

Constellation Guide

Constellation: Lyra (Lyr)

Evening Visibility: **June – August**

Opposition: July

Latitude Visibility: **+90° to -40°**

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

Constellation Targets

T Lyr, [Vega](#), HK Lyr, [Double Double](#), [Zeta Lyr](#), [Sheliak](#), [M-57](#), [IC-1296](#), [Steph-1](#), [Delta Lyr](#), [Delta1 Lyr](#), HR-7140, NGC-6743, [NGC-6745](#), HD-178849, [Eta Lyr](#), [M-56](#), U Lyr, [NGC-6791](#)

Mythology/Back Story

The constellation Lyra dates back to ancient times and was first catalogued by Ptolemy in the 2nd century. Lyra represents the musical instrument the lyre, invented by Hermes, passed to his half-brother Apollo, and later given to Orpheus, supposedly the greatest musician of his age. Lyra is a fairly small constellation, is quite prominent in the northern sky and is the source of two meteor showers, one in April and one in June.

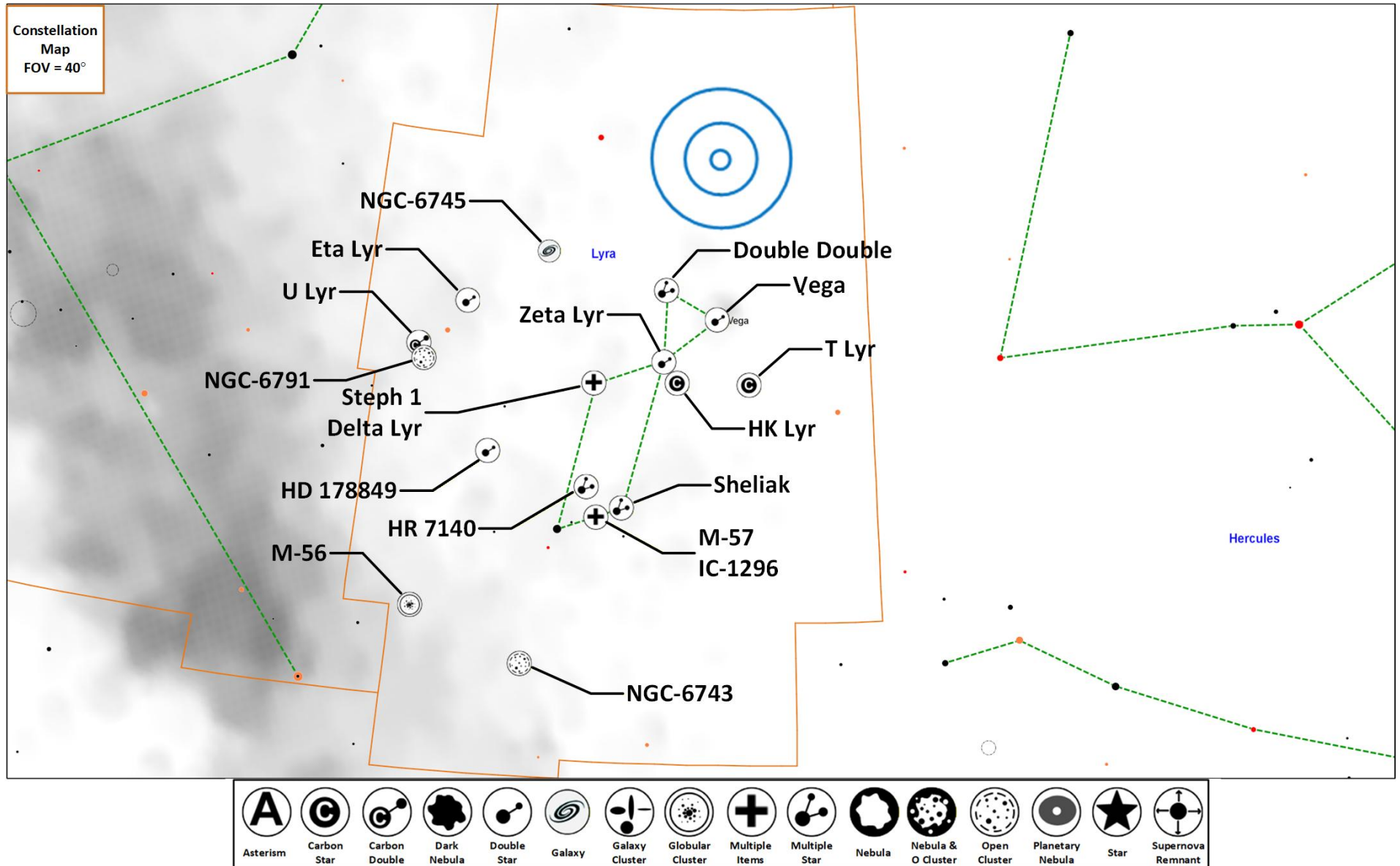
Constellation Highlights

Lyra is known mostly for its bright star Vega, the Ring Nebula, and the Double Double quadruple star system, but has a few other treasures also.

- **T Lyrae** (CS) – With BV=+5.46 this should be a very red star
- **Sheliak** (MS-3) – Colorful multiple star system
- **Delta Lyrae** (DS) – Colorful optical double in loose OC Steph-1
- **Double Double** (MS-4) – Famous quadruple star system
- **M-57** (PN) – The Ring Nebula
- **M-56** (GC) – Interesting globular cluster

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Constellation Map



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Object (Type)	Links	Gear	Aliases	Stats
T Lyrae (CS)		T	SAO-67087; HIP 90883; DO 16869; GCRV 11009; GSC 02636-01142; HIC 90883; IRAS 18306+3657; V* T Lyr	Magnitude Range= 7.5 to 9.3 Spec=C8 (C-N) BV=+5.46 Color=deep red
Vega (DS)	1 , 2	B, T	SAO-67174; HIP 91262; α Lyr; 3 Lyr; HD 172167; HR 7001; ADS 11510 A; ASCC 507896; BD +38°3238; CEL 4636; FK5 699; GC 25466; GCRV 11085; GCTP 4293.00; GJ 721; HGAM 706; HIC 91262; IRAS 18352+3844; LTT 15486; NLTT 46746; NSV 11128; PLX 4293; PPM 81558; TIC 157587146; TYC 3105-2070-1; USNO 882; Alpha Lyrae; Lucida Lyrae; Wega	AB Mag=0,9.5 Sep=80.2" PA=185° mBortle=9 mApt=50mm Spec=A0V, ? Color=white, ?
HK Lyrae (CS)		T	HIP 91774; HD 173291; BD +36°3243; GSC 02649-00507; TYC 2649-507-1; V* HK Lyr	Magnitude Range= 7.8 to 9.6 Period=0.51y Spec=C6,4 (C-N4) BV=+3.08 Color=deep red
Double Double (MS-4)	1 , 2	B, T	ϵ Lyr; ADS 11635; STF 2382; STF 2383; STFA37; WDS18443+3940; Σ I37; Double Double; Epsilon Lyr; Epsilon Lyrae; Pongaponga	AB, CD Mag=4.7,4.6 Sep=207.9" PA=171° mBortle=9 mApt=50mm Period=>400,000y Spec=A3V, A6Vn Color=white, white AB Mag=5.15,6.1 Sep=2.2" PA=343.5° mBortle=9 mApt=70mm Period=1725y Spec=A4V, F1V Color=white, yellow-white CD Mag=5.2,5.4 Sep=2.4" PA=72.9° mBortle=9 mApt=70mm Period=724y Spec=A8Vn, F0Vn Color=white, yellow-white
Zeta Lyrae (DS)	1 , 2	B, T	SAO-67321; HIP 91971; 6 Lyr; HD 173648; HR 7056; ADS 11639; BD+37 3222; CCDM J18448+3736A; CEL 4648; CSV 101763; GC 25676; NSV 11308; PLX 4327; STFA38; TYC 3118-2080-1; WDS18448+3736; Σ I38; ζ Lyr; Kautoki	AD Mag=4.3,5.6 Sep=41.1" PA=149° Period=>47000y mBortle=9 mApt=50mm Spec=Am, F0IVn Color=white, yellow-white
Sheliak (MS-3)	1 , 2	B, T	SAO-67451; HIP 92420; β Lyr; 10 Lyr; HD174638; HR 7106; ADS 11745 A; 1RXS J185006.6+332123; AAVSO 1846+33; BD +33°3223; CCDM J18501+3322A; CEL 4657; FK5 705; GC 25847; SHJ 281; STFA39; TYC 2642-2929-1; WDS18501+3322; Beta Lyra; Beta Lyrae	AB Mag=3.5,6.7 Sep=47.4" PA=148° mBortle=9 mApt=50mm Spec=B7Ve, B7V Color=blue-white, blue-white AF Mag=3.5,10.6 Sep=85.7" PA=17° mBortle=9 mApt=60mm Spec=B7Ve, G5 Color=blue-white, yellow

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Object (Type)	Links	Gear	Aliases	Stats
Messier 57 (PN)	1	T	NGC-6720; GC 4447; PK 63+13.1; PN G063.1+13.9; Messier 57; Ring Nebula; h 2023	Mag=8.8 Size=1.4'x1.0' SB=17.8 mBortle=9 mApt=50mm MC=Elliptical (ring)
IC-1296 (G)	1	T	2MASX J18531881+3303599; CGCG 201-40; MCG +06-41-22; PGC 62532; UGC 11374	Mag=14.8 Size=1.1'x0.9' SB=23.4 MC=SB(rs)bc
Steph 1 (OC)	1	B, T	C 1851+368; [KPS2012] MWSC 3018; Delta Lyrae Cluster; Lund 370; OCl 137; Stephenson 1	Mag=3.8 Size=20' mBortle=9 mApt=50mm MC=IV3p
Delta Lyrae (DS)	2		Delta1, Delta2 Lyrae	Mag=5.6, 4.28 Sep=630" Spec=M4II, B2V Color=red-orange, blue
Delta1 Lyrae (DS)	1 , 2	B, T	SAO-67537; HIP 92728; 11 Lyr; HD 175426; HR 7131; 2MASS J18534355+3658182; BD+36 3307; CCDM J18538+3659A; FK5 3506; GC 25934; GSC 02650-02146; TYC 2650-2146-1; δ^1 Lyr; NSV11504 Lyr	AB Mag=5.5,9.9 Sep=175" PA=20° mBortle=9 mApt=50mm Spec=B2.5V, A Color=blue-white, white
HR 7140 (MS-3)	1	B, T	SAO-67566; HIP 92833; HR 7140; ADS 11834; BD+33 3257; SHJ282; TYC 2647-02660-1; WDS18549+3358	AB Mag=6.1,9.1 Sep=1.80" PA=130.1° mBortle=9 mApt=50mm Spec=A8, G5III Color=white, yellow AC Mag=6.1,7.6 Sep=45.2" PA=349° mBortle=9 mApt=50mm Spec=A8, ? Color=white, ?
NGC-6743 (OC)		T	GC 4463; [KPS2012] MWSC 3036; h 2028	Mag=8.2 Size=8' mBortle=6 mApt=130mm
NGC-6745 (G)	1	T	2MASX J19014170+4045361; PGC 62691; UGC 11391; Bird's Head Galaxy	Mag=13.3 Size=1.5'x0.7' SB=22.0 MC=Pec
HD 178849 (DS)	1	T	SAO-67870; HIP 94043; STF2470; TYC 2648-02147-1; WDS19088+3446; Σ 2470	Mag=7.0,8.4 Sep=13.6" PA=269° mBortle=9 mApt=50mm Spec=B3V, ? Color=blue-white, blue-white
Eta Lyrae (DS)	1 , 2	B, T	SAO-68010; HIP 94481; η Lyr; 20 Lyr; HD 180163; HR 7298; ADS 12197; BD+38 3490; BD+38 3491; GC 26507; H IV 2; HIC 94481; IDS 19104+3858 A; IRAS 19120+3903; JP11 3082; N30 4257; NSV 11839; PLX 4486; SHJ 291; STF2487; WDS19138+3909; Σ 2487; Aladfar; Mayer 61	AB Mag=4.4,8 Sep=28" PA=79° mBortle=9 mApt=50mm Spec=B2.5IV, A0 Color=blue-white, white
Messier 56 (GC)	1	T	NGC-6779; C 1914+300; Mel 220; GCl 110; CSI+30-19146 3; GC 4485; GCRV 11736; Messier 56; h 2036	Mag=8.27 Size=8.8' SB=21.6 mBortle=7 mApt=50mm MC=X

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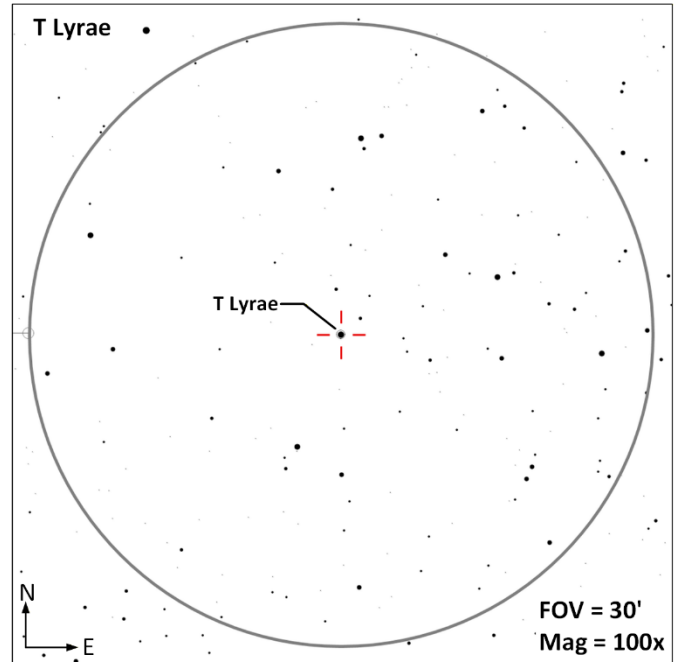
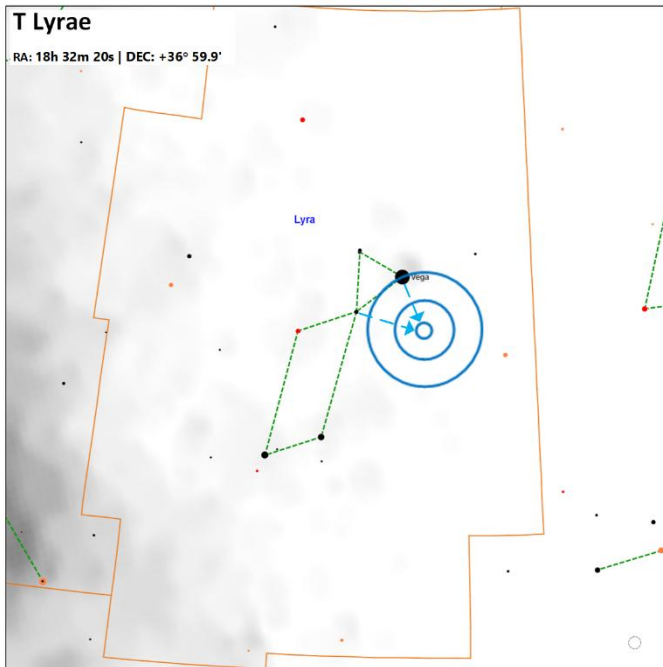
Object (Type)	Links	Gear	Aliases	Stats
U Lyrae (CS, DS)	<u>1</u>	T	SAO-68156; ES 2489; GSC 03134-01708; WDS 19201+3752	Magnitude Range= 8.3 to 13.5 Period=1.23y BV=+3.4 Spec=C4,5e (C-N0e) Color=red AB Mag=10.2,13 Sep=10.4" PA=189° mBortle=? mApt=180mm Spec=C4,5e (C-N0e), ? Color=red, ?
NGC-6791 (OC)	<u>1</u>	B, T	C 1919+377; [KPS2012] MWSC 3088; OCl 142	Mag=9.5 Size=16' mBortle=? mApt=250mm MC=II2r

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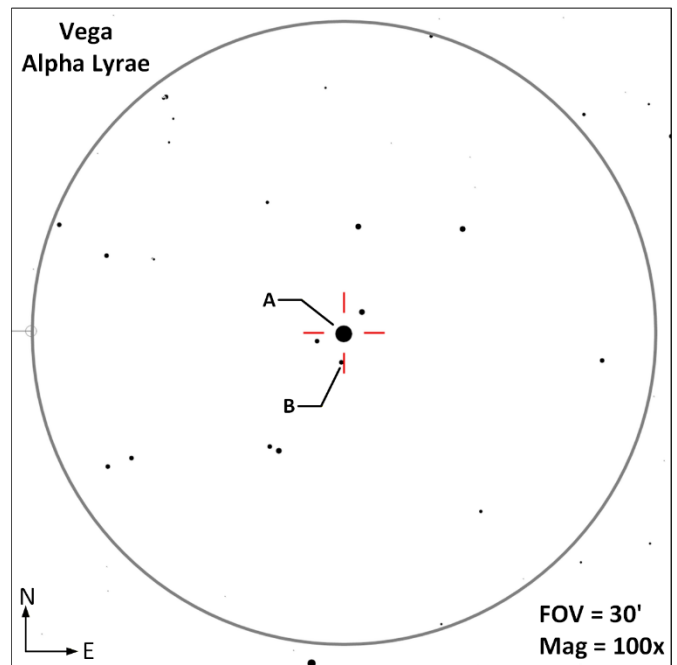
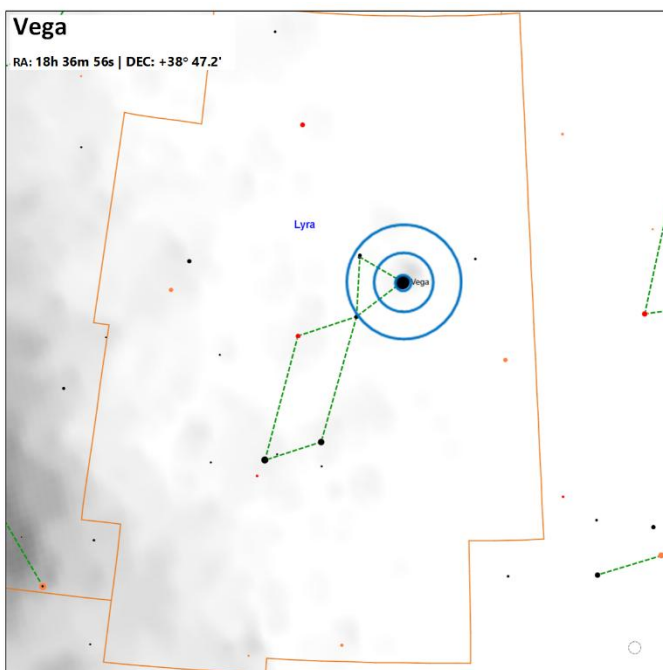
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T Lyrae (CS || Magnitude Range= 7.5 to 9.3 | Spec=C8 (C-N) | BV=+5.46 | Color=deep red |) Located 2,346 light years away, BV color index indicates this should be an intensely red star. This is a slow irregular variable with no well-defined period.

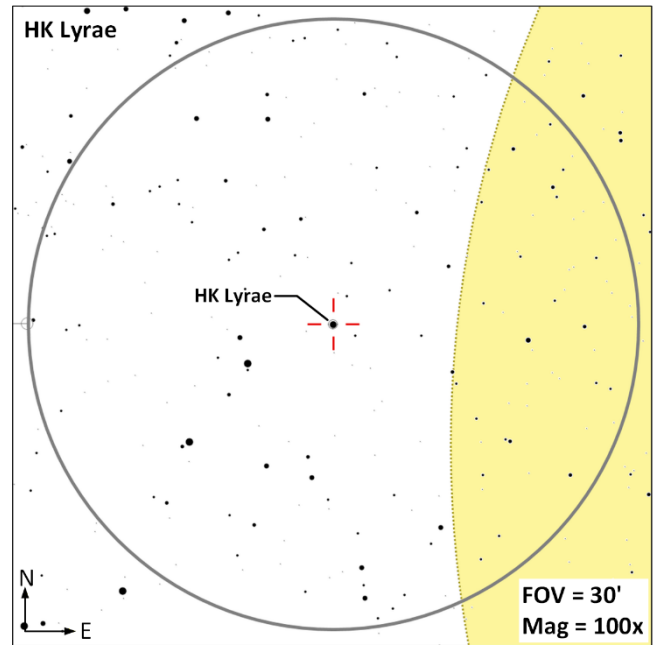
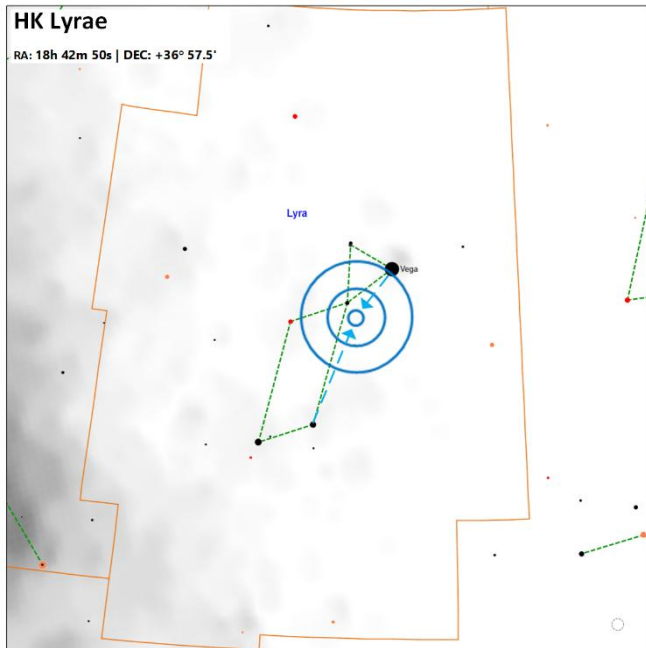


Vega (DS || **AB** | Mag=0,9.5 | Sep=80.2" | PA=185° | mBortle=9 | mApt=50mm | Spec=A0V, ? | Color=white, ? |) The brightest star in the constellation and also one of the three stars making the “Summer Triangle”. This is an optical double. Vega was the northern pole star around 12000 BCE and will be so again around the year 13700.

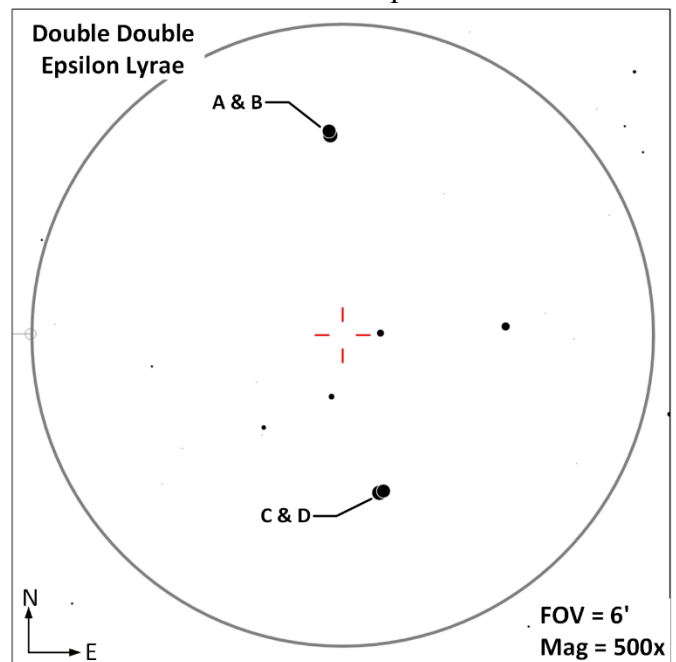
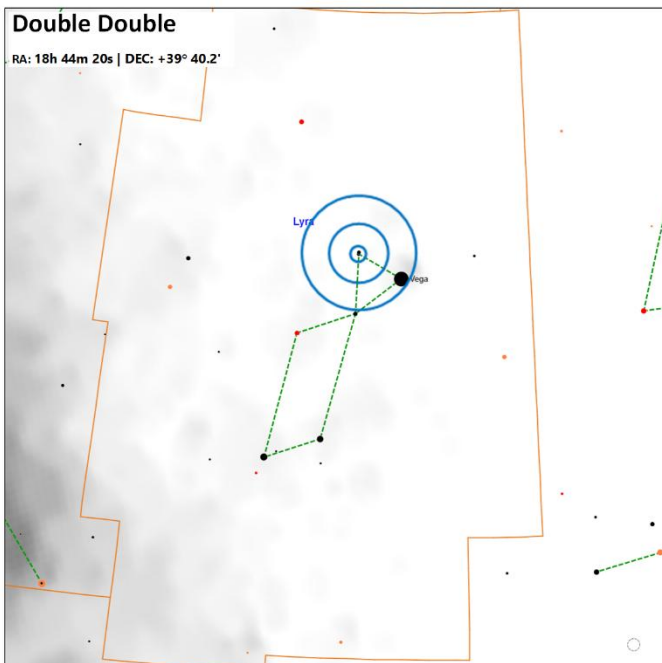


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HK Lyrae (CS || Magnitude Range= 7.8 to 9.6 | Period=0.51y | Spec=C6,4 (C-N4) | BV=+3.08 | Color=deep red) A semi-regular variable star with a period of about 186 days.

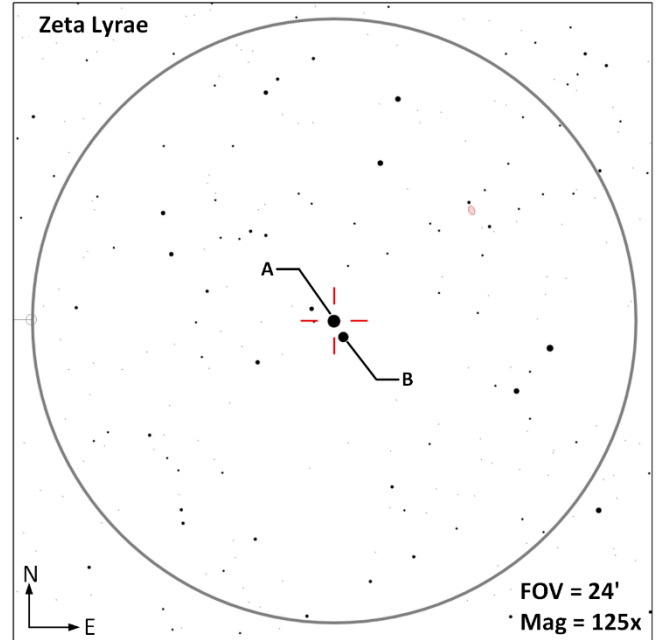
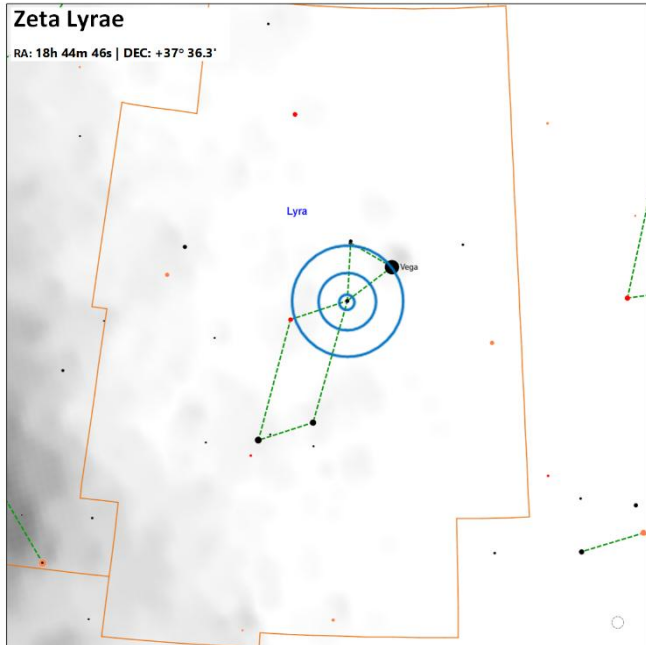


Double Double (MS-4 || **AB, CD** | Mag=4.7,4.6 | Sep=207.9" | PA=171° | mBortle=9 | mApt=50mm | Period=>400,000y | Spec=A3V, A6Vn | Color=white, white || **AB** | Mag=5.15,6.1 | Sep=2.2" | PA=343.5° | mBortle=9 | mApt=70mm | Period=1725y | Spec=A4V, F1V | Color=white, yellow-white || **CD** | Mag=5.2,5.4 | Sep=2.4" | PA=72.9° | mBortle=9 | mApt=70mm | Period=724y | Spec=A8Vn, F0Vn | Color=white, yellow-white) Epsilon Lyrae is one of the most celebrated quadruple star systems in the northern hemisphere. Located 162 light years away. The AB & CD pairs (ϵ_1 and ϵ_2) can be easily separated with binoculars, while splitting each pair into its individual components requires good conditions and about 70 mm of aperture.

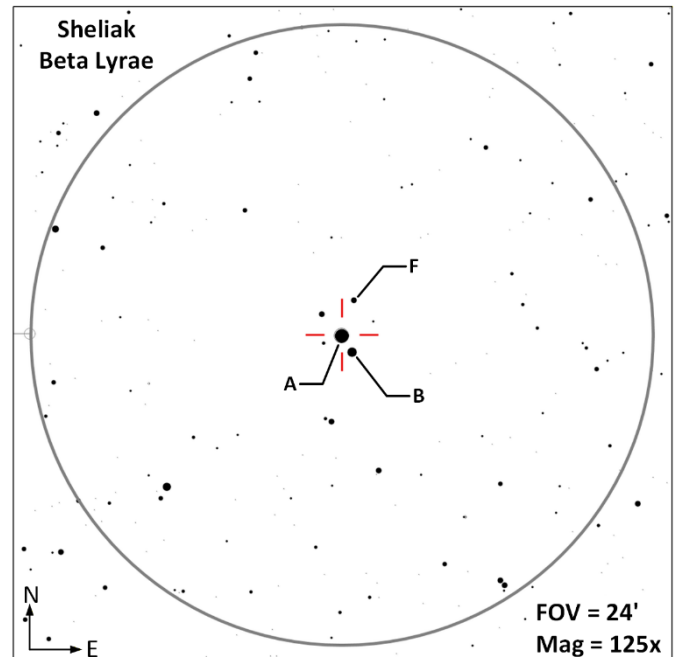
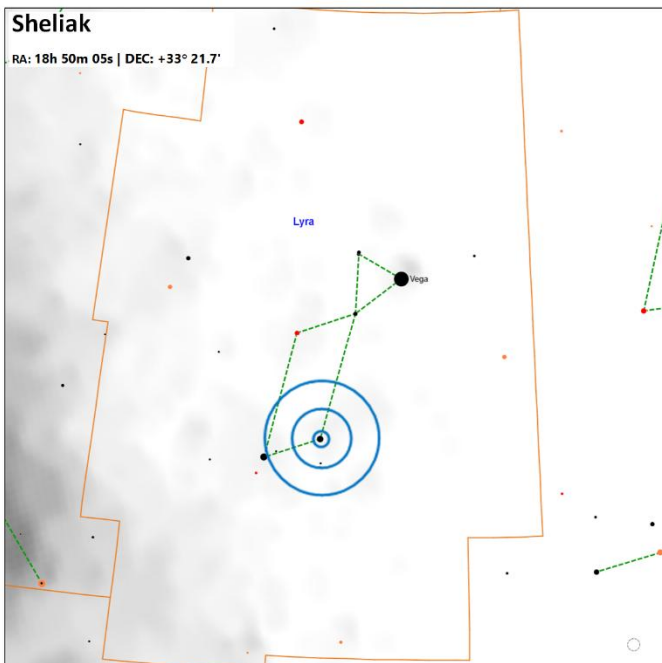


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Zeta Lyrae (DS || **AD** | Mag=4.3,5.6 | Sep=41.1" | PA=149° | Period=>47000y | mBortle=9 | mApt=50mm | Spec=Am, F0IVn | Color=white, yellow-white |) This multiple star system may have up to seven associated stars; however, the A(Zeta1) & D(Zeta2) components are the only ones that have been verified as physically associated with each other; they have an estimated orbital period of greater than 47,000 years.

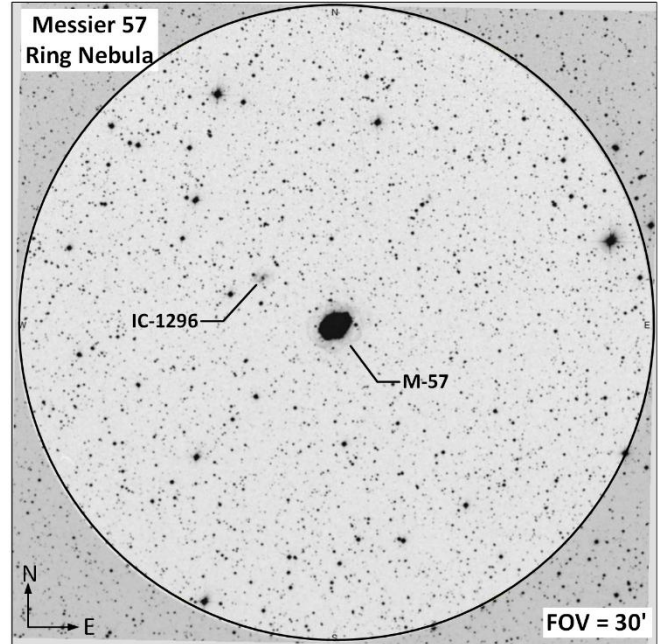
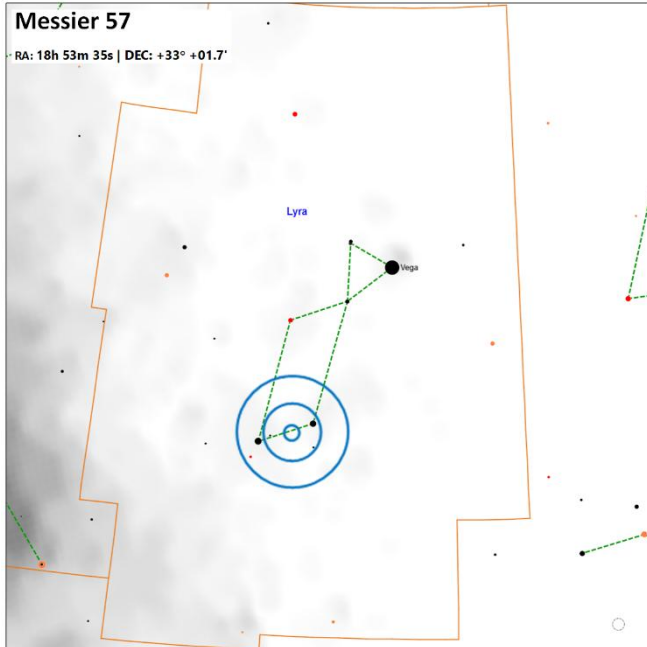


Sheliak (MS-3 || **AB** | Mag=3.5,6.7 | Sep=47.4" | PA=148° | mBortle=9 | mApt=50mm | Spec=B7Ve, B7V | Color=blue-white, blue-white || **AF** | Mag=3.5,10.6 | Sep=85.7" | PA=17° | mBortle=9 | mApt=60mm | Spec=B7Ve, G5 | Color=blue-white, yellow |) This system has a number of stars in the area, but the three identified components are the only ones physically associated with each other.

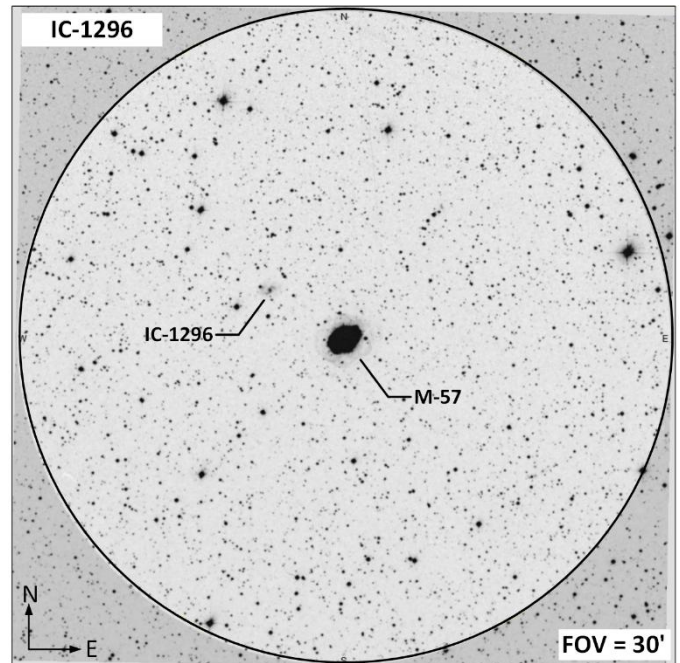
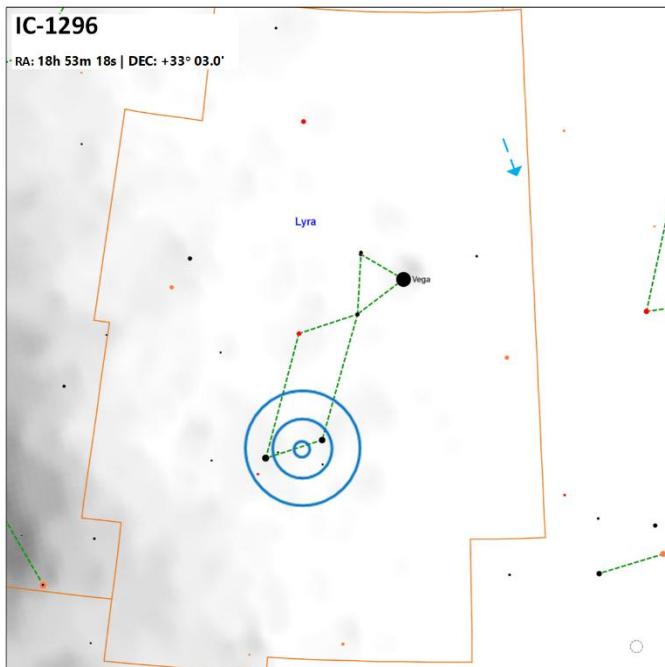


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Messier 57 (PN | Mag=8.8 | Size=1.4'x1.0' | SB=17.8 | mBortle=9 | mApt=50mm | MC=Elliptical (ring) |) The Ring Nebula is one of the finer planetary nebulas in the northern hemisphere and fairly easy to locate and is best viewed with a telescope of 8" aperture to support higher magnifications. It is estimated the central star responsible for the ring structure shed its outer layers about 7,000 years ago. An aperture of at least 12" would be required to see the central star under ideal conditions.

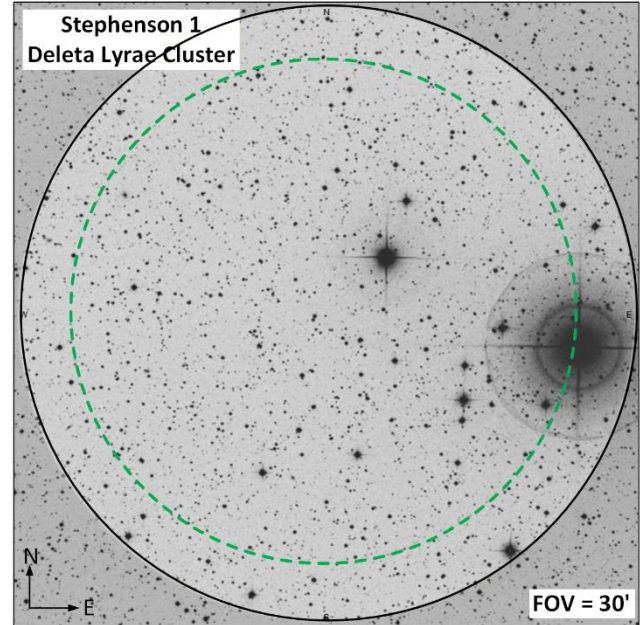
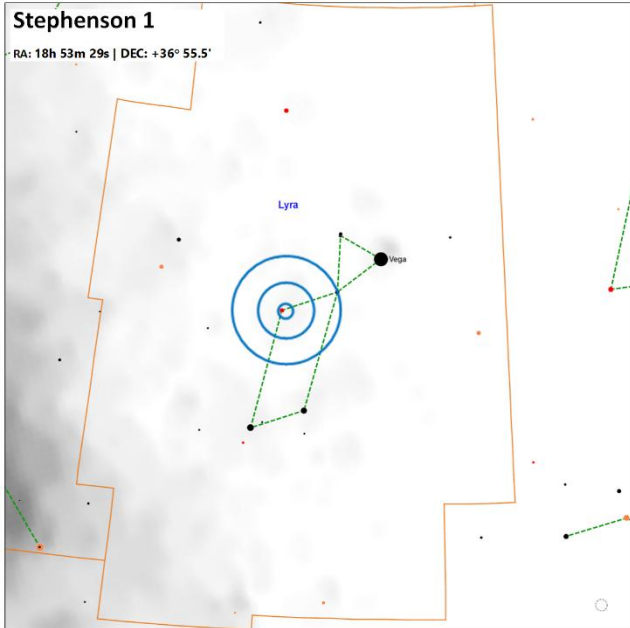


IC-1296 (G || Mag=14.8 | Size=1.1'x0.9' | SB=23.4 | MC=SB(rs)bc |) A very dim galaxy sitting next to M-57 is estimated to be 238 million light years away with a physical diameter of 97,000 light years. Calculations predict that this object will only be visible in very dark skies with a large aperture telescope. There is at least one account of this being identified with an 18" telescope (Polakis).

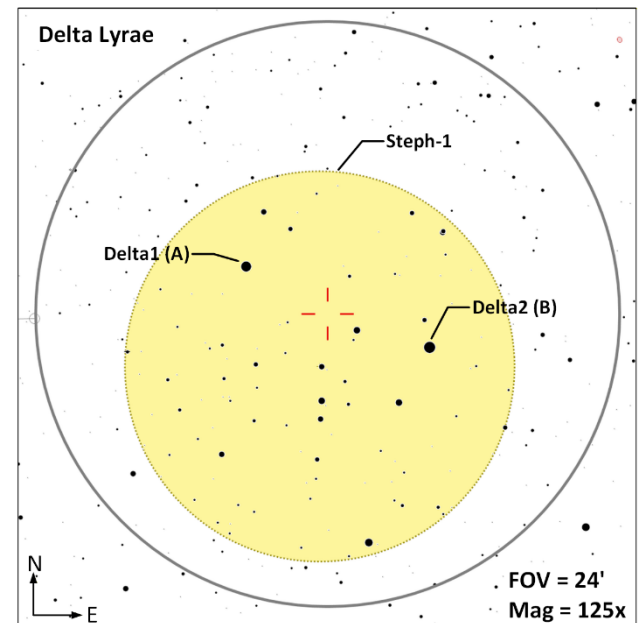
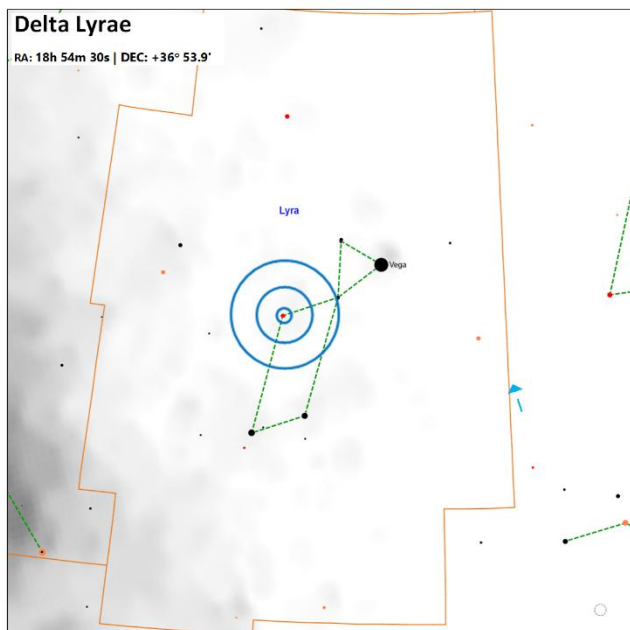


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Steph 1 (OC | Mag=3.8 | Size=20' | mBortle=9 | mApt=50mm | MC=IV3p |) The Delta Lyrae cluster was initially reported in 1959 by Charles Stephenson, then disputed in 1963 by Werner Bronkalla but finally verified by Olin Eggen at the Mount Wilson observatory. Trumpler Classification of IV-Not well detached, but has a strong field concentration, 3-Composed of bright and faint stars, p-Poor cluster with less than 50 stars. This cluster may be a challenge to identify.

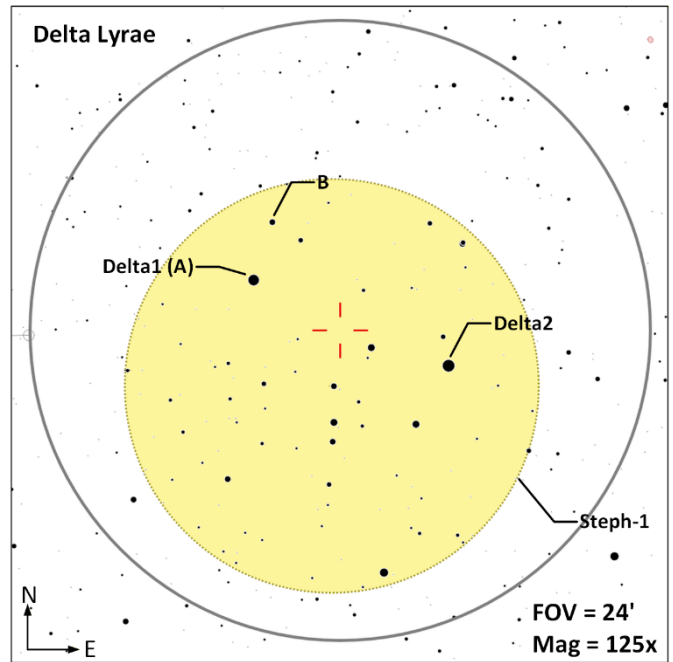
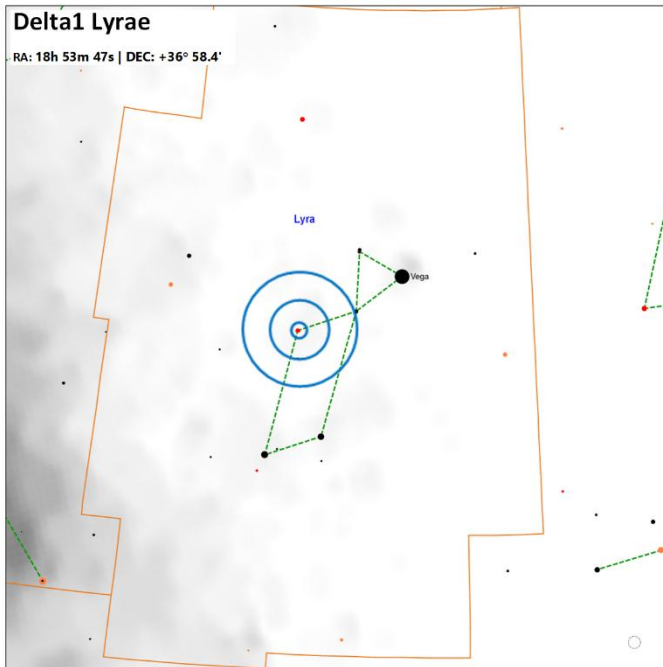


Delta Lyrae (DS || | Mag=5.6, 4.28 | Sep=630" | Spec=M4II, B2V | Color=red-orange, blue |) Both Delta1 and Delta2 are located in Steph 1. Although they appear close to each other, they are not physically associated; however, this optical pair regularly makes various color double star lists due to the pair's contrasting red-orange and blue colors. Interestingly, Delta1 is a double star (See below) and Delta2 is suspected of also being a double with a faint magnitude 11 companion.

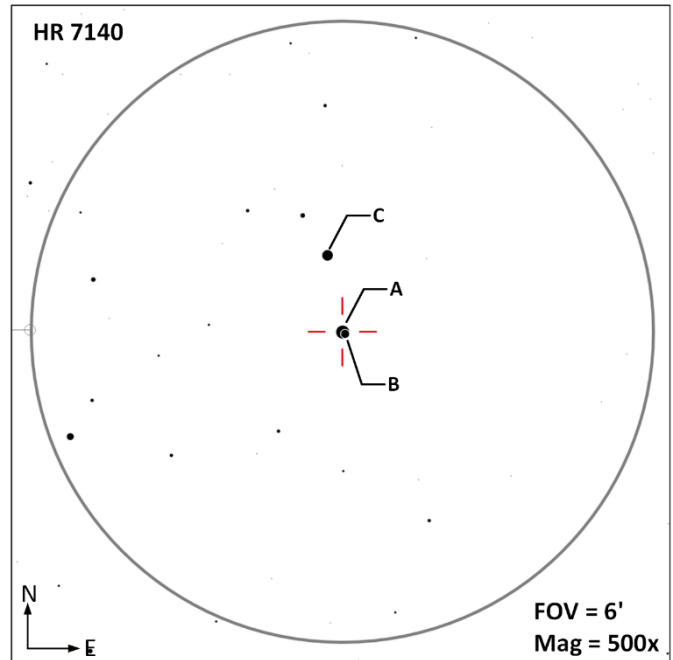
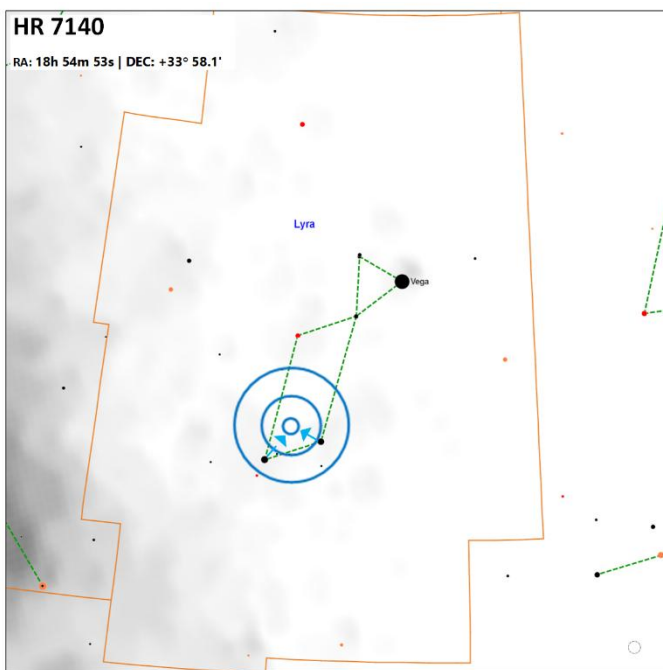


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Delta1 Lyrae (DS || **AB** | Mag=5.5,9.9 | Sep=175" | PA=20° | mBortle=9 | mApt=50mm | Spec=B2.5V, A | Color=blue-white, white) Delta1 is located about 1,080 light years away.

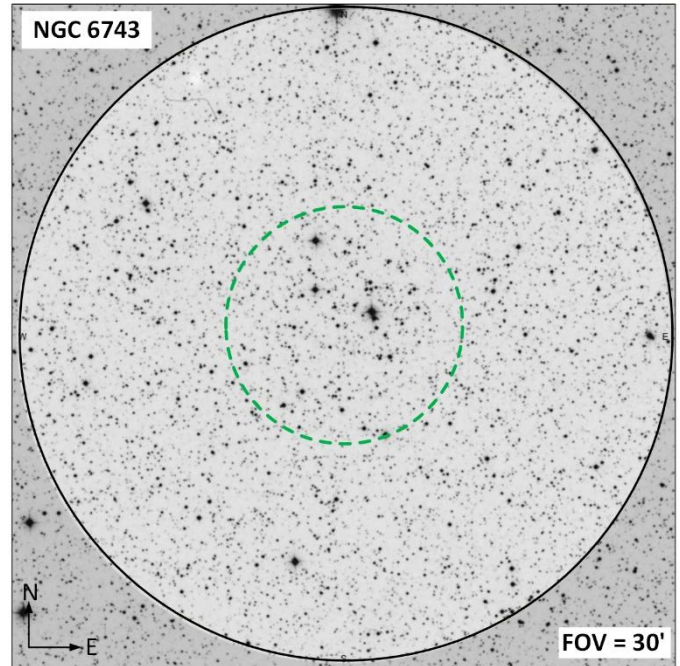
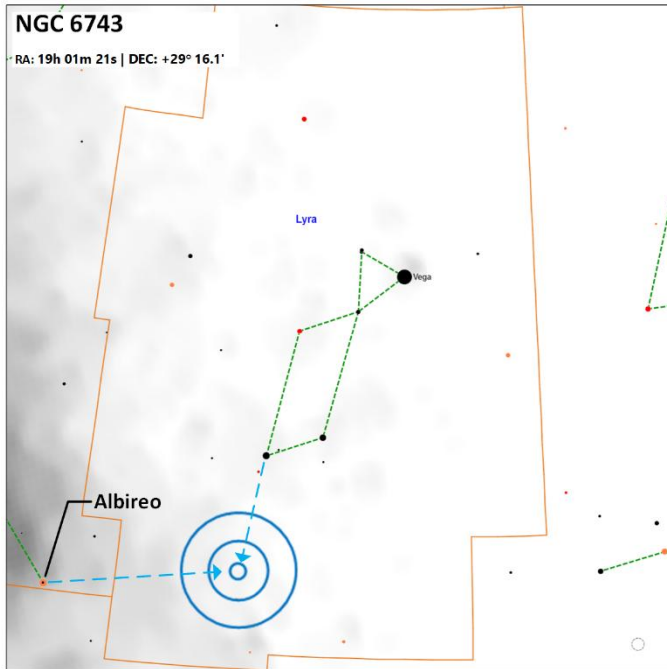


HR 7140 (MS-3 || **AB** | Mag=6.1,9.1 | Sep=1.80" | PA=130.1° | mBortle=9 | mApt=50mm | Spec=A8, G5III | Color=white, yellow || **AC** | Mag=6.1,7.6 | Sep=45.2" | PA=349° | mBortle=9 | mApt=50mm | Spec=A8, ? | Color=white,?) This triple star system is located 1,169 light years away. The “B” component is 645 AU from the “A” component.

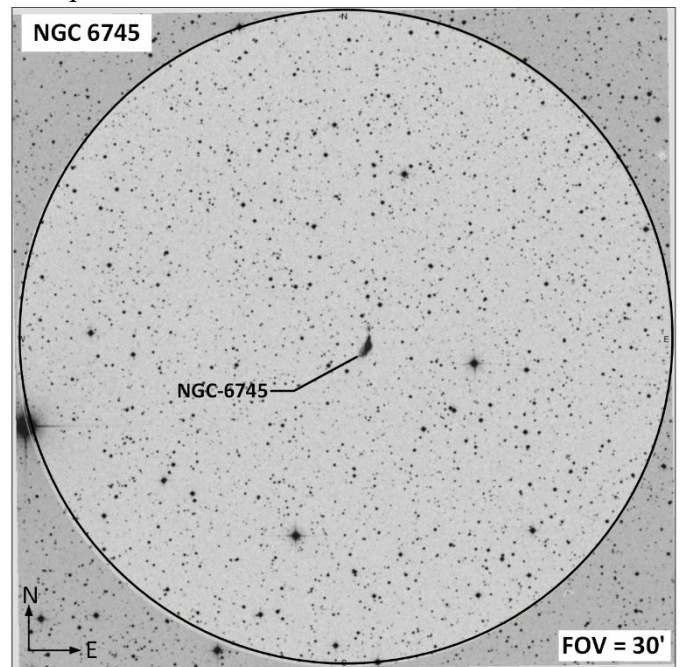
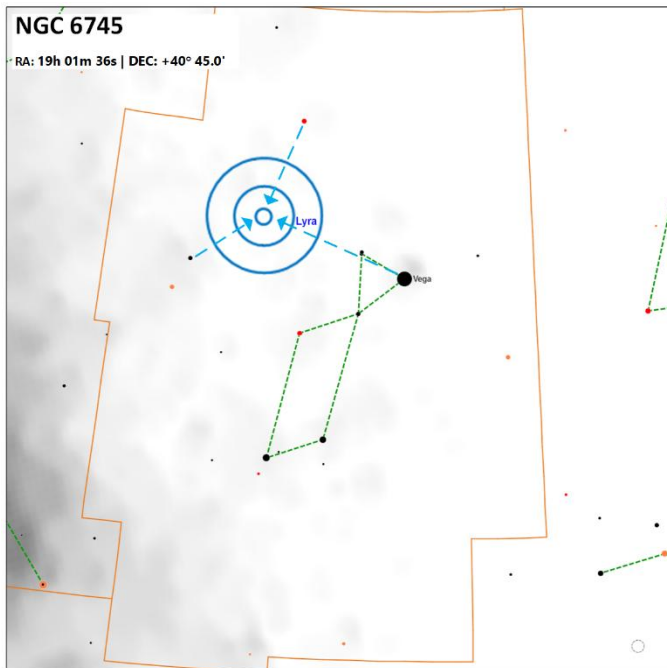


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NGC-6743 (OC || Mag=8.2 | Size=8' | mBortle=6 | mApt=130mm |) There seems to be a bit of a dispute as to whether this is an actual cluster, and there doesn't seem to be a Trumpler classification for this object. Distance estimated for this object is 3,624 light years with a physical diameter of 7 light years. Birren reports 35 stars visible in this cluster.

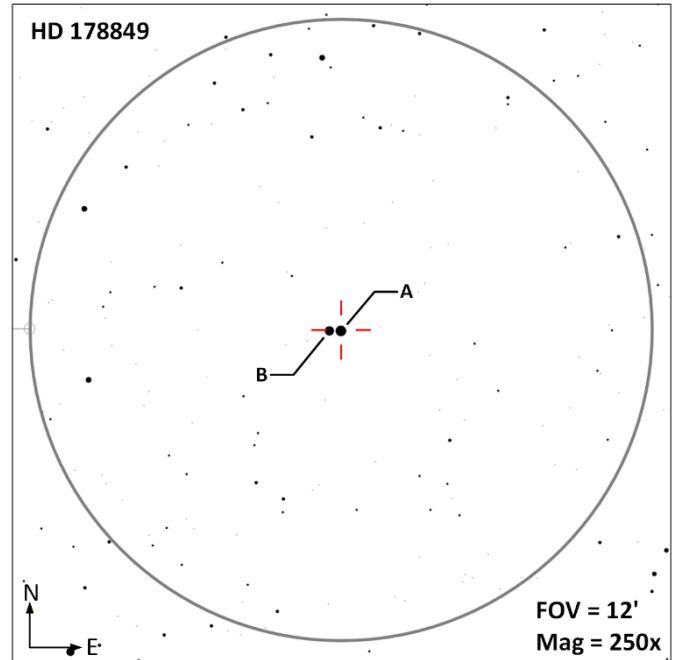
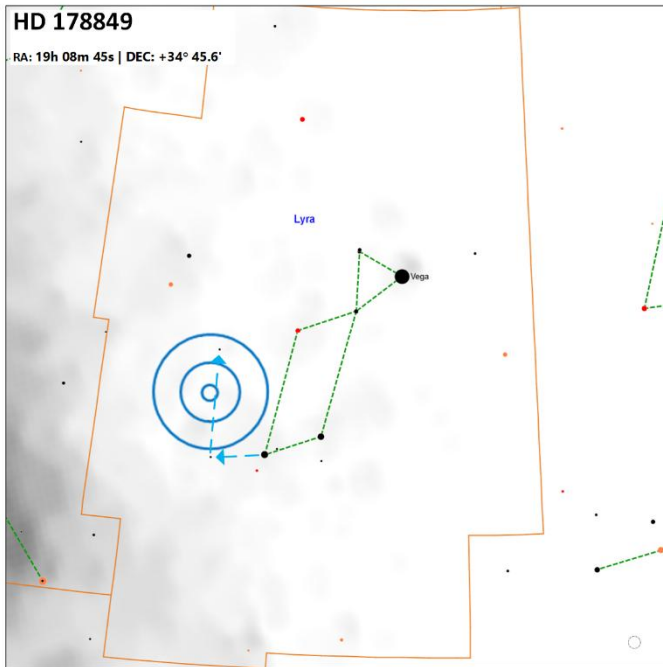


NGC-6745 (G || Mag=13.3 | Size=1.5'x0.7' | SB=22.0 | MC=Pec |) Another faint galaxy that is actually three interacting galaxies (apparent in photos) and has a peculiar shape.

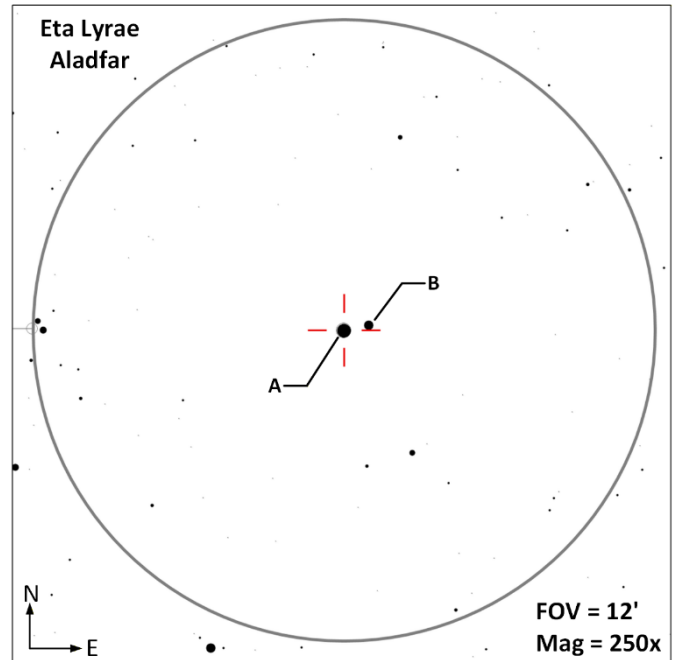
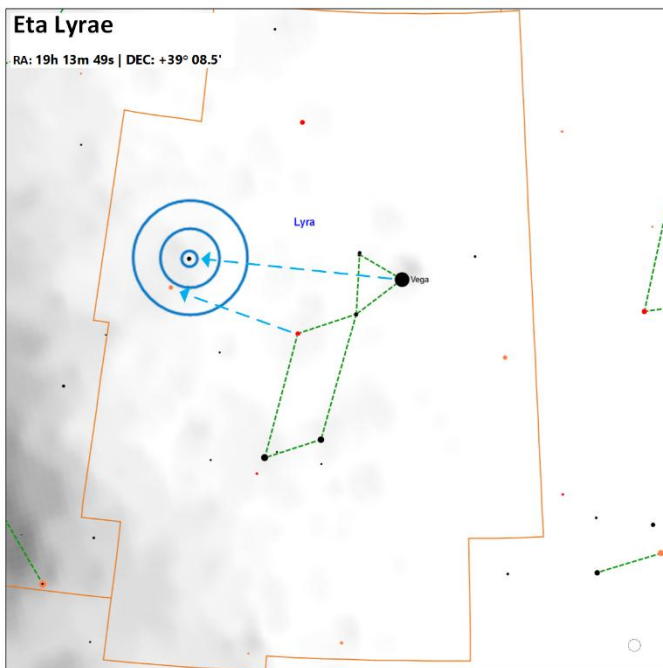


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HD 178849 (DS || | Mag=7.0,8.4 | Sep=13.6" | PA=269° | mBortle=9 | mApt=50mm | Spec=B3V, ? | Color=blue-white, blue-white |) This double star system appears on a number of lists as being a nice double. There seems to be conflicting information as to whether these components are actually physically associated with each other. This is reported as being a blue-white pair of stars.

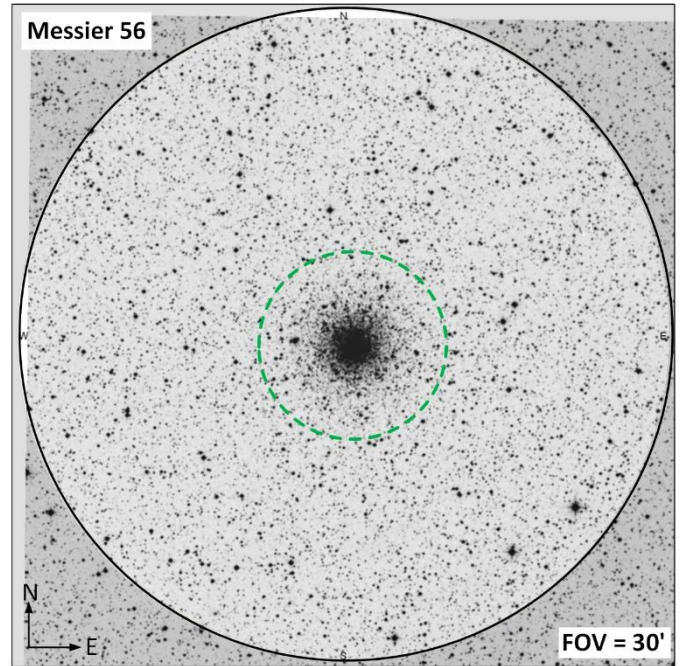
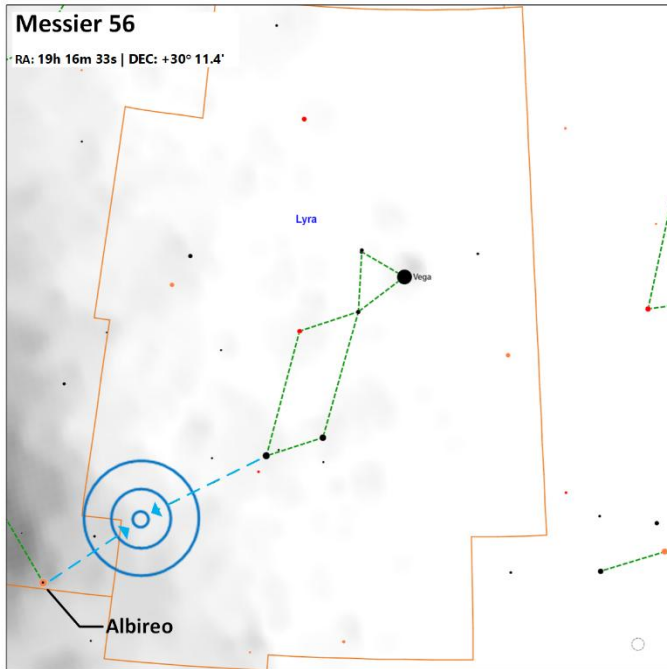


Eta Lyrae (DS || AB | Mag=4.4,8 | Sep=28" | PA=79° | mBortle=9 | mApt=50mm | Spec=B2.5IV, A0 | Color=blue-white, white |) Located 1,388 light years away, there is conflicting information as to whether this is a physical or optical double star system.

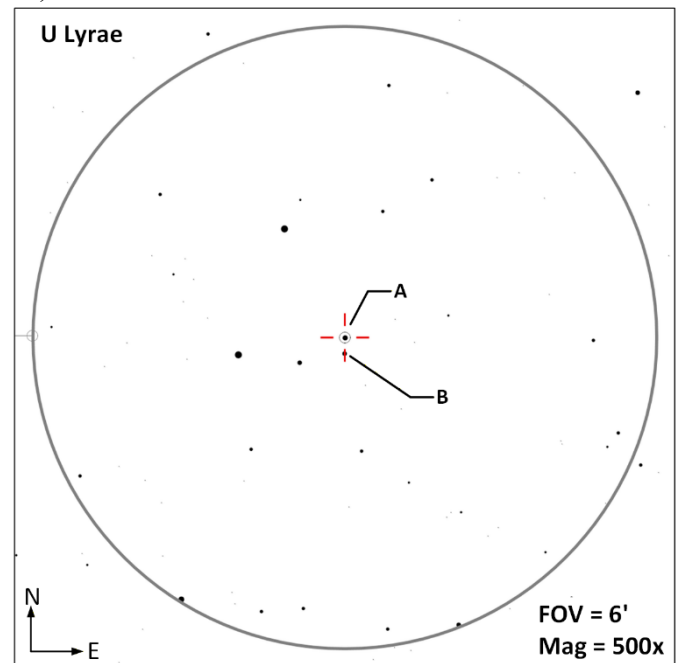
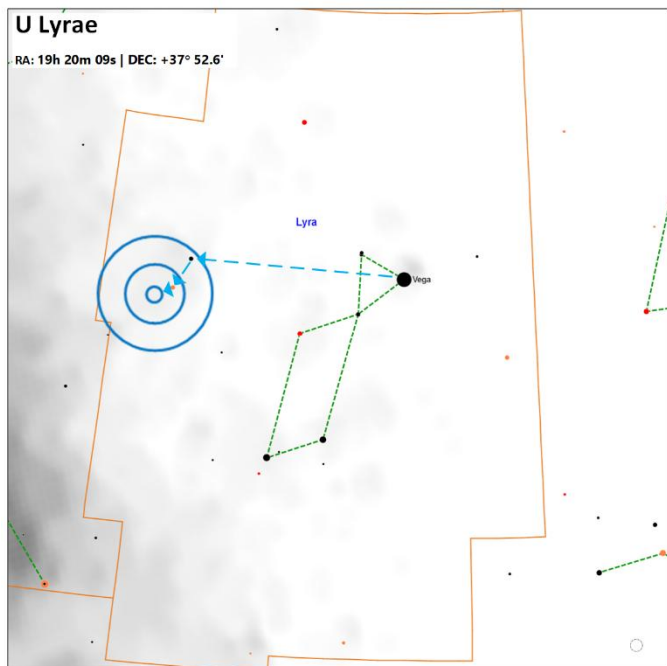


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Messier 56 (GC || | Mag=8.27 | Size=8.8' | SB=21.6 | mBortle=7 | mApt=50mm | MC=X |) Located 32,900 light years away and estimated to be 13.7 billion years old. It is suspected this object was acquired during a merger with a dwarf galaxy due to its retrograde orbit through the Milky Way. This is a class X globular cluster (Loose).

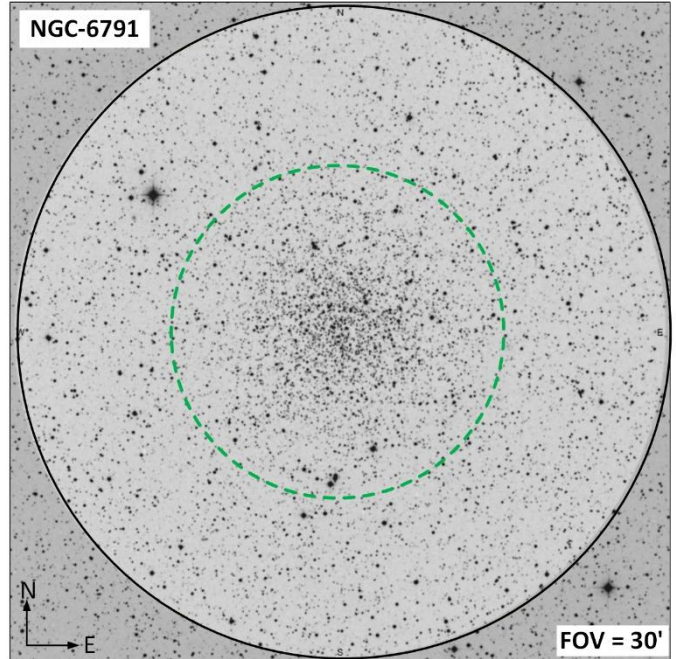
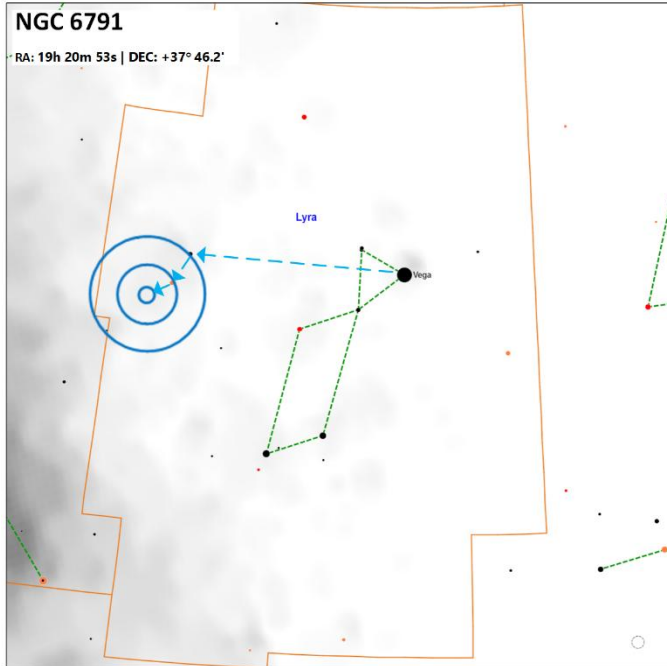


U Lyrae (CS, DS || Magnitude Range= 8.3 to 13.5 | Period=1.23y | BV=+3.4 | Spec=C4,5e (C-N0e) | Color=red || **AB** | Mag=10.2,13 | Sep=10.4" | PA=189° | mBortle=? | mApt=180mm | Spec=C4,5e (C-N0e), ? | Color=red, ? |) This carbon star has a wide magnitude range in a 1.2-year period and has a faint companion star that is suspected of not being physically associated (Optical double).



Constellation Guide

NGC-6791 (OC || Mag=9.5 | Size=16' | mBortle=? | mApt=250mm | MC=II2r |) One of the oldest and most metal-rich clusters in the Milky Way, estimated to be 8 billion years old. Located approximately 13,300 light years away with a physical diameter of 60 light years, this cluster contains faint stars, so a larger aperture telescope may be required to identify it. Trumpler Class II-Detached cluster with little central concentration, 2-Medium range of brightness between stars, r-Rich cluster with over 100 stars.



Constellation Guide
Observation Log: Lyra (Lyr)

Equipment Config A: _____ Config B: _____

Notes: _____

Date	Time	Config	Target	Notes

Date	Time	Config	Target	Notes

Constellation Guide
Observation Log: Lyra (Lyr)

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