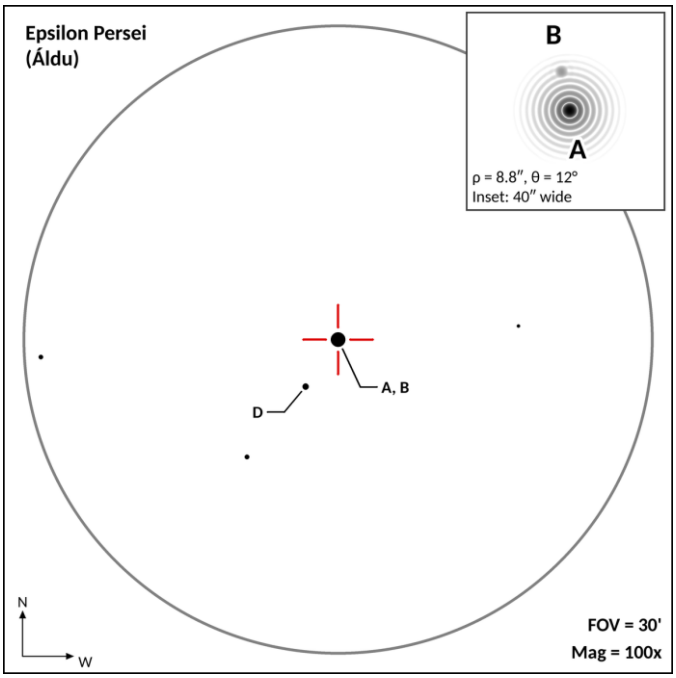
NGC 1444 (OC || Mag=6.6 | Size=4' | SB=18.2 | mBortle=9 | mApt=60mm | MC=IV1p |) A small open cluster that may be better viewed in larger telescopes. Trumpler Class IV-Not well detached from the surrounding star field, 1-Small range of brightness between stars, p-Poor cluster with less than 50 stars.



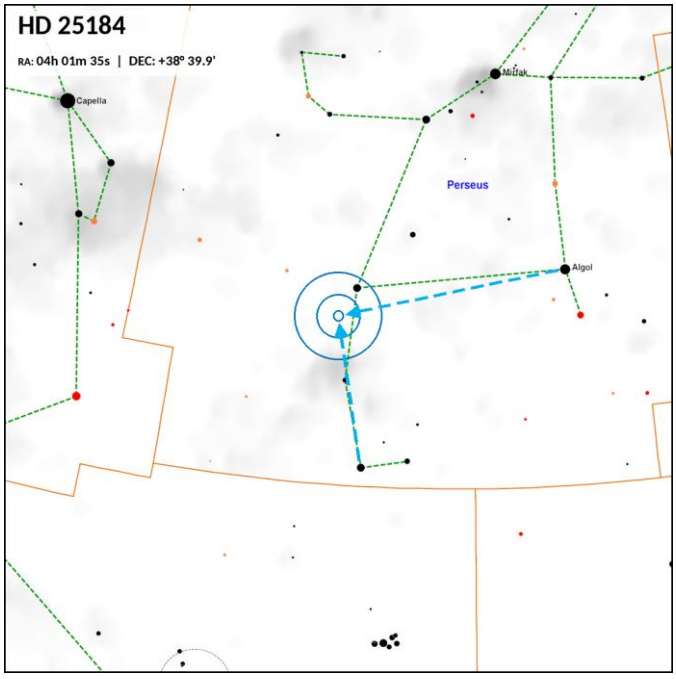


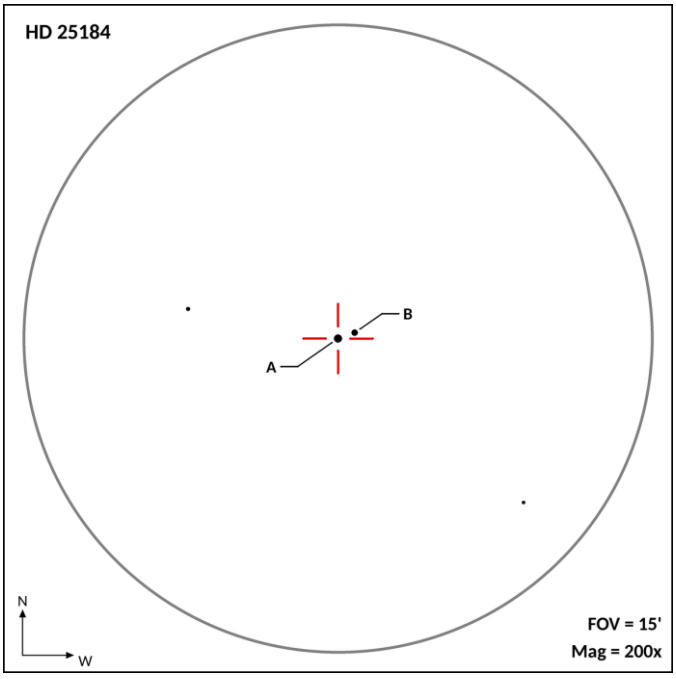
Epsilon Persei (MS-3 || **AB** | Mag=2.9 / 8.9 | Sep=8.8" | PA=12° | mBortle=9 | mApt=80mm | RecMag=30x | Spec=B0.5V / A2V | Color=blue-white / white || **AD** | Mag=2.9 / 9.3 | Sep=163.2" | PA=146° | mBortle=9 | mApt=50mm | RecMag=10x | Spec=B0.5V | Color=blue-white |) The AD pair is physical, the AB pair is undetermined. The primary is a B0.5 V hydrogen-fusing star with a temperature of 27,600 K, one of the hottest stars visible to the naked eye.



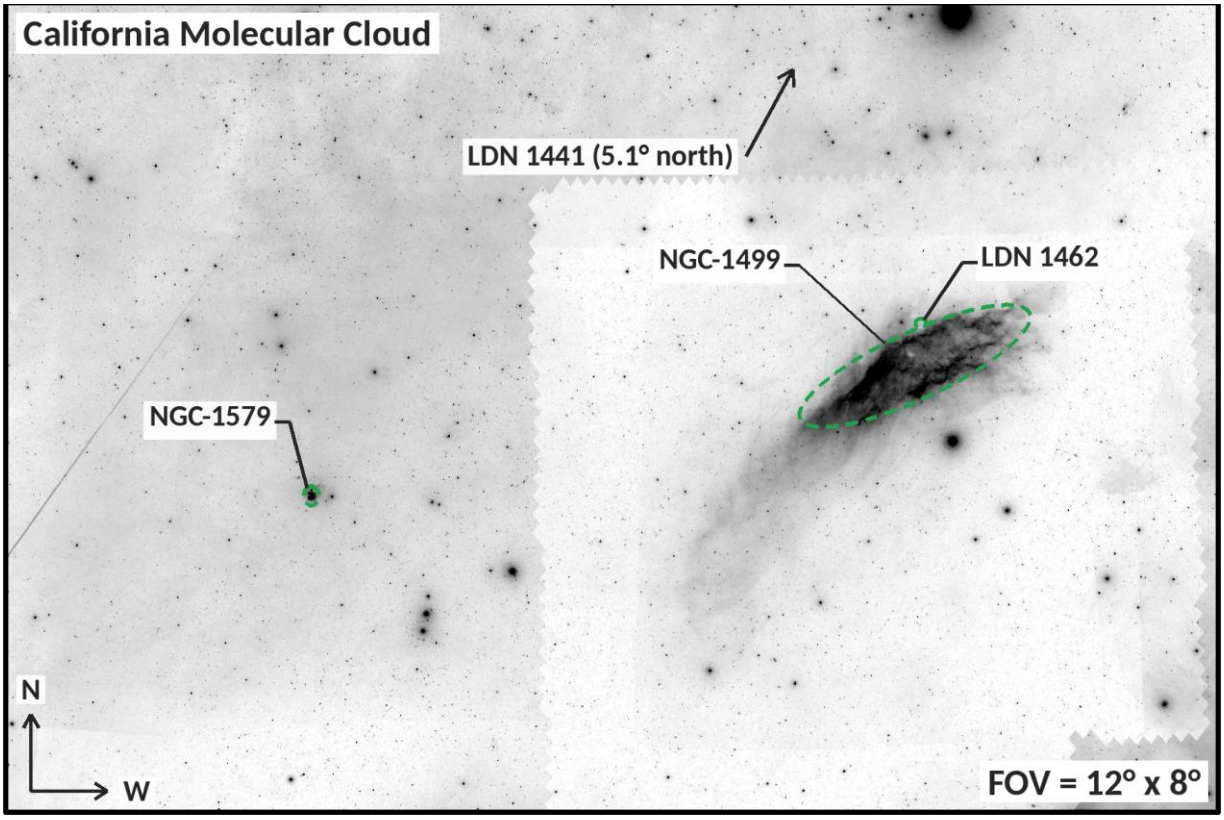


HD 25184 (DS || **AB** | Mag=8.0 / 9.2 | Sep=25.9" | PA=289° | mBortle=9 | mApt=50mm | RecMag=10x | Spec=K2 | Color=orange |) Located 1,300 light years away. This is an optical double. The primary is an orange star with an energy output of 14 times the Sun's luminosity.





California Molecular Cloud



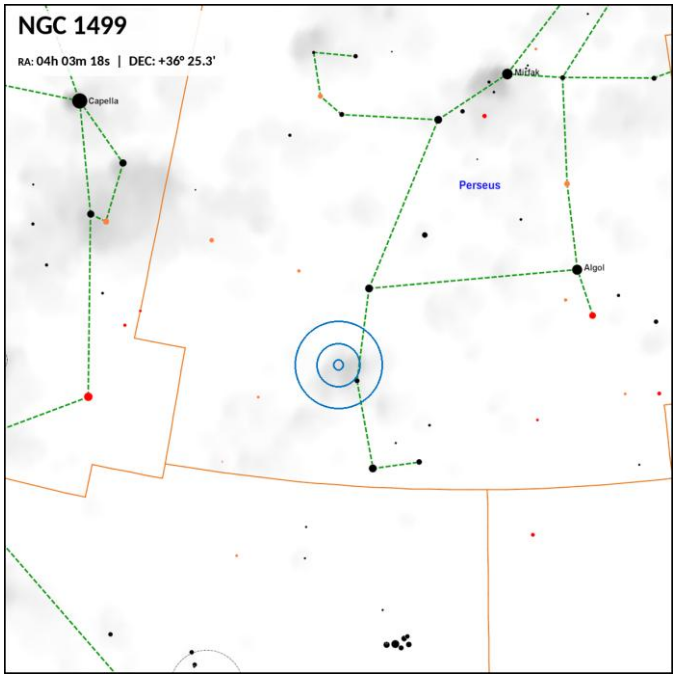
The California Molecular Cloud region contains NGC 1499, LDN 1441, LDN 1462 and NGC 1579.

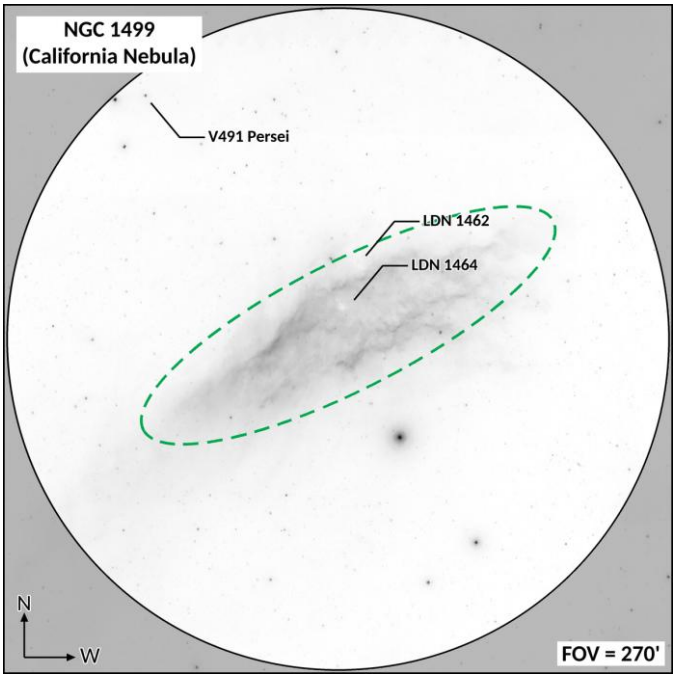
The California Molecular Cloud is a giant molecular cloud about 1,500 light years (450 pc) away, roughly 260 light years long and holding about 100,000 solar masses of gas and dust. It was recognized as a single cloud only in 2009, from extinction maps by Charles Lada and colleagues, and is named after the California Nebula on its southern edge. In size and mass it rivals the Orion A cloud, the largest in the Sun's neighborhood, yet it forms ten or more times fewer young stars.

NGC 1499, the California Nebula, is the cloud's brightest visible part: hydrogen gas lit by Xi Persei, a hot runaway star from the Perseus OB2 association that is passing near the cloud rather than born in it. The nebula is about 2.5° long but has a low surface brightness; it is best seen at low power with a hydrogen-beta filter, or in binoculars under dark skies.

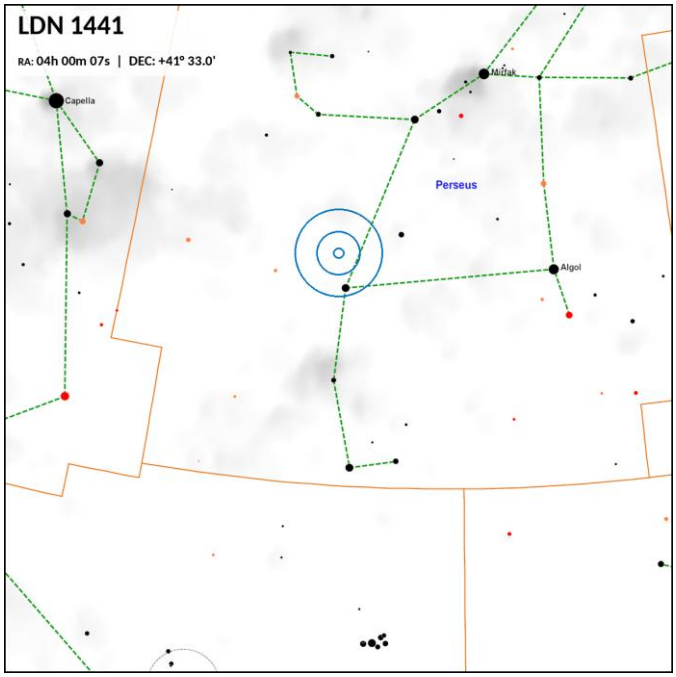
Of the guide's members, LDN 1441 lies in the cloud's northern part, and NGC 1579, a reflection nebula around the young star LkHα 101 and its embedded cluster, sits at the eastern edge in the L1482 filament, the cloud's most active star-forming region. LDN 1462, beside NGC 1499, is a probable member; it is not on the published list of the cloud's dark clouds.

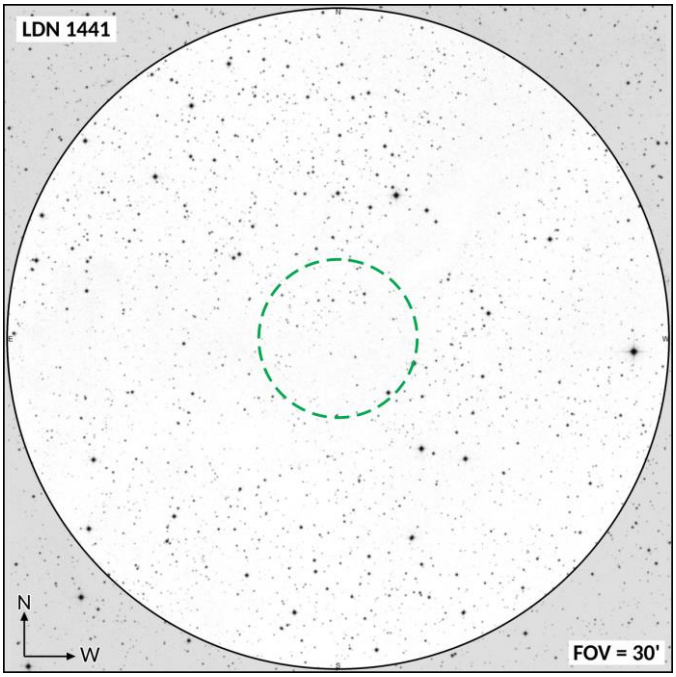
NGC 1499 (EN || Mag=6.0 | Size=144'x40' | SB=24.0 |) The California Nebula is an emission nebula named for its resemblance to the state of California in long-exposure photographs. This is a difficult object to view due to its low surface brightness. A rich-field telescope under dark skies with an H-beta filter is recommended. See map and description above.



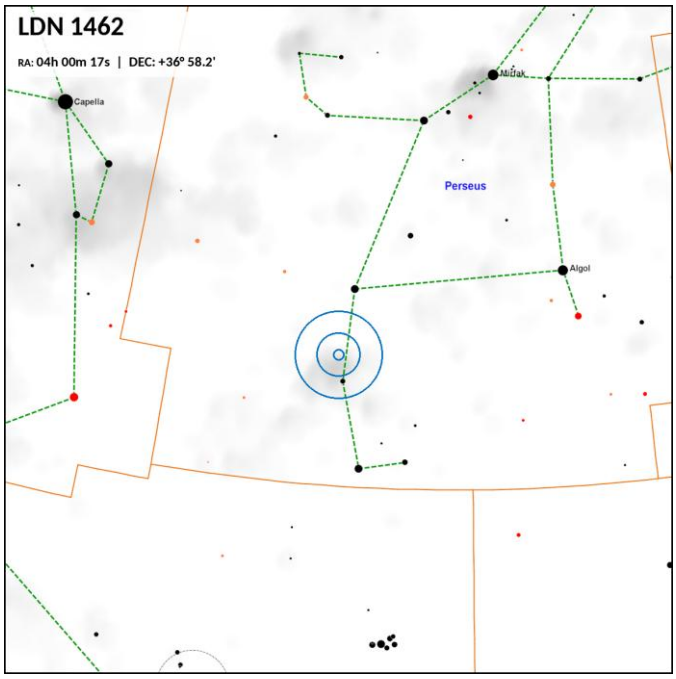


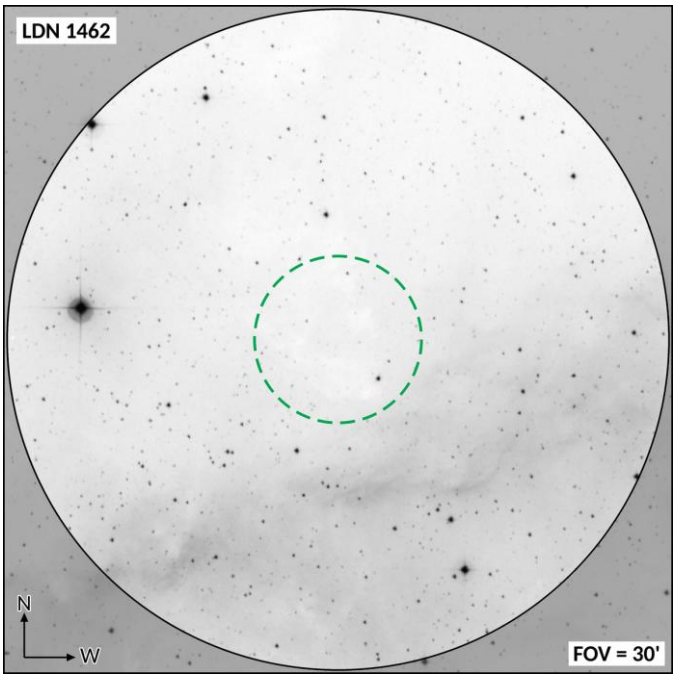
LDN 1441 (DN || Size=5.6' | mBortle=4 | mApt=50mm | Opacity=5 |) Located about 1,500 light years away, this dark nebula has a diameter of roughly 2.5 light years and is part of the California Molecular Cloud.



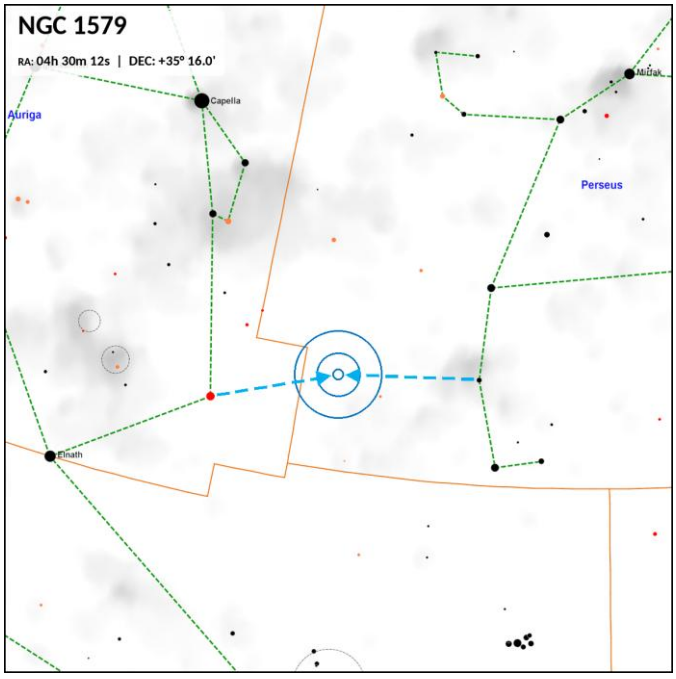


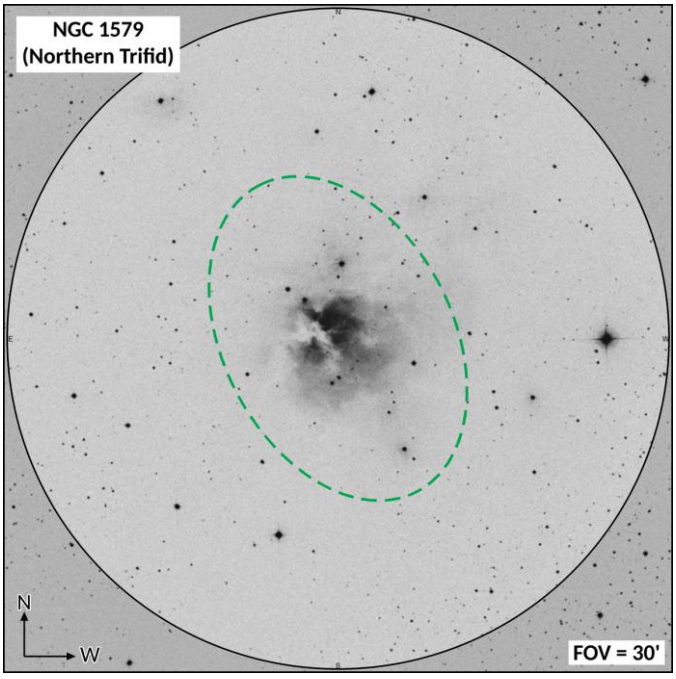
LDN 1462 (DN || Size=5.9' | mBortle=4 | mApt=50mm | Opacity=5 |) Probably part of the California Molecular Cloud about 1,500 light years away, this dark nebula would then have a diameter of roughly 2.6 light years.



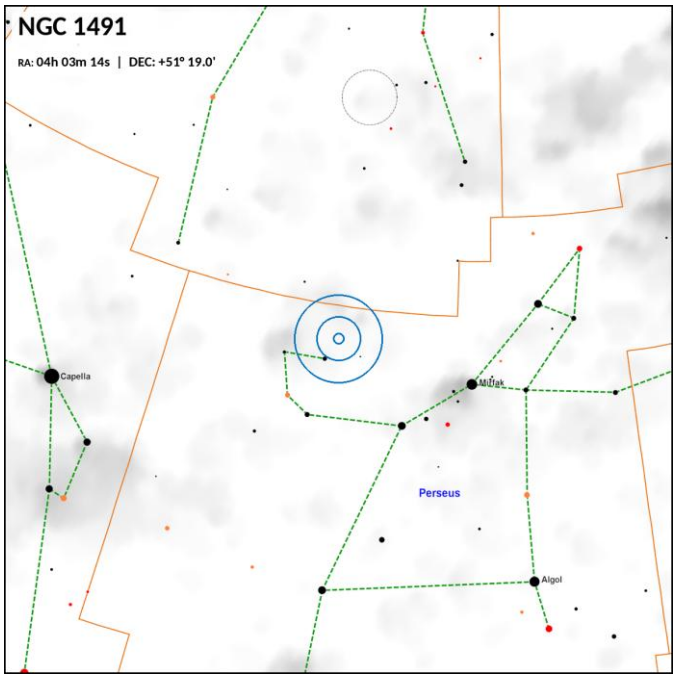


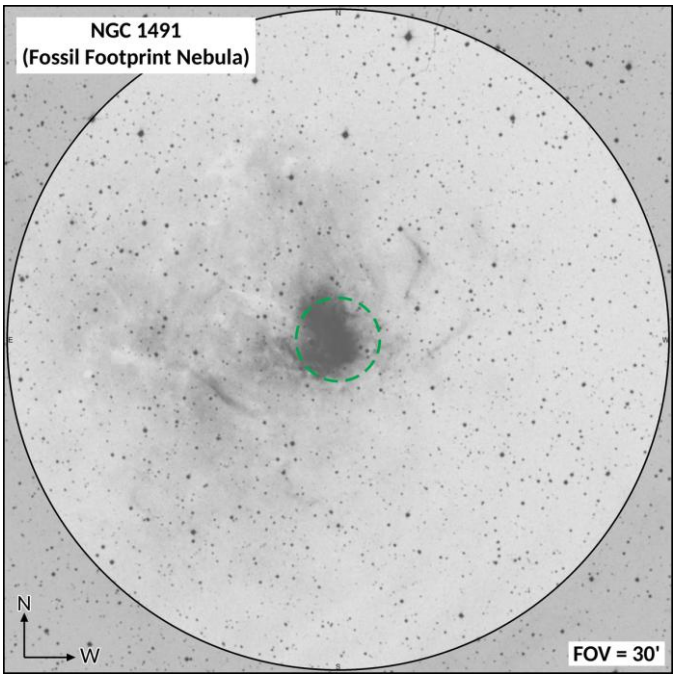
NGC 1579 (RN, EN || Mag=9.9 | Size=12'x8' | SB=23.5 |) The Northern Trifid is similar in appearance to the Trifid Nebula; several faint stars are embedded in the nebula. NGC 1579 lies within a giant molecular cloud known as the California Molecular Cloud.



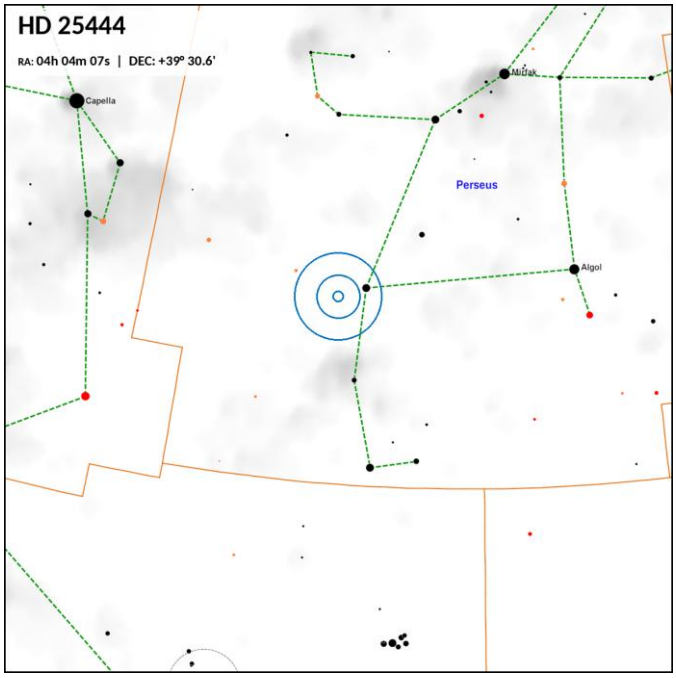


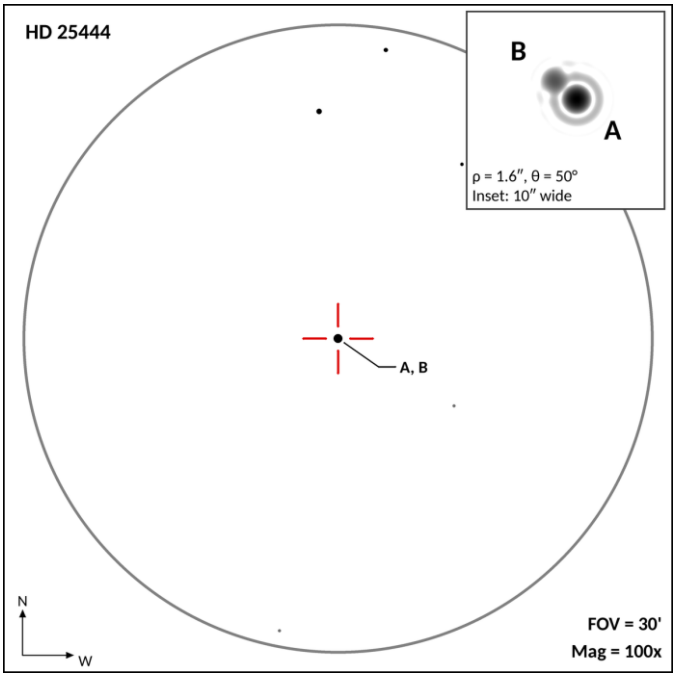
NGC 1491 (EN || Mag=10.0 | Size=3' | SB=21.0 |) The Fossil Footprint Nebula is an emission nebula located 9,800 light years away and contains many massive stars producing large amounts of ultraviolet radiation energizing the gas in the nebula.



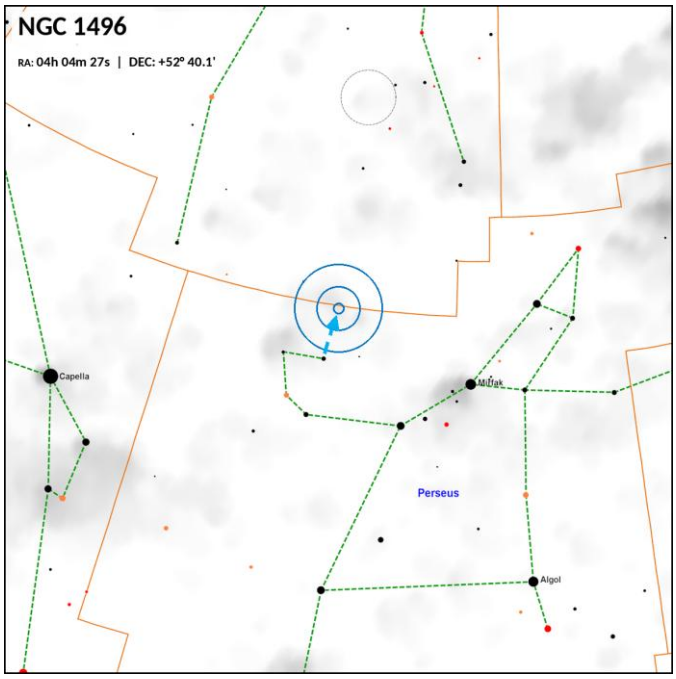


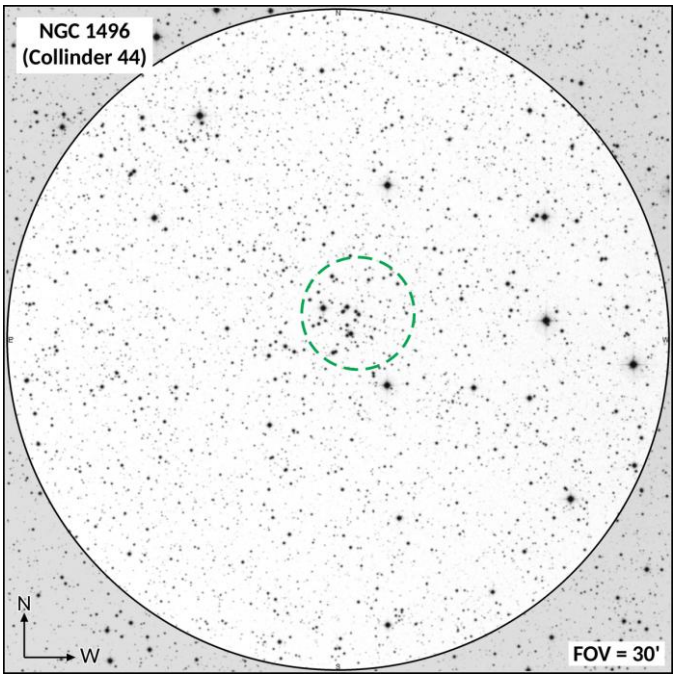
HD 25444 (DS || **AB** | Mag=7.4 / 9.4 | Sep=1.6" | PA=50° | mBortle=9 | mApt=150mm | RecMag=150x | Period=440y | Spec=G5 | Color=yellow |) Located 106 light years away, this binary system has an orbital period of 440 years. The primary is a yellow star with an energy output of 1.2 times that of our Sun's luminosity.



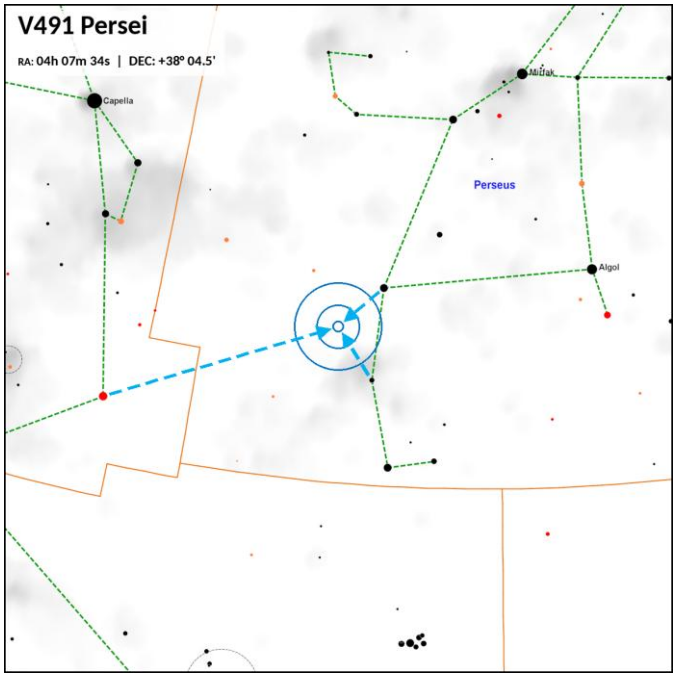


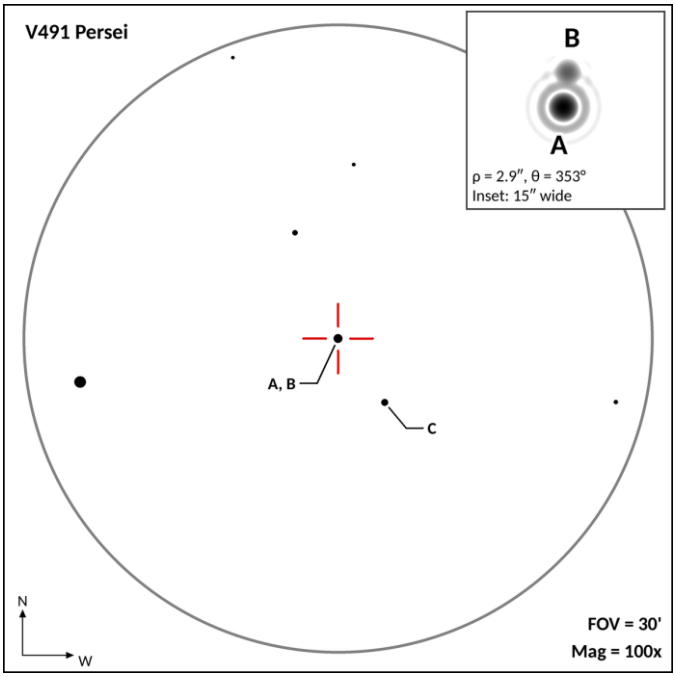
NGC 1496 (OC || Mag=9.6 | Size=4' | SB=21.2 | mApt=250mm | MC=III2p |) Located 4,000 light years away with an estimated physical diameter of 4.7 light years. Trumpler Class III-Detached with no noticeable central concentration, 2-Medium range of brightness between stars, p-Poor cluster with less than 50 stars.



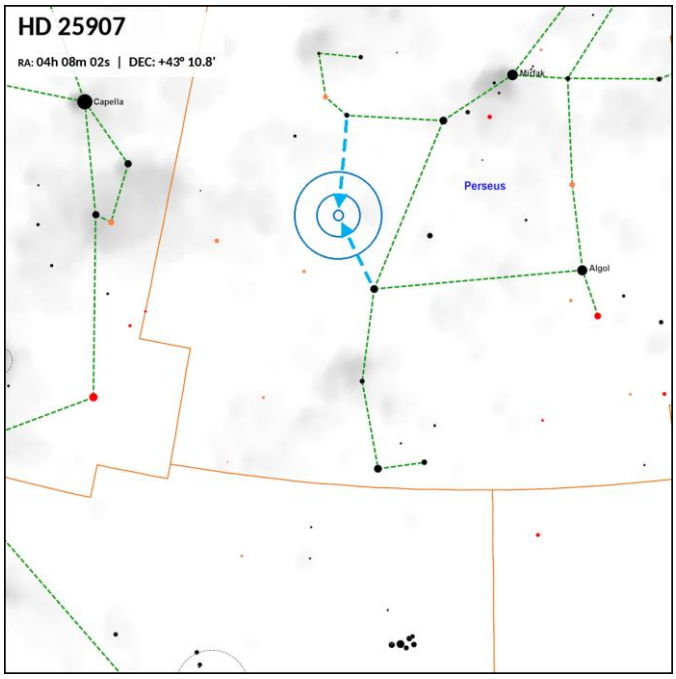


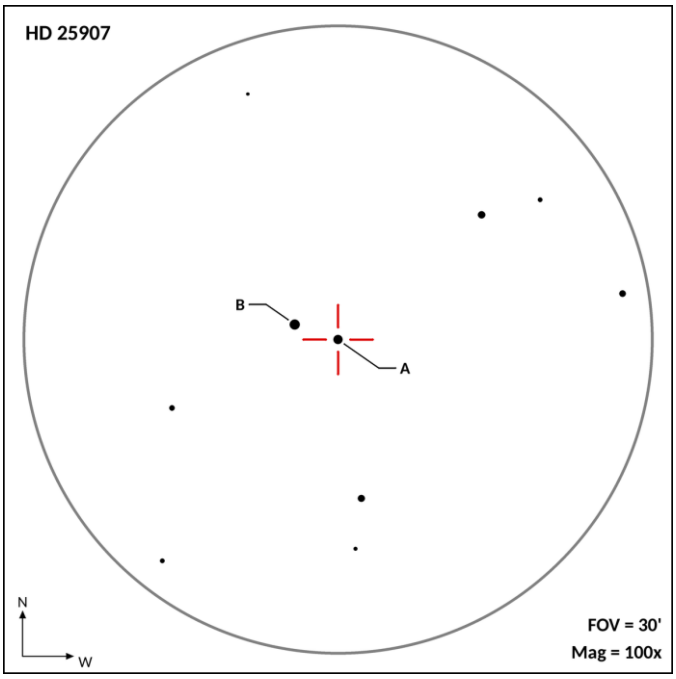
V491 Persei (MS-3 || **AB** | Mag=7.3 / 9.7 | Sep=2.9" | PA=353° | mBortle=9 | mApt=102mm | RecMag=80x | Period=590y | Spec=K1V | Color=orange || **AC** | Mag=7.3 / 8.8 | Sep=225.1" | PA=217° | mBortle=9 | mApt=50mm | RecMag=10x | Spec=K1V | Color=orange |) Located 67 light years away, the AB pair is physical with an orbital period of 590 years. The AC pair is not physical.



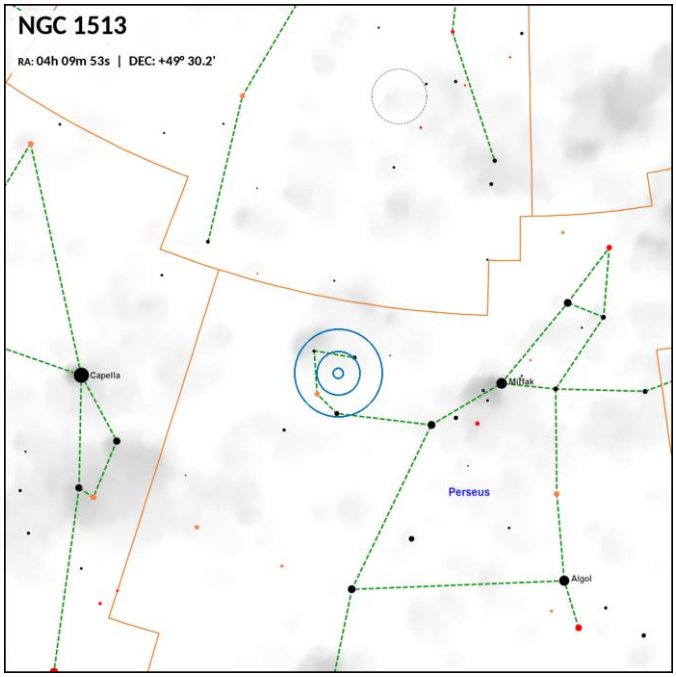


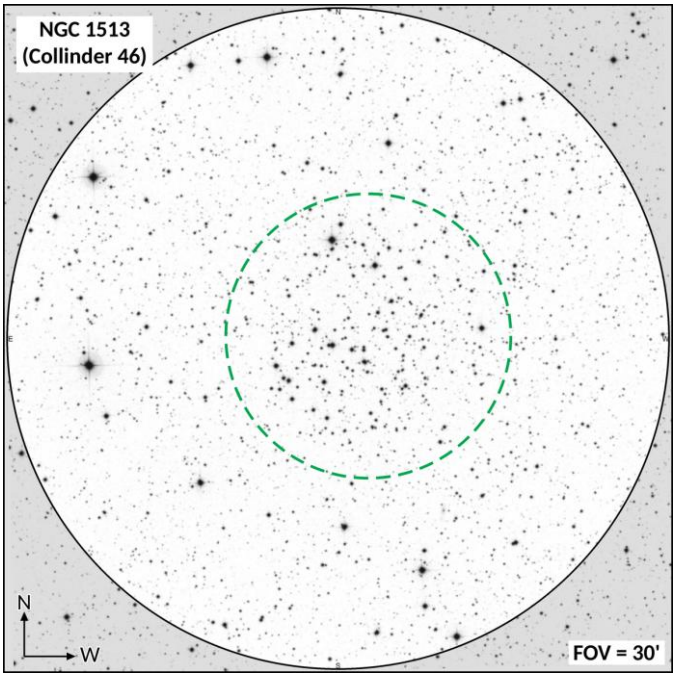
HD 25907 (DS || **AB** | Mag=7.2 / 6.6 | Sep=130.1" | PA=70° | mBortle=9 | mApt=50mm | RecMag=10x | Spec=K0 | Color=orange |) Located 440 light years away, this double is physical. The primary is an orange star with 23 times the Sun's luminosity.



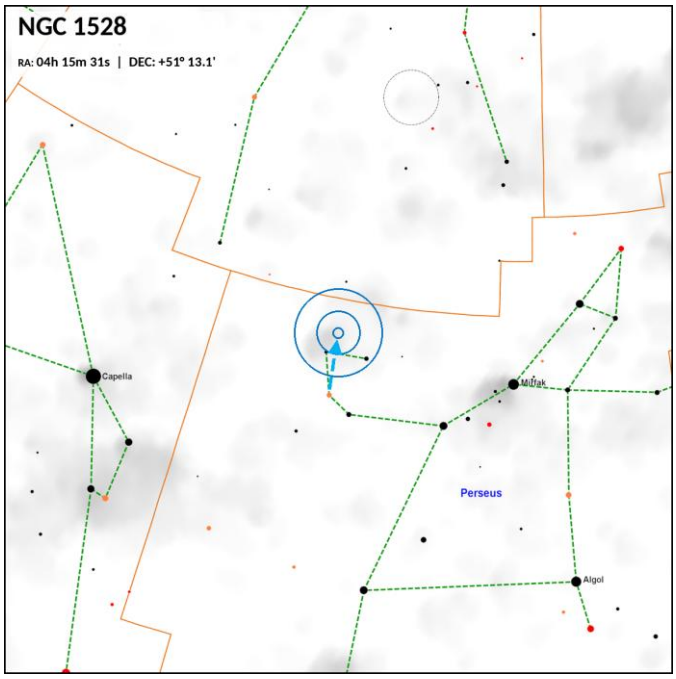


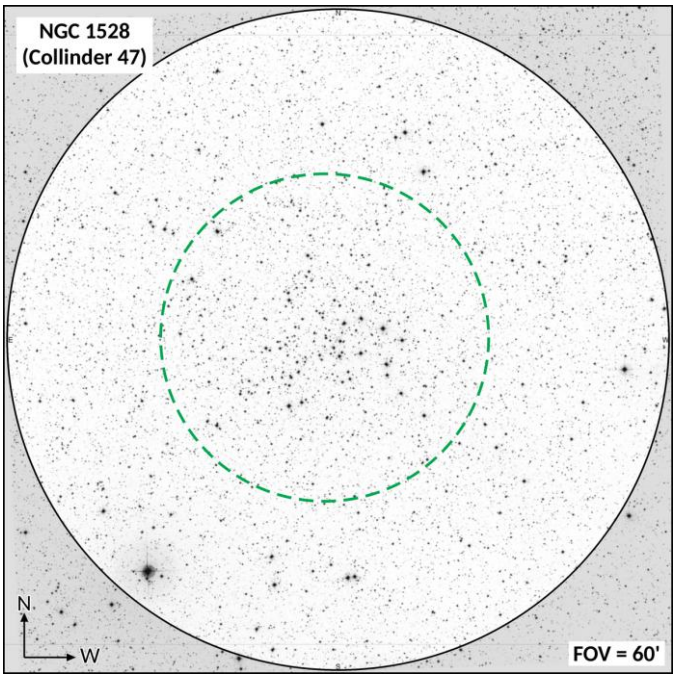
NGC 1513 (OC || Mag=8.4 | Size=10' | SB=22.0 | mBortle=5 | mApt=130mm | MC=II1m |) Located 4,824 light years away with an estimated age of 363 million years. A medium-size telescope is required to view this dim cluster. Trumpler Class II-Detached with little central concentration, 1-Small range of brightness between stars, m-Moderately rich cluster with 50 to 100 stars.



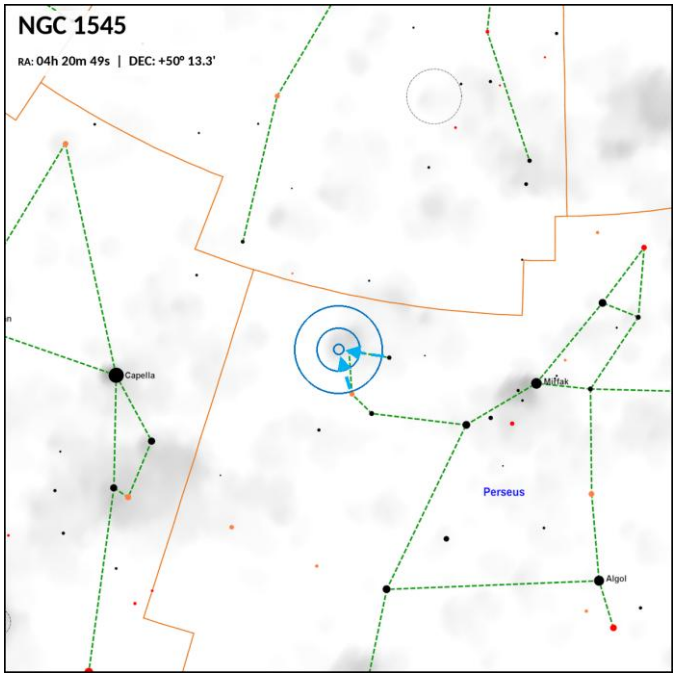


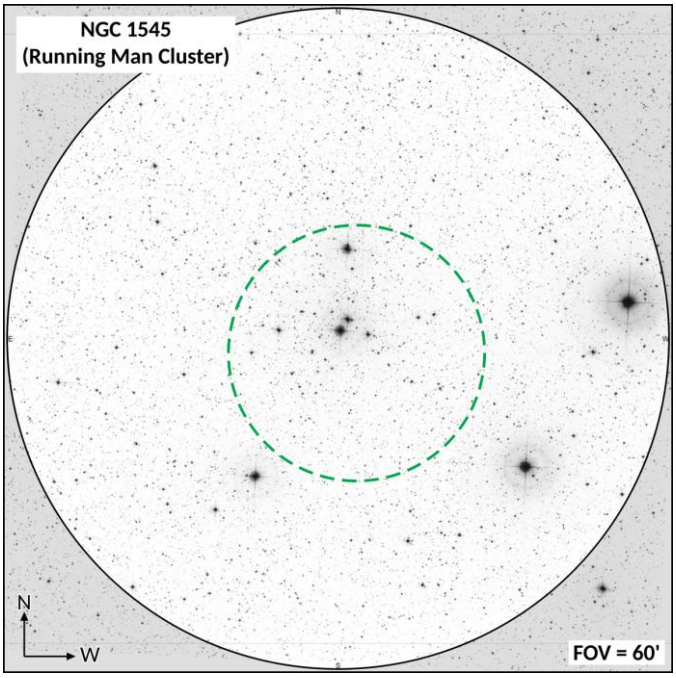
NGC 1528 (OC || Mag=6.4 | Size=23' | SB=21.8 | mBortle=9 | mApt=60mm | MC=II2m |) This cluster is clearly visible with 8x50 binoculars and small telescopes. Trumpler Class II-Detached with little central concentration, 2-Medium range of brightness between stars, m-Moderately rich cluster with 50 to 100 stars.



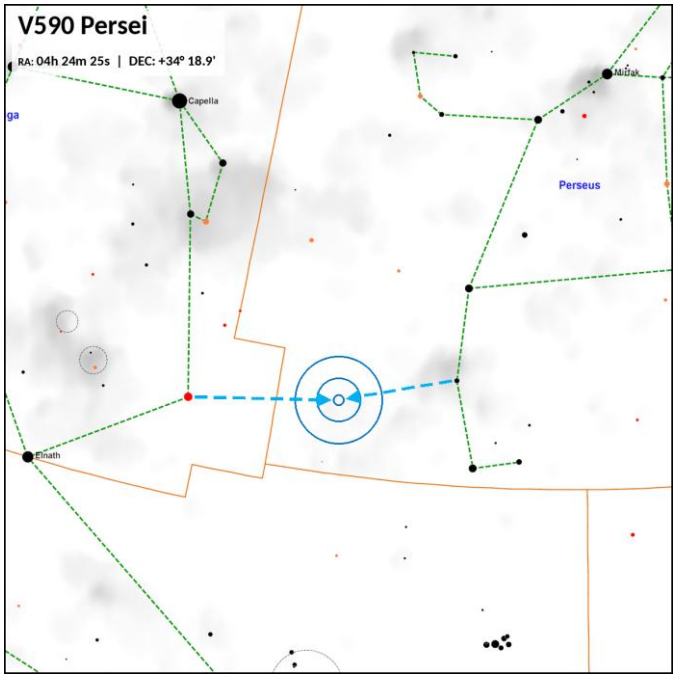


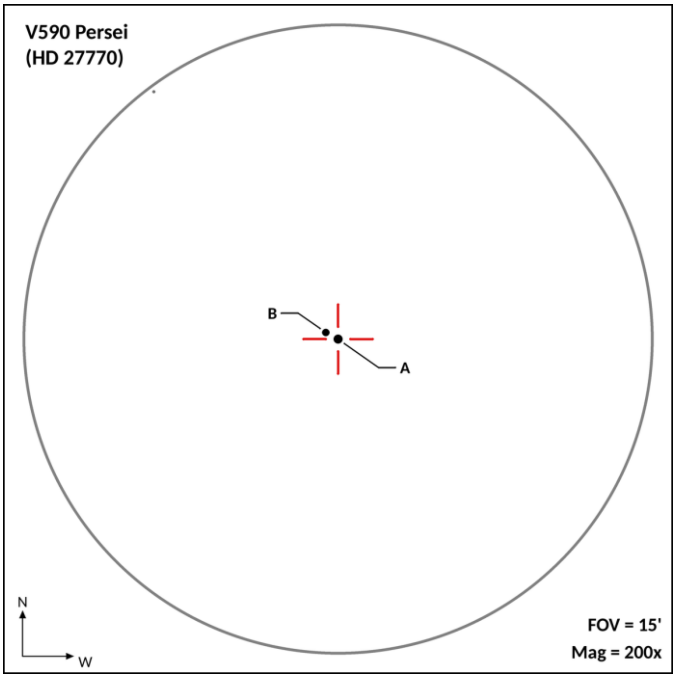
NGC 1545 (OC || Mag=6.2 | Size=18' | SB=21.1 | mBortle=9 | mApt=50mm | MC=IV2p |) The Running Man Cluster along with NGC 1528 form the "M&M Double Cluster". Trumpler Class IV-Not well detached from the surrounding star field, 2-Medium range of brightness between stars, p-Poor cluster with less than 50 stars.



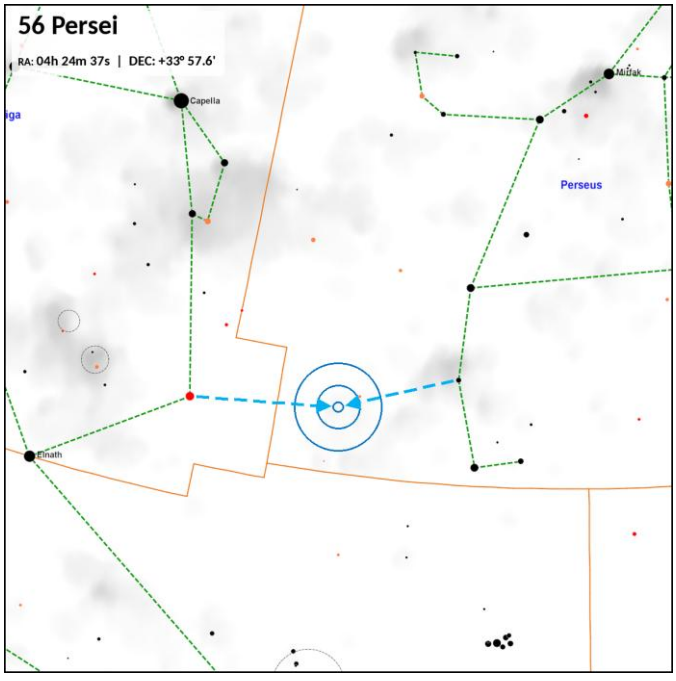


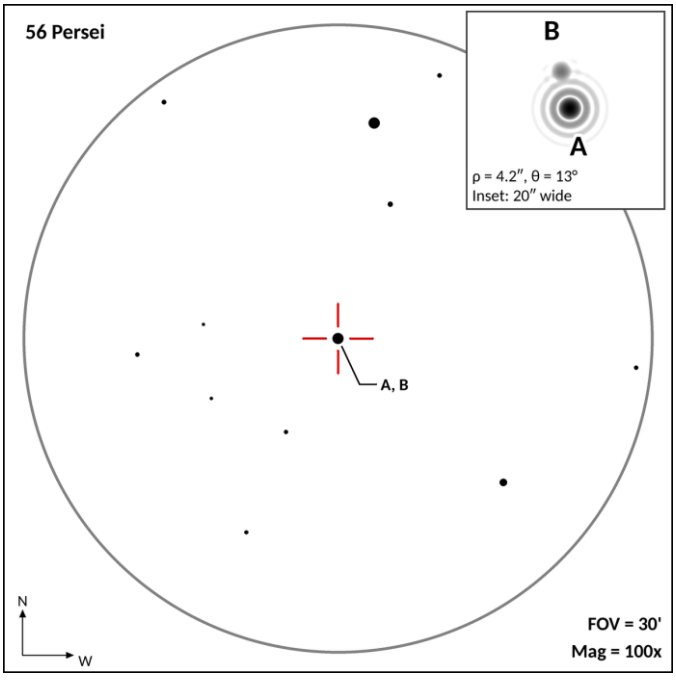
V590 Persei (DS || **AB** | Mag=7.3 / 8.5 | Sep=19.7" | PA=62° | mBortle=9 | mApt=50mm | RecMag=10x | Magnitude Range= 7.2 to 7.4 | Period=5.7d | Spec=B8V | Color=blue-white |) Located 680 light years away, this is a physical double. The primary is a blue-white main-sequence star with a diameter of 3.6 times that of our Sun's and a mass of 3.8 Solar masses.



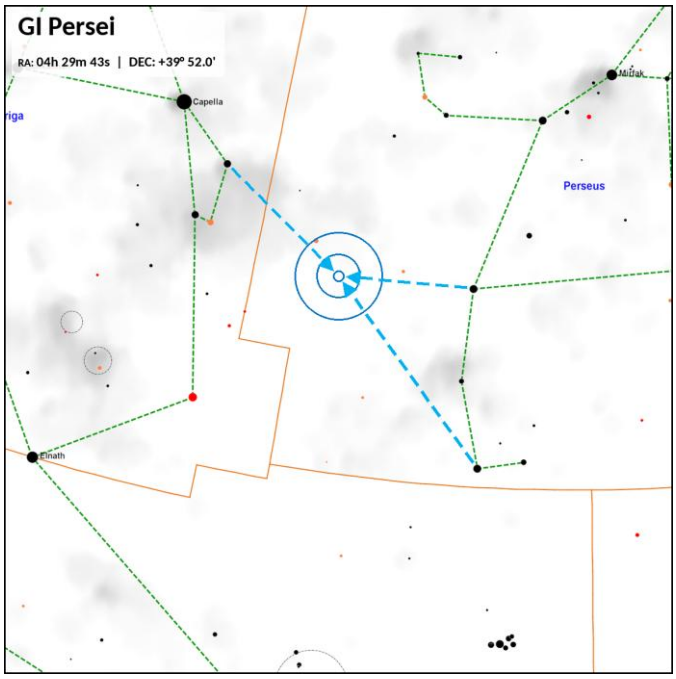


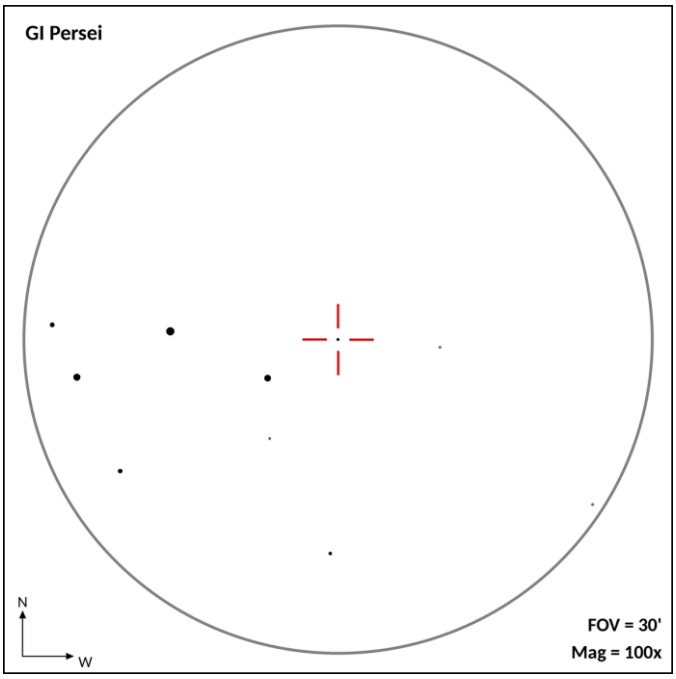
56 Persei (DS || **AB** | Mag=5.8 / 9.3 | Sep=4.2" | PA=13° | mBortle=9 | mApt=102mm | RecMag=60x | Spec=F4IV-V | Color=yellow-white |) Located 132 light years away this system is physical with an orbital period of 1,886 years. The primary in this system is a yellow-white main-sequence star with a luminosity 7.2 times that of our Sun's and a mass of 1.4 Solar masses.



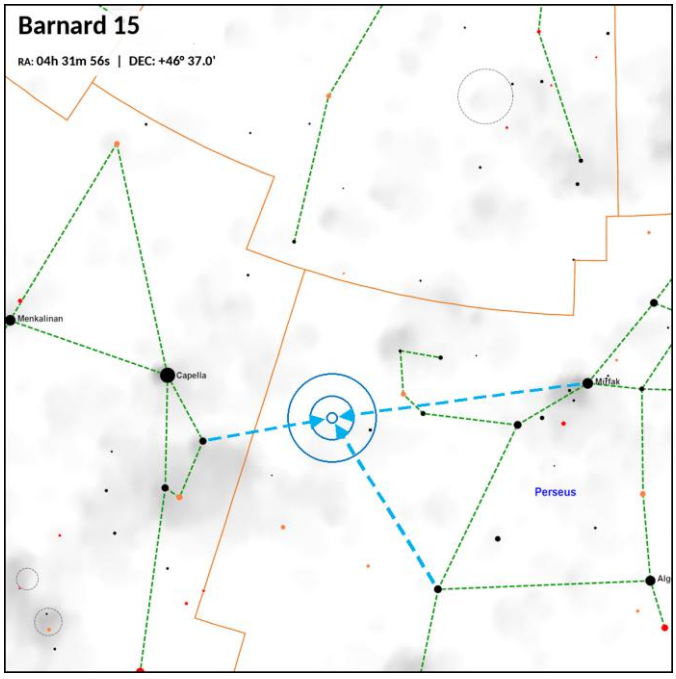


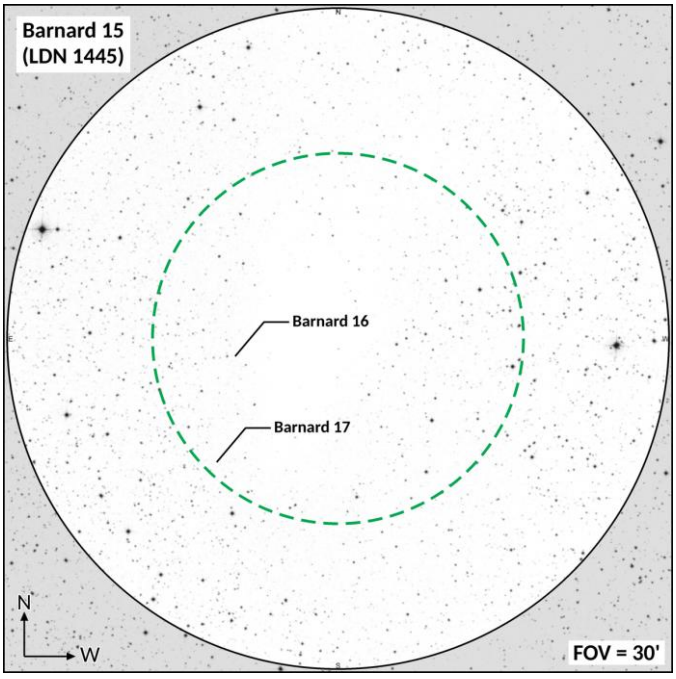
GI Persei (CS, VS || Magnitude Range= 13.8 to 15.8 (photographic) | Period=400d | Spec=C7,4(N) | BV=+4.50 | Color=deep red |) Located 3,200 light years away, this is a pulsating semi-regular variable star with a period of 400 days. BV=+4.50 indicating a color of Deep Red.



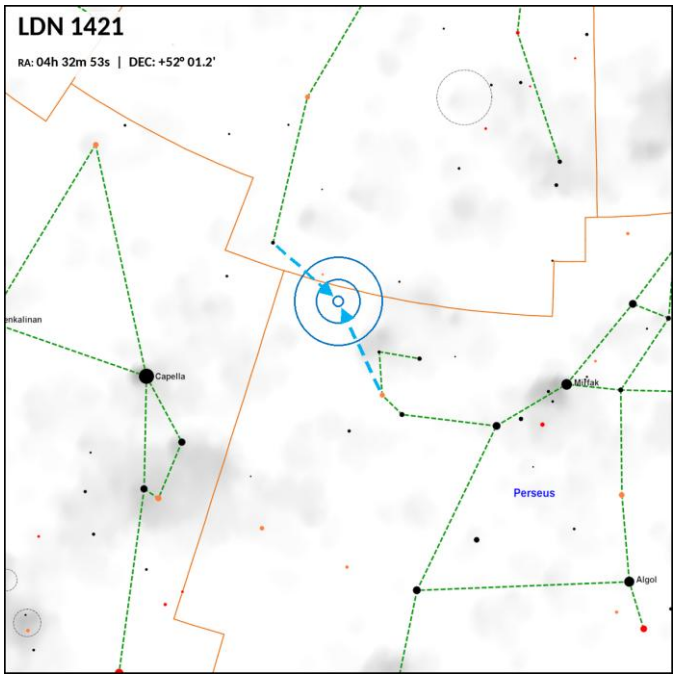


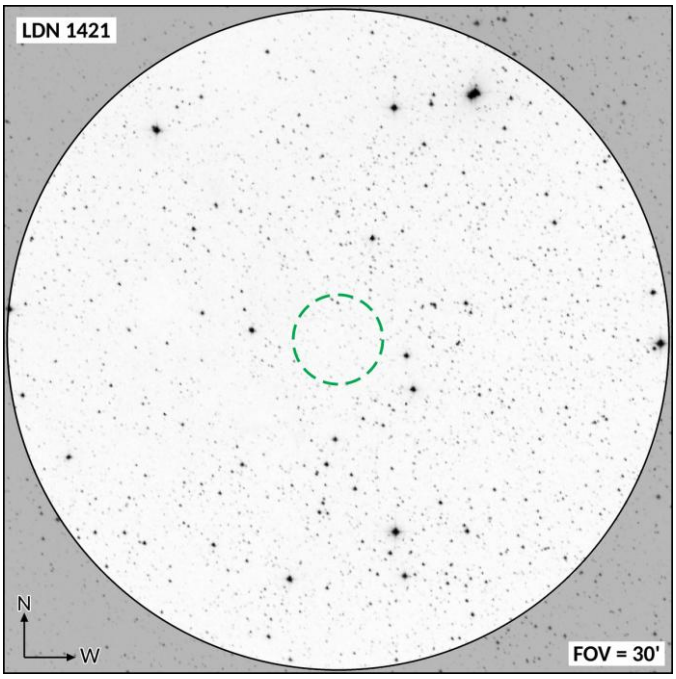
Barnard 15 (DN || Size=13' | mBortle=4 | mApt=50mm | Opacity=5 |) A dark nebula located in Perseus. Limited information on this dark nebula.



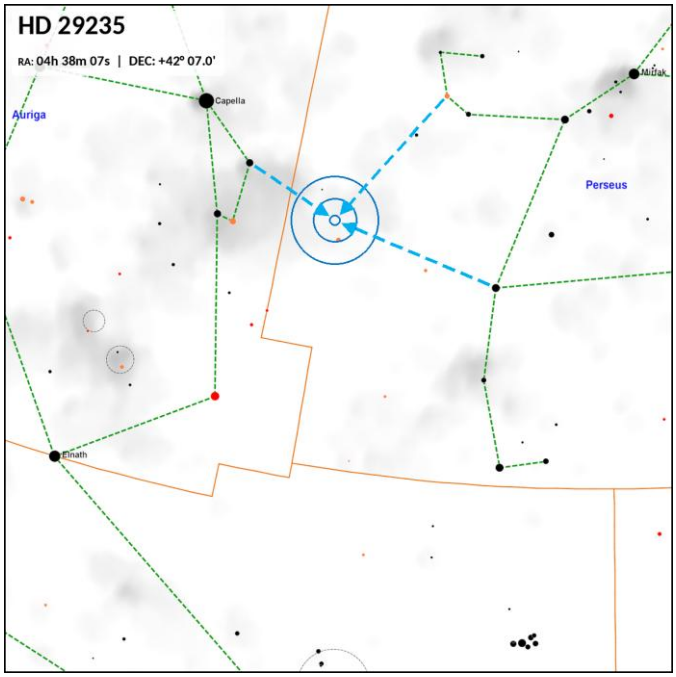


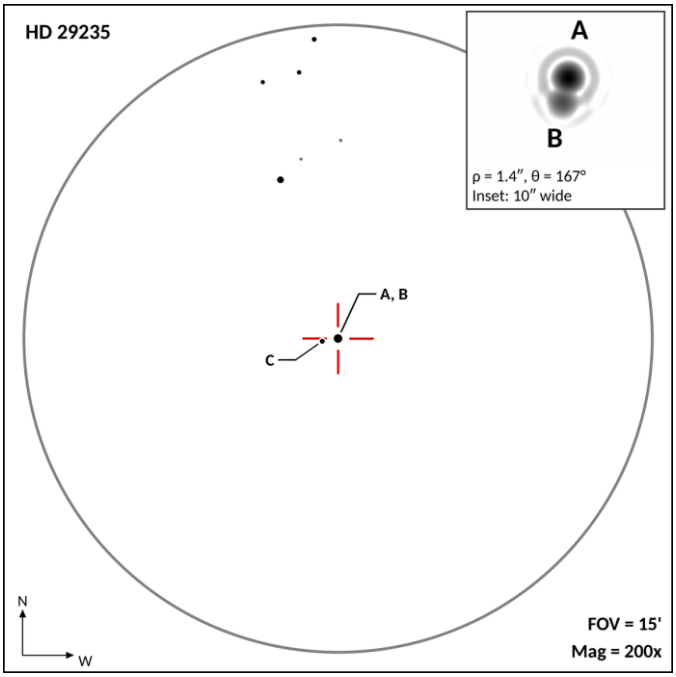
LDN 1421 (DN || Size=3.2' | mBortle=4 | mApt=70mm | Opacity=5 |) This dark nebula is associated with the Camelopardalis clouds, a complex of dark nebulae along the borders of Camelopardalis, Perseus and Auriga.



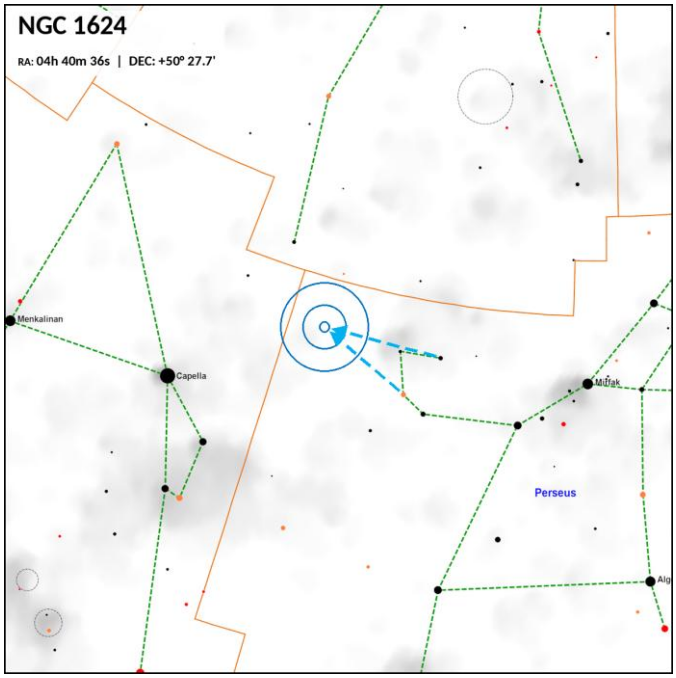


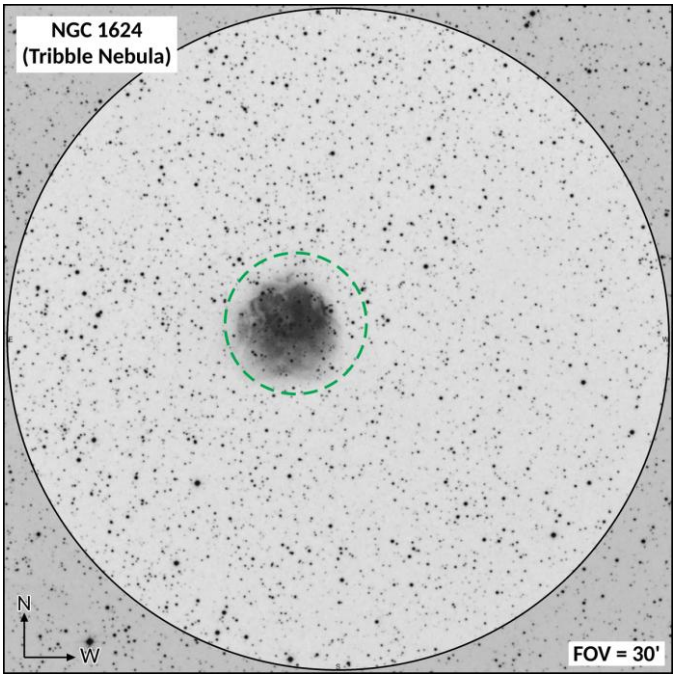
HD 29235 (MS-3 || **AB** | Mag=7.7 / 9.1 | Sep=1.4" | PA=167° | mBortle=9 | mApt=130mm | RecMag=170x | Spec=K0 | Color=orange || **AC** | Mag=7.7 / 10.3 | Sep=22.8" | PA=100° | mBortle=9 | mApt=50mm | RecMag=10x | Spec=K0 | Color=orange |) The AB pair is physical and the AC pair is not physical. The primary is an orange star.



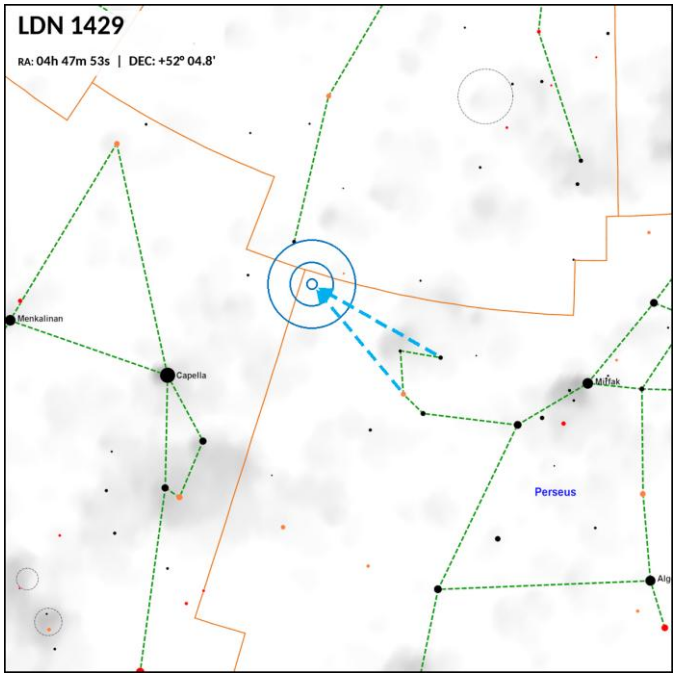


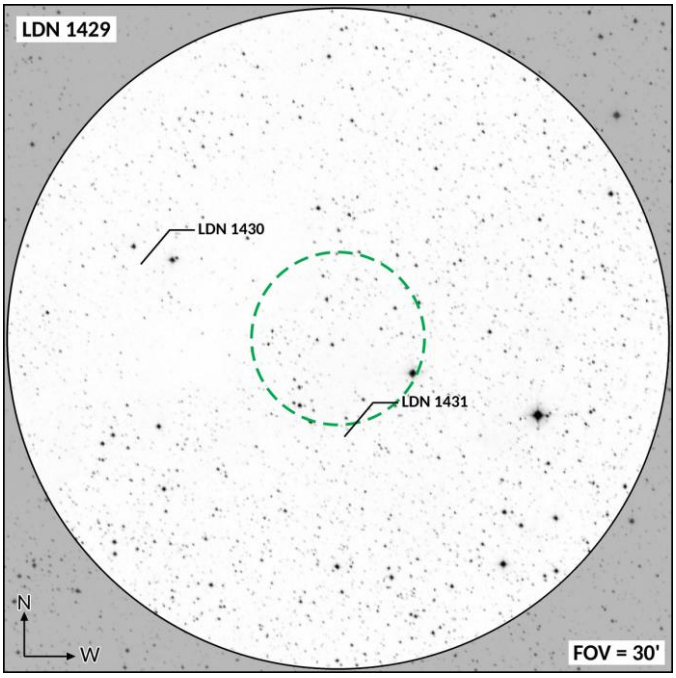
NGC 1624 (OC || Mag=11.8 | Size=5'x5' | SB=23.9 | MC=II1pn |) Located 20,000 light years away with a physical diameter of 17 light years, this cluster is embedded inside a faint emission nebula. Trumpler Class II-Detached with little central concentration, 1-Small range of brightness between stars, p-Poor cluster with less than 50 stars, n-Nebulosity associated with cluster.



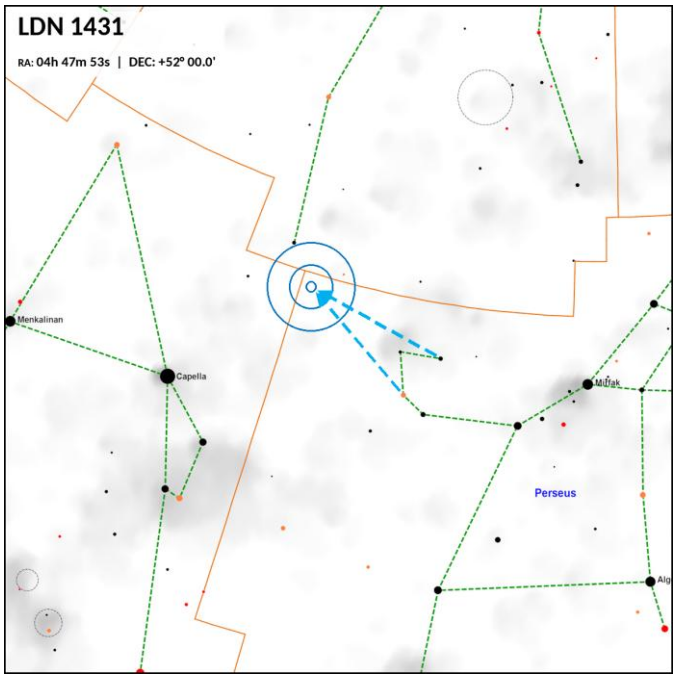


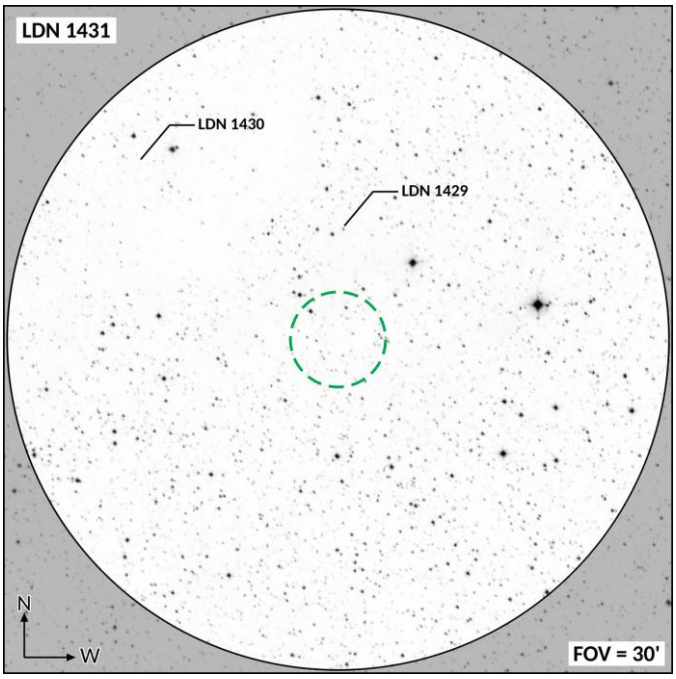
LDN 1429 (DN || Size=6.1' | mBortle=4 | mApt=50mm | Opacity=5 |) This dark nebula is associated with the Camelopardalis clouds, a complex of dark nebulae along the borders of Camelopardalis, Perseus and Auriga.



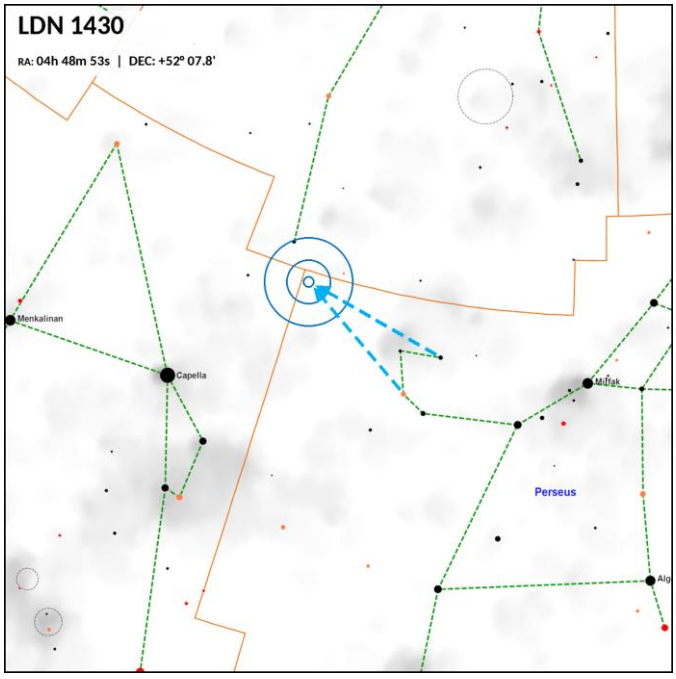


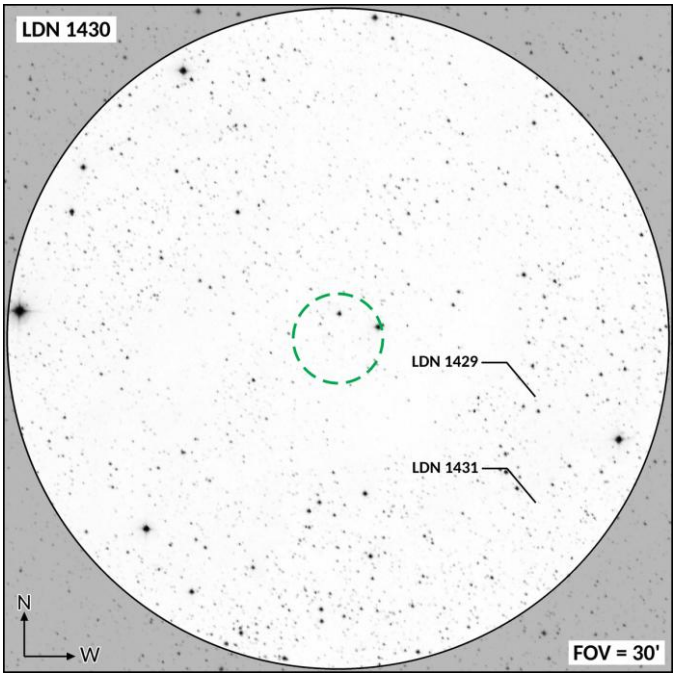
LDN 1431 (DN || Size=3.4' | mBortle=4 | mApt=70mm | Opacity=5 |) This dark nebula is associated with the Camelopardalis clouds, a complex of dark nebulae along the borders of Camelopardalis, Perseus and Auriga.



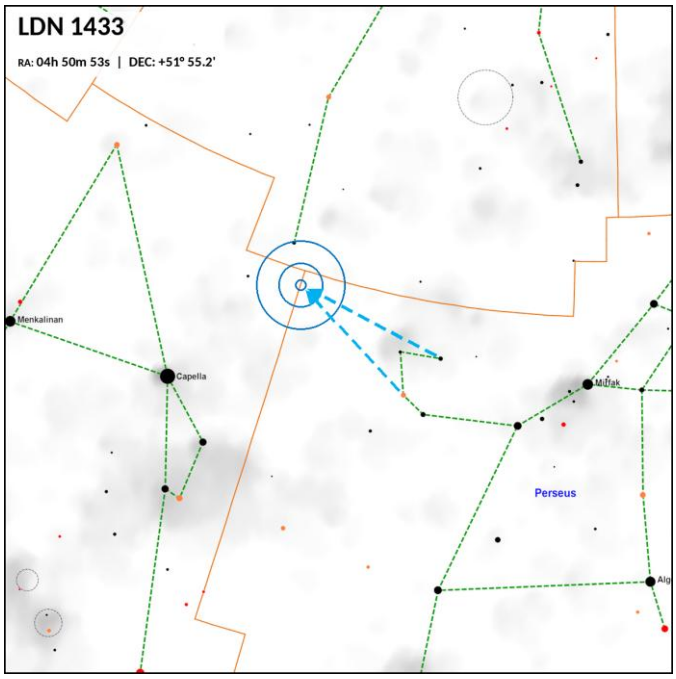


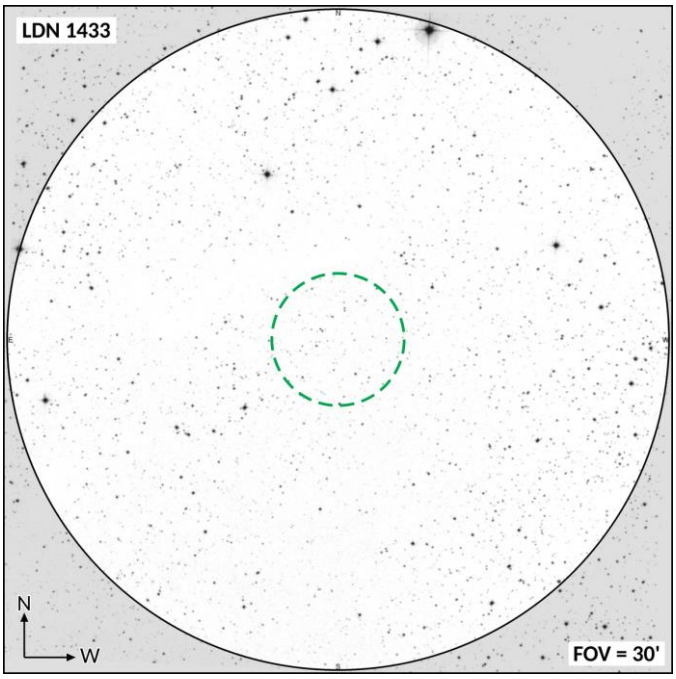
LDN 1430 (DN || Size=3.2' | mBortle=4 | mApt=70mm | Opacity=5 |) This dark nebula is associated with the Camelopardalis clouds, a complex of dark nebulae along the borders of Camelopardalis, Perseus and Auriga.





LDN 1433 (DN || Size=4.7' | mBortle=4 | mApt=50mm | Opacity=5 |) This dark nebula is associated with the Camelopardalis clouds, a complex of dark nebulae along the borders of Camelopardalis, Perseus and Auriga.





Observation Log: Perseus (Per)

Equipment Config A: _____ Config B: _____

Notes: _____

Date	Time	Config	Target	Notes

Date	Time	Config	Target	Notes

Observation Log: Perseus (Per)

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

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
  - Aladin Lite – Source for a number of deep-sky images

Applications

- SkyTools 4.1 Visual Professional
- AstroPlanner Version 2.4
- Cartes du Ciel Version 4.3
- SkySafari Pro 7
- Microsoft Office Home and Business 2021 - Word
- Microsoft Visio Professional 2021
- IrfanView Version 4.72