Constellation Guide

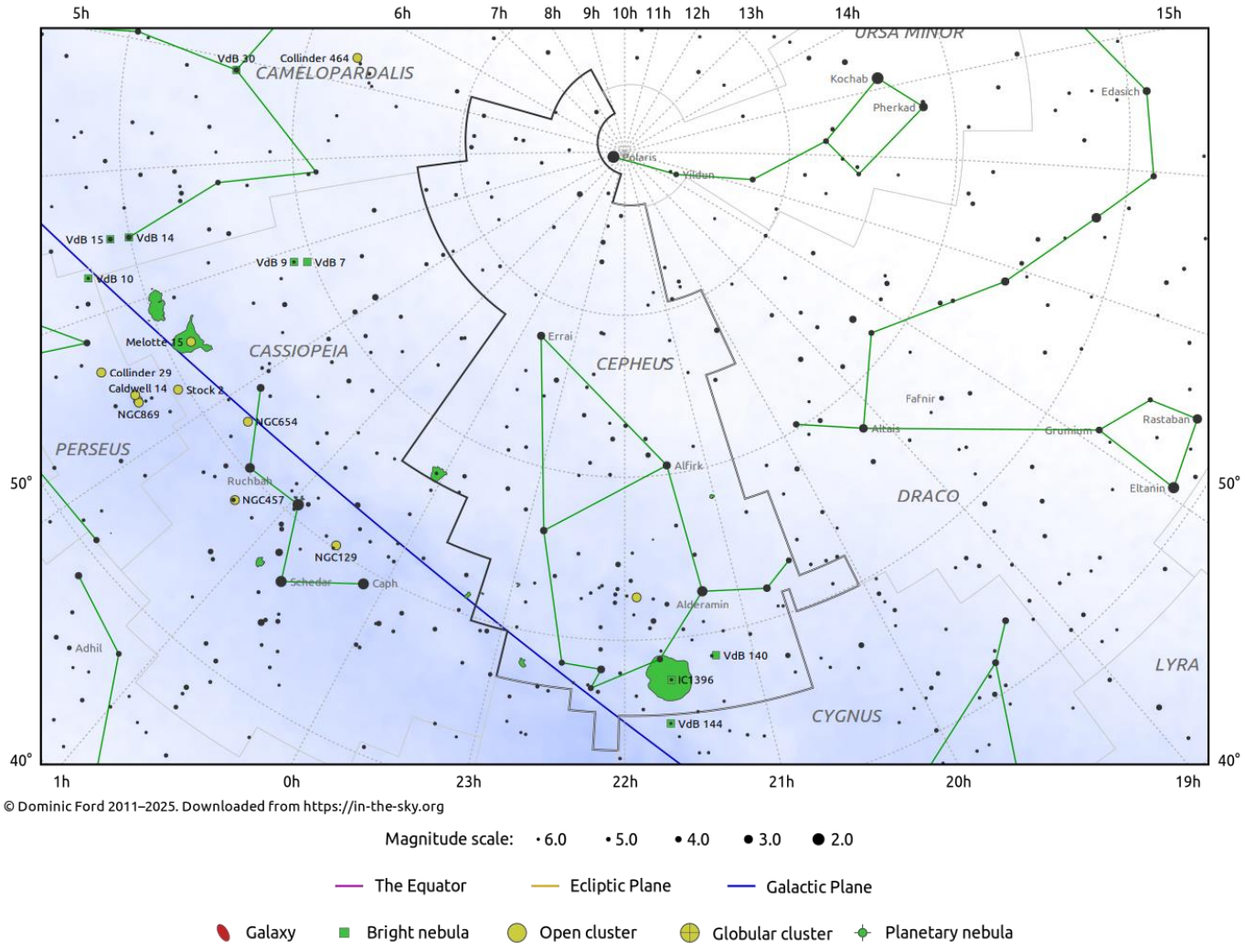
Cepheus (Cep)

Evening Visibility: **September - November**

Online Information: **Cepheus**

More Online Information: Garnet Star, Delta Cep, Alfirk, Alkurhah, S Cep, Elephant Trunk, NGC 188, NGC 6939, STAR 11, Iris Nebula, NGC 7160

In-The-Sky.org Constellation Map



Magnitude scale: 6.0 5.0 4.0 3.0 2.0

The Equator — Ecliptic Plane — Galactic Plane

Galaxy — Bright nebula — Open cluster — Globular cluster — Planetary nebula

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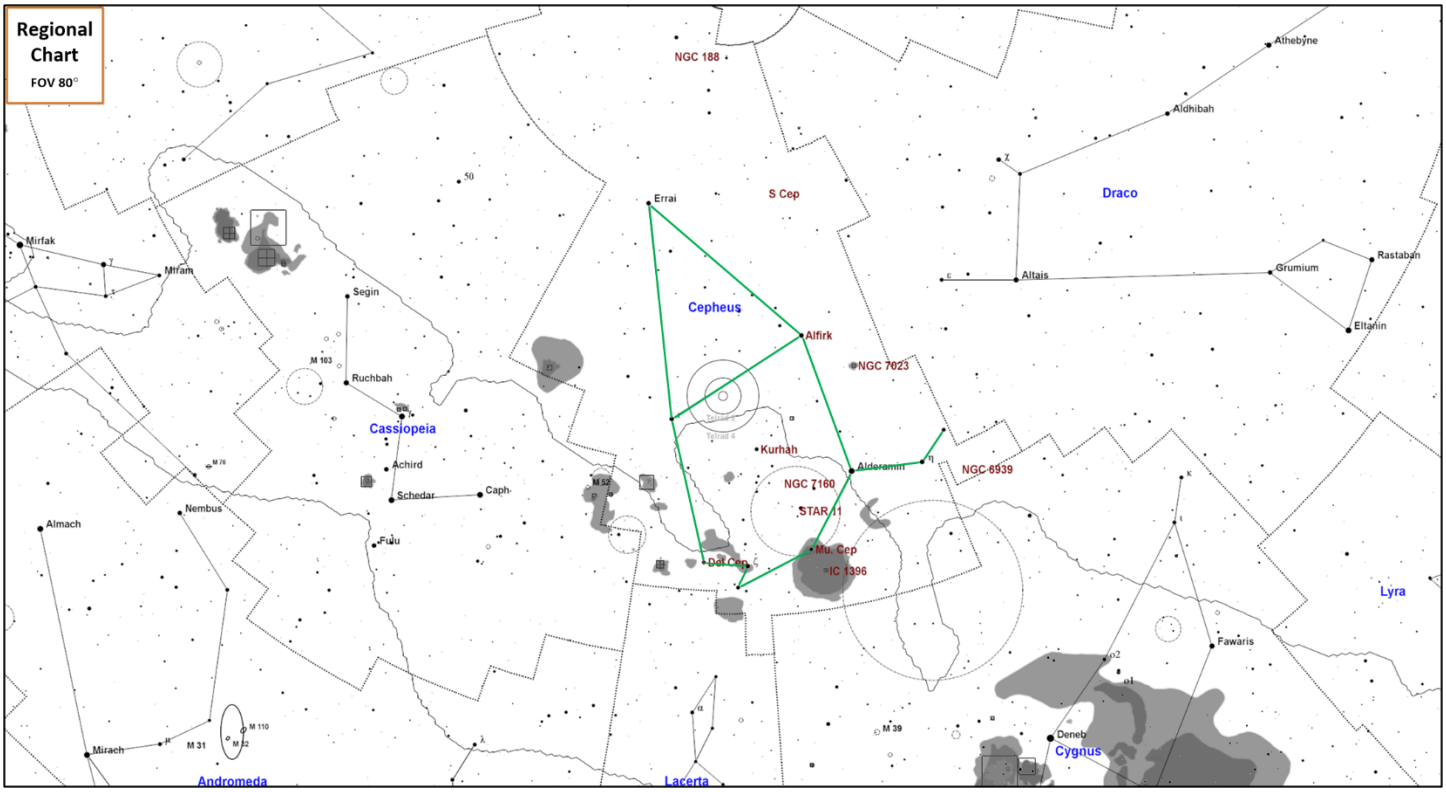
The Cepheus constellation is one of the Greek mythical constellations and represents King Cepheus, father of Andromeda and husband of Cassiopeia. The constellation is supposed to be the king on a thrown, but really is shaped more like a house. There are quite a few deep sky objects in this constellation, we have identified 11 of these, four multiple star systems, two carbon stars, five open clusters, one reflection nebula one emission nebula and one asterism.

Constellation Highlights

- **Garnet Star** (CS, MS-3) – Carbon star and multiple star system. This star is well known for its red color.

Constellation Targets Map



Objects Summary

Object (Type)	Ref	Aliases	Stats
Garnet Star (CS, MS-3)	1	SAO-033693, HIP 107259, Garnet Star, Erakis, HR 8315, HD 206936, ADS 15271, Mu Cep	**AB** | M = 4.3, 12.3 | Sep =19.5" | PA =263° | **AC** | M = 4.3, 12.7 | Sep=42.2" | PA=297° |
Delta Cep (DS)	1	SAO-034508, HIP 110991, 27 Cep, HR 8571, HD 213306, ADS 15987, δ Cep	**AC** | M = 4.2, 6.1 | Sep =41.0" | PA=191° |
Alfirk (DS)	1	SAO-010057, HIP 106032, 8 Cep, Beta Cep, HD 205021, STF 2806, ADS 15032, WDS21287+7034	**AB** | M = 3.2, 8.6 | Sep = 13.6" | PA=250° |

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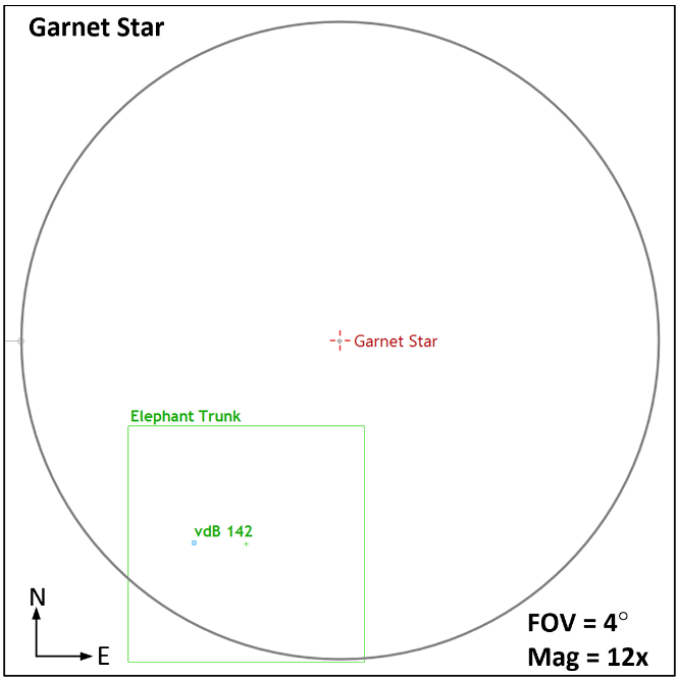
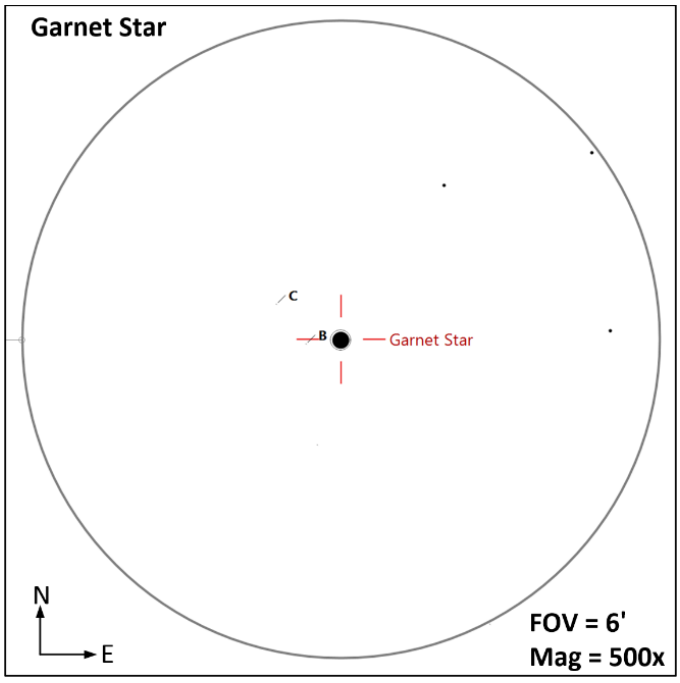
Object (Type)	Ref	Aliases	Stats
Alkurhah (MS-3)	1	SAO-019826, HIP 108917, Xi Cep, 17 Cep, HD 209791, STF 2863, ADS 15600, Kurhah	**AB** | M = 4.5, 6.4 | Sep=7.0" | PA =275° | **AC** | M = 4.5, 12.6 | Sep=112.7" | PA =208° |
S Cep (CS)		SAO-010100, HIP 106583, HD206362, BD+77 827	| Mag Range = 7.4 – 12.9 | Period = 484d)
Elephant Trunk (OC, EN)		IC 1396, Cr 439, Lund 995, OCL 222, Tr 37	| M = 3.5 | Size = 50' | SB = 20.6 |
NGC 188 (OC)		C 1, Cr 6, Mel2, Lund28, OCL309, Polarissima Cluster	| M = 8.1 | Size = 14' | SB = 22.5 |
NGC 6939 (OC)		CR423, Lund 960, OCL 217	| M = 7.8 | Size = 8' | SB = 20.9 |
STAR 11 (AS)		Cephus OB2 Association	| Size = 3° x 1.5° |
Iris Nebula (OC, RN)		NGC 7023, C 4, Ced 187, Cr 429, Be 39	| M = 7.0 | Size = 18' | SB = 21.9 |
NGC 7160 (OC)		Cr 443, Lund 1002, OCL 236	| M = 6.1 | Size = 7' | SB = 19.0 |

Garnet Star (CS, MS-3 | **AB** | M = 4.3, 12.3 | Sep =19.5" | PA =263° || **AC** | M = 4.3, 12.7 | Sep=42.2" | PA=297° |) – Mu Cephei is most noted for its red color, but is also a sextet (6) star system, but only three components are viewable by moderate to large telescopes. While the primary component (A) is quite bright at magnitude 4.3 the secondary stars (B, C) measure in at a very dim 12.3 and 12.7 magnitude, so these may be difficult to locate in a telescope. This star is a red giant and one of the largest known stars with a radius of over 1,000 times that of the sun.





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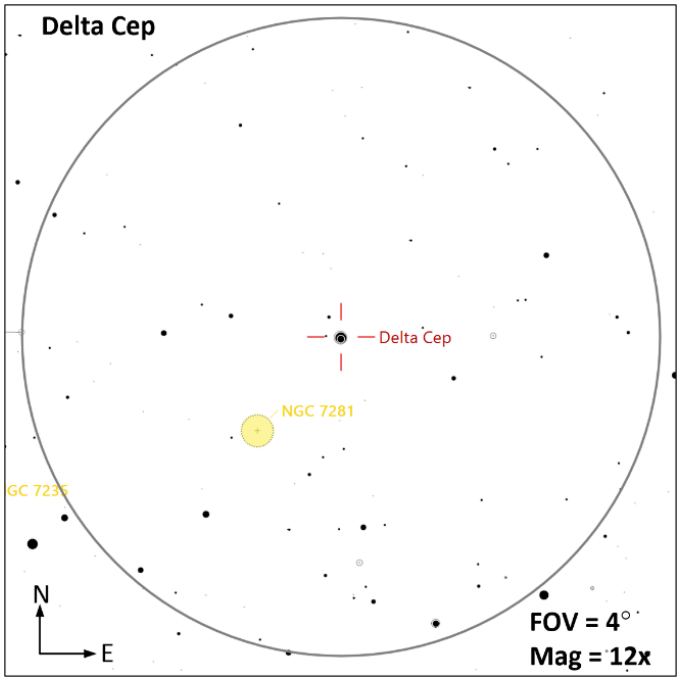
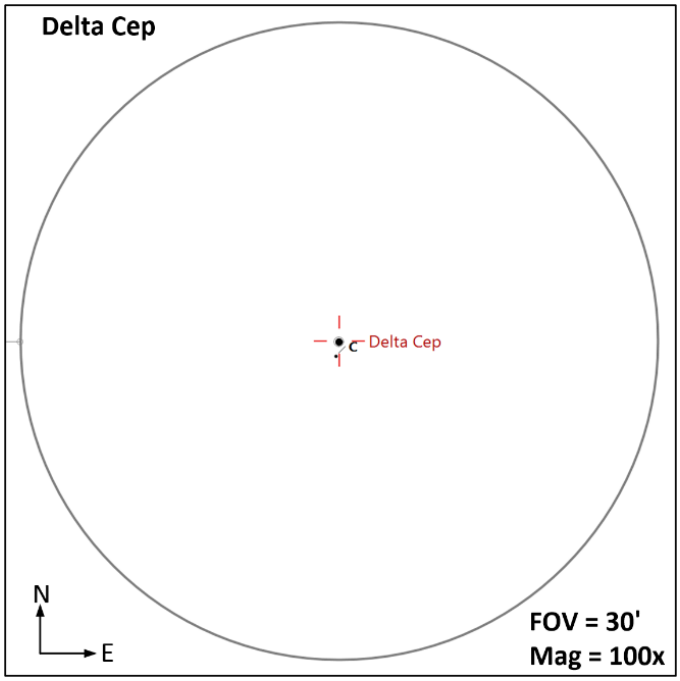
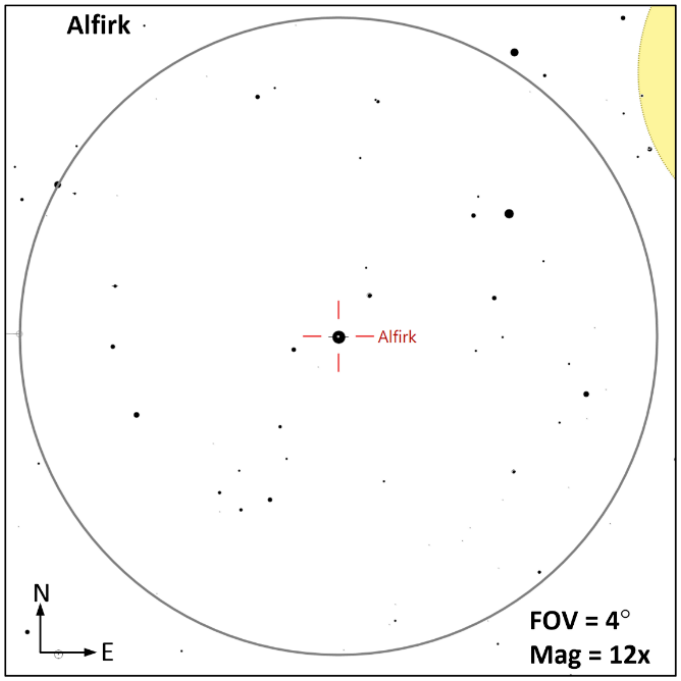
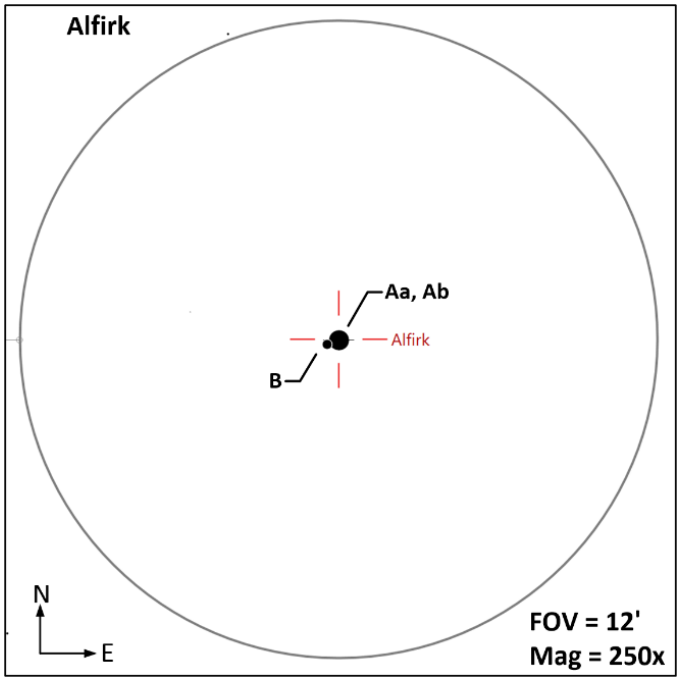
Delta Cep (DS **AC** | M = 4.2, 6.1 | Sep AC = 41.0" | PA=191° |) – This is a variable star ranging from 3.6 to 4.3 magnitude. It is also a multiple star system (9 components?) with two components (A & C) that should be able to be resolved in most small telescopes. The remaining components are very dim at mag 13 and less.





Alfirk (DS **AB** | M = 3.2, 8.6 | Sep = 13.6" | PA=250° |) –Beta Ceph is technically a triple star system, but the Aa, Ab components cannot be visually separated. The B component has an orbital period of about 30,000 years.





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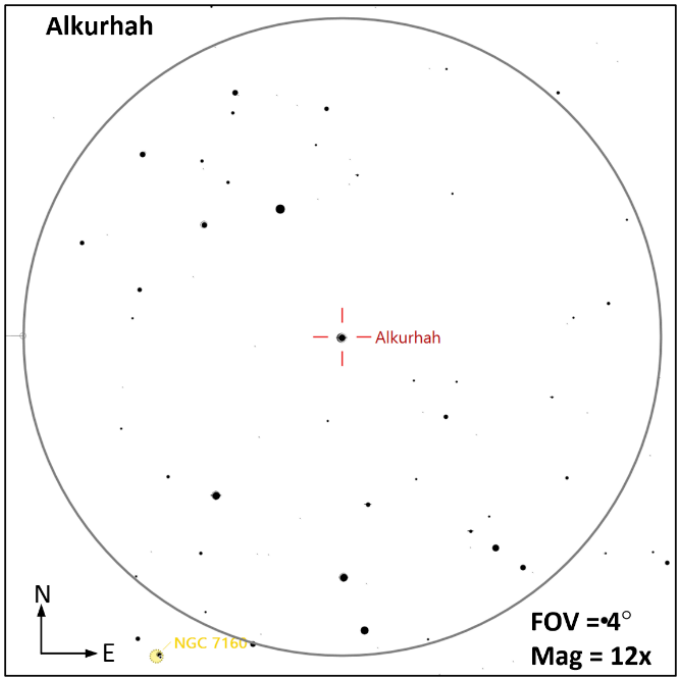
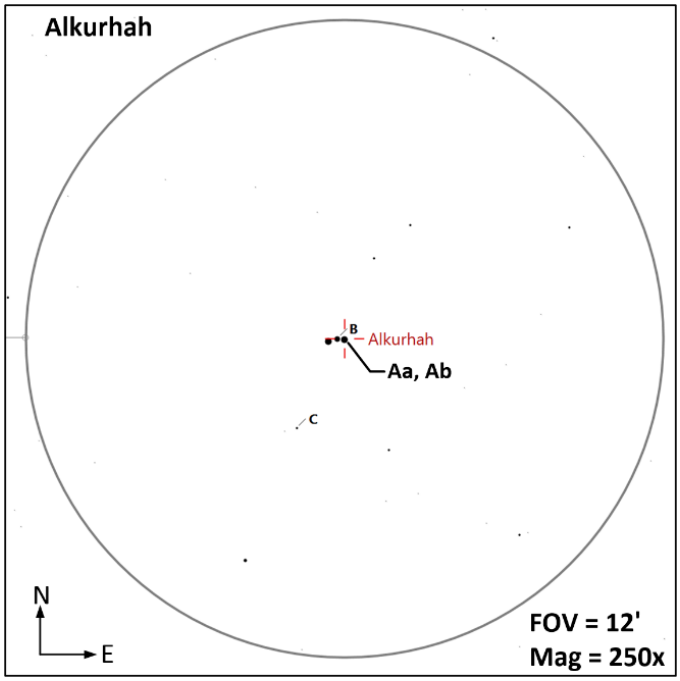
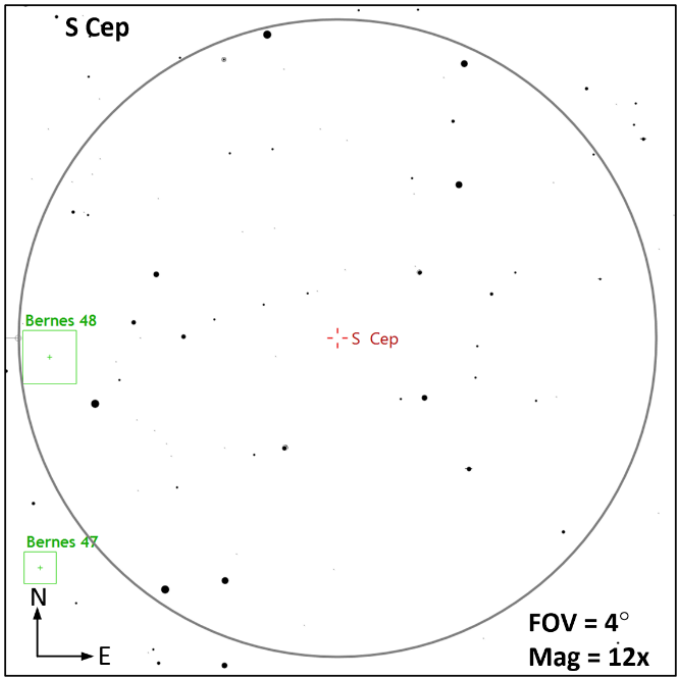
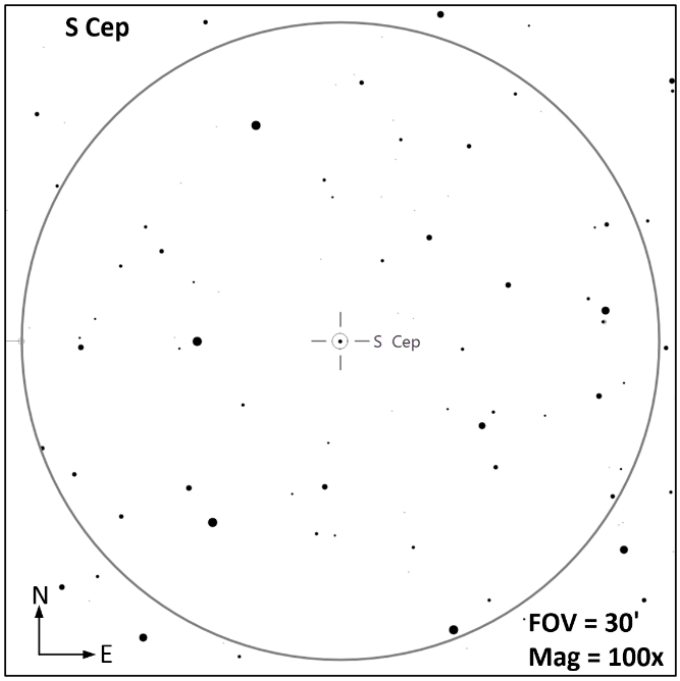
Alkurhah (MS-3 **AB** | M = 4.5, 6.4 | Sep=7.0” | PA =275° || **AC** | M = 4.5, 12.6 | Sep=112.7” | PA =208° |) Kurhah is quadruple star system with three components that can be separated in small telescopes. There appears to be a third star very close to the B component that is not associated with this system. Note the C component is quite dim at 12.5 magnitude and pretty far removed at 112.7” away.



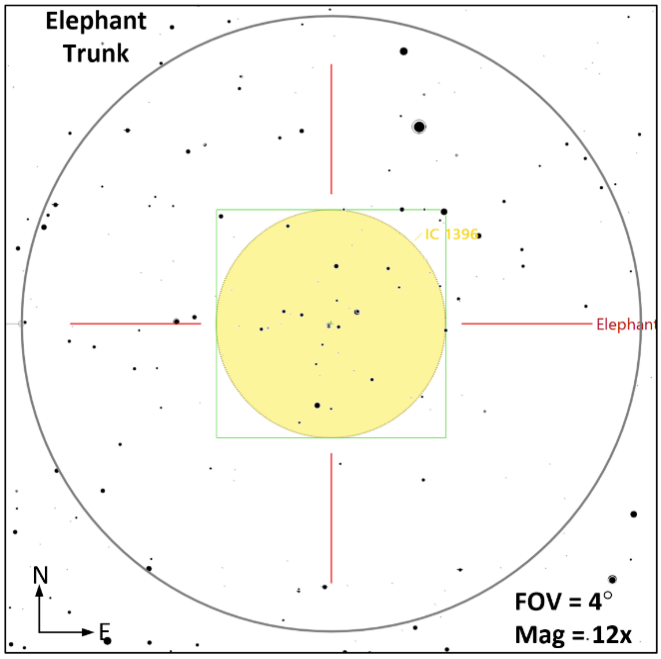


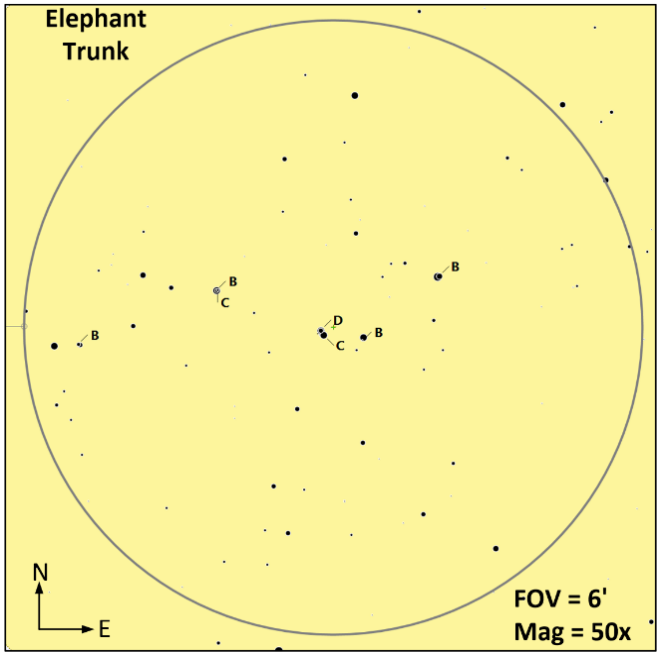
S Cep (CS | Mag Range = 7.4 – 12.9 |) – This carbon star approximately 1,590 ly from earth and is a variable star that ranges in magnitude from 7.4 to 12.9 over a period of about 484 days.



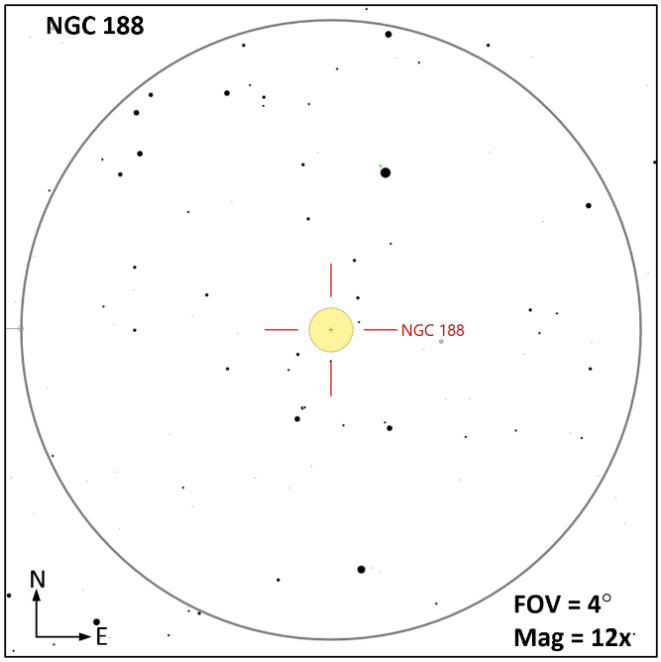


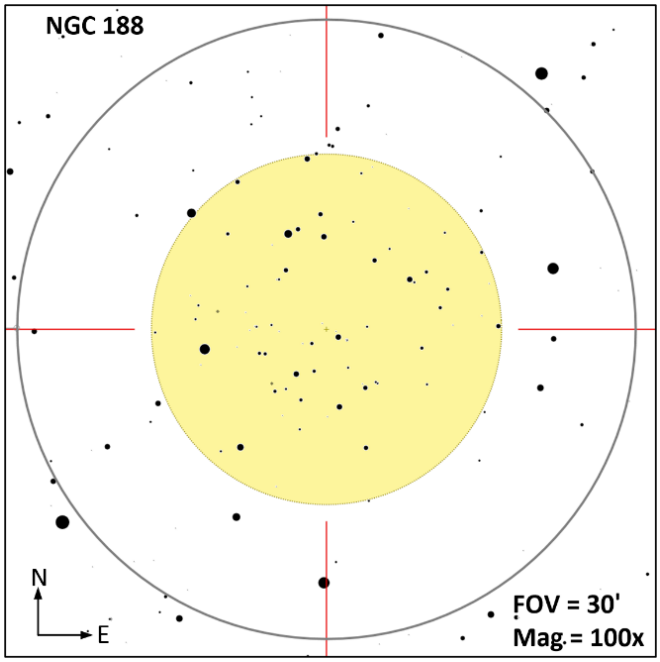
Elephant Trunk (OC, EN | M = 3.5 | Size = 50’ | SB = 20.6 |) – IC 1396 is an open cluster embedded in a large region of faint nebulosity. This is a large open cluster that will be best viewed with binoculars or very low magnification in telescopes. Nebulosity will likely not be seen except under ideal conditions and with large aperture binoculars. Using a O-III filter may help increase the chances of seeing the nebulosity.



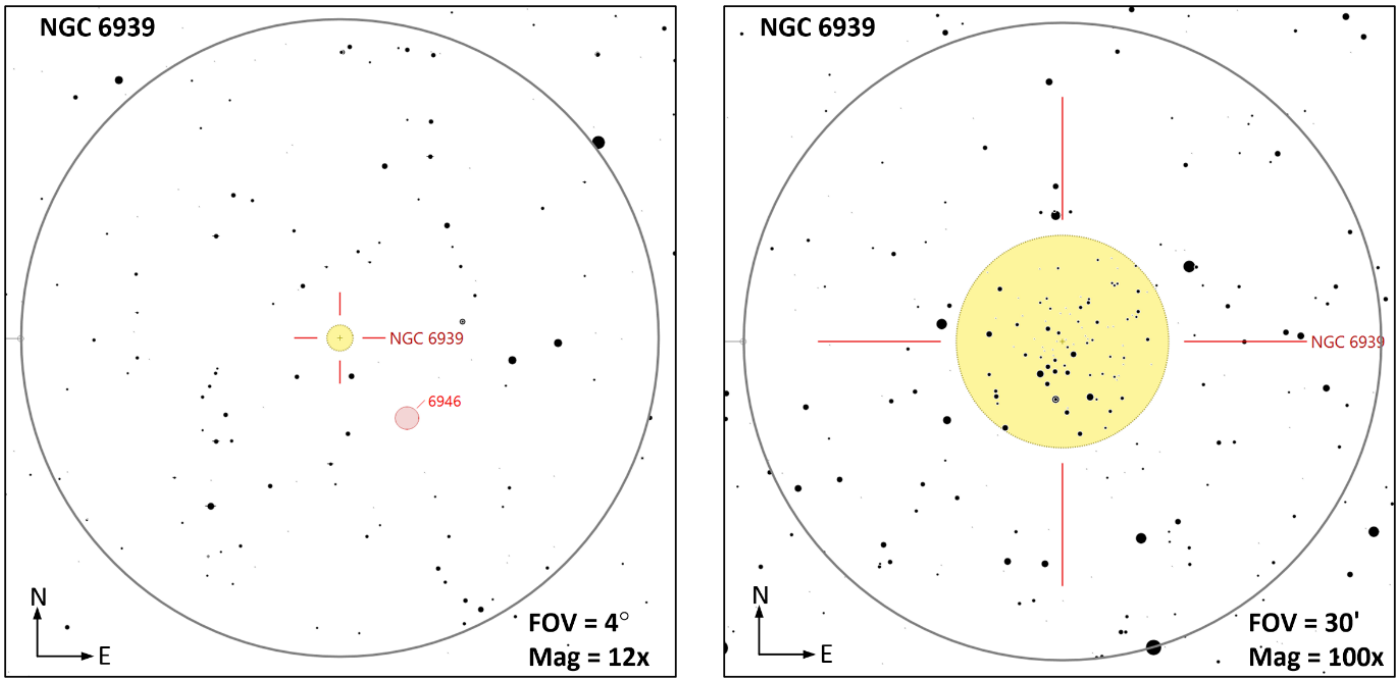


NGC 188 (OC | M = 8.1 | Size = 14’ | SB = 22.5 |) – The Polarissima Cluster is open cluster is one of the oldest OC known with an estimated age of about 6.8 billion years; comparable to the younger globular clusters. The cluster is composed of about 50 – 60 dim stars ranging in magnitude of 12 to 15th magnitude.

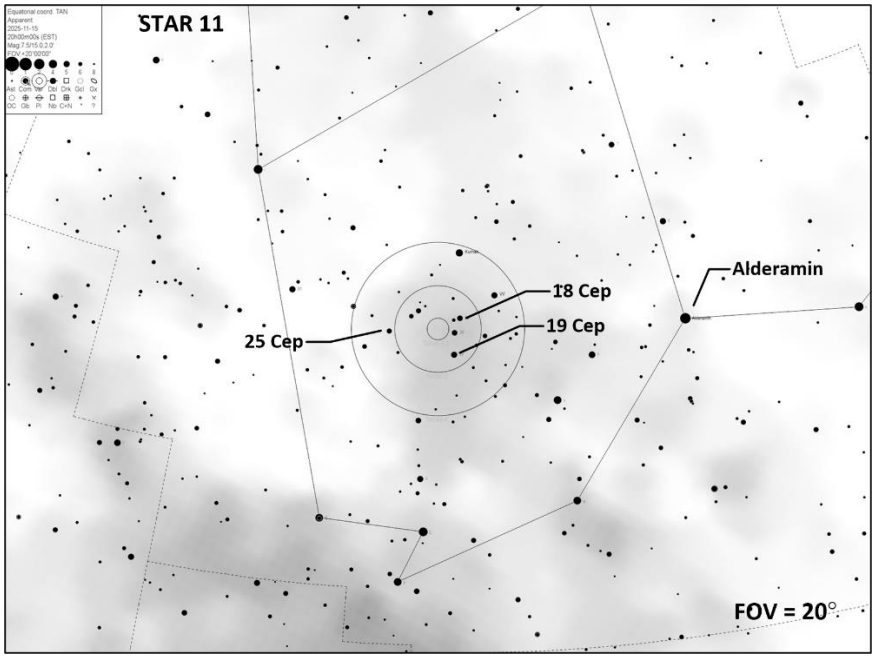




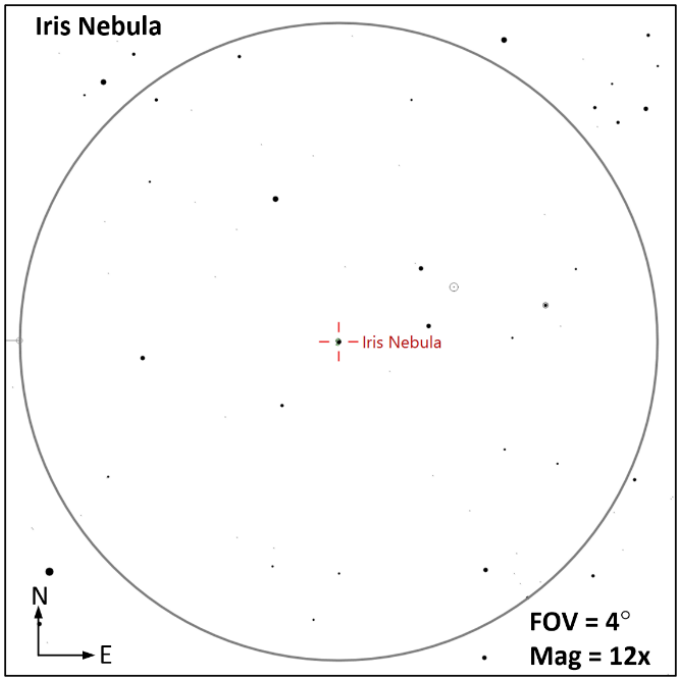
NGC 6939 (OC | M = 7.8 | Size = 8’ | SB = 20.9 ||) – A loose fairly large open cluster located 2° SW of Eta Cephei containing over 70 stars. The galaxy NGC 6946 in Cygnus is located within 1degree of this cluster.

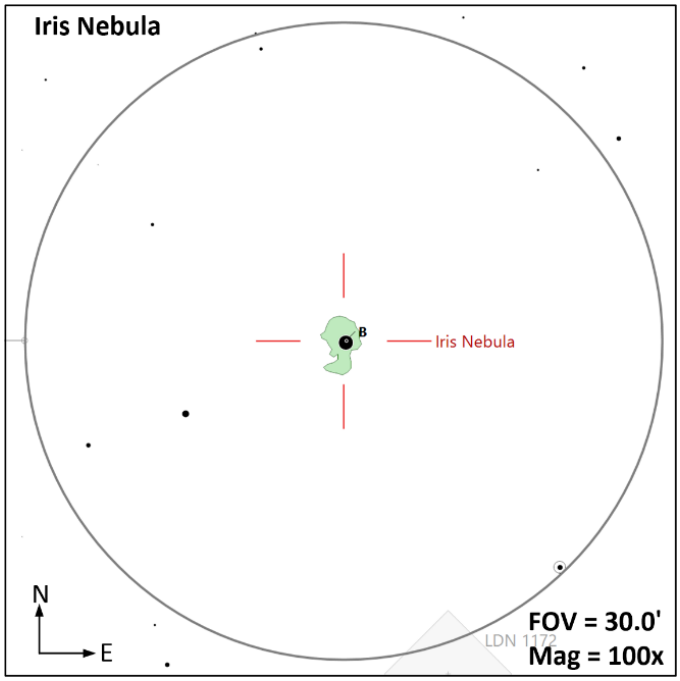


STAR 11 (AS | Size = 3.0° x 1.5°|) – Harrington describes this as “a conspicuous bright band of starlight that breaks off from the mainstream of the Cygnus Milky Way”,,. ”that measures 10° x 5°”. There is no obvious shape associated with this object, so not sure why it was included by Harrington in the STAR list. This object must be viewed in binoculars due to its huge size.

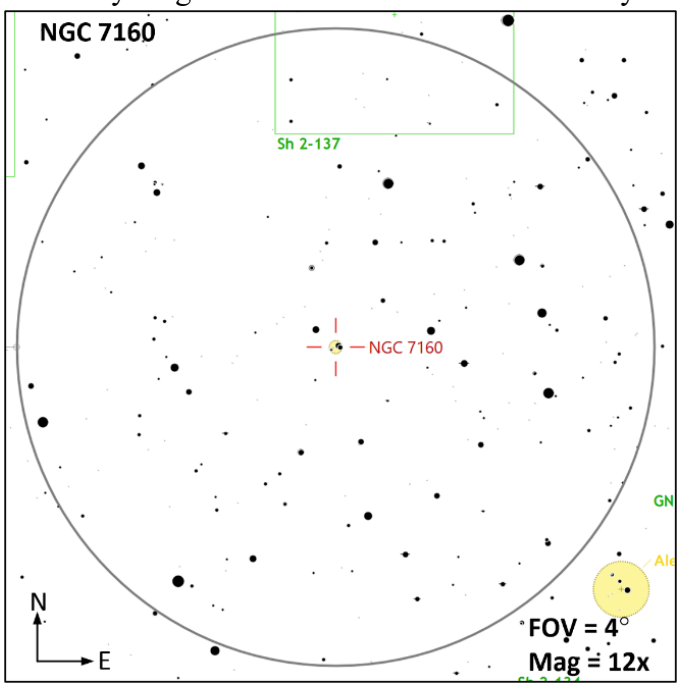


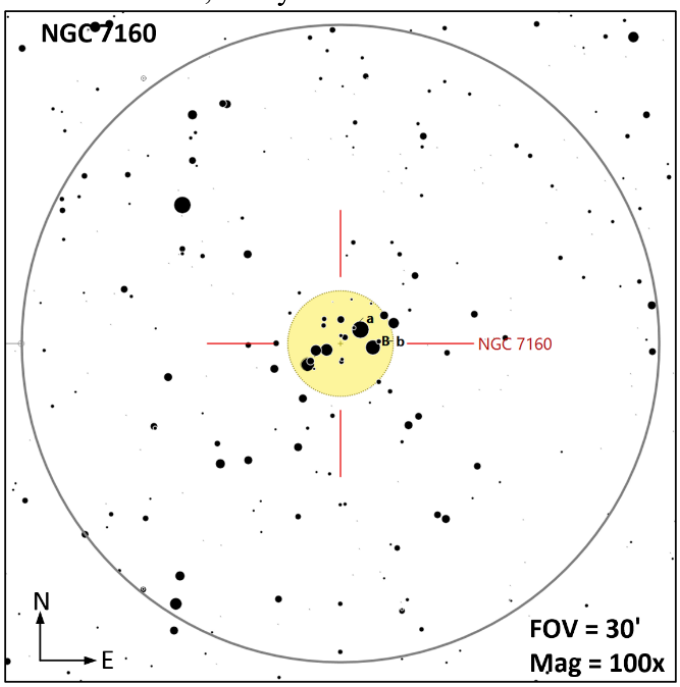
Iris Nebula (OC, RN | M = 7.0 | Size = 18’ | SB = 21.9 |) – A bright reflection nebula (LBN 487) that contains the open cluster NGC 7023). The nebula is illuminated by the star HD 200775 and is 1,300 light years away. Unlike most nebulae, reflection nebulae are more broadband emitters, as opposed to narrowband, so typical narrowband filters (nebula filters) don’t really help with seeing these objects.





NGC 7160 (OC | M = 6.1 | Size = 7’ | SB = 19.0 |) – This open cluster is part of the stellar association Cepheus OB2, a very loose association of stars that share similar movement vectors, ages and chemical composition. This is a young cluster between 10 to 19 million years old and is about 2,600 ly from earth.





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References, Resources and Tools used to create this document

The resources listed below were utilize 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
  - Sky Spot Books
    - Bright Telescopic Objects: Brent Watson
    - Select Double Stars: Brent Watson
    - Overlooked Objects: Bret Watson
- Asterisms
  - Astronomical League: Asterisms observing program List
  - Asterisms: Demeiza Ramakers
  - Pattern Asterisms: John Chiravalle
- 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

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 2010
- IrfanView Version 4.72