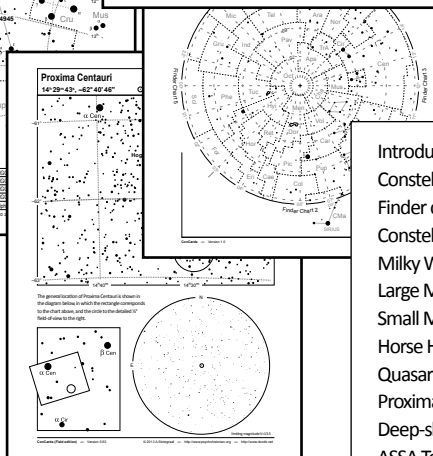
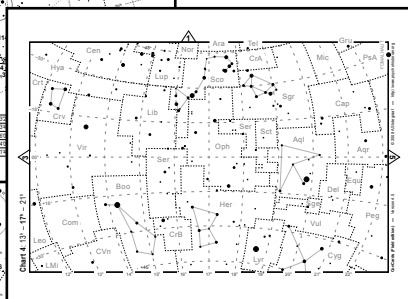
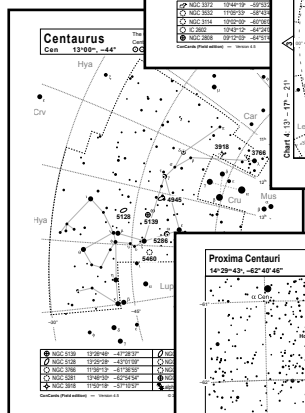
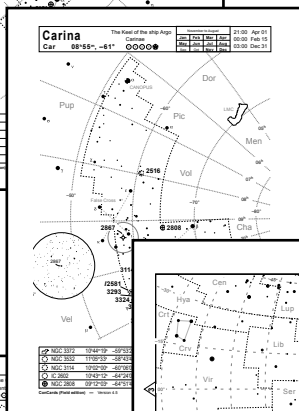
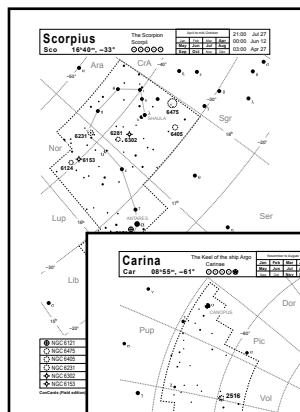


# ConCards

Version 1.5, 2014 October



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A constellation-by-constellation guide to the best deep-sky objects visible from the southern hemisphere



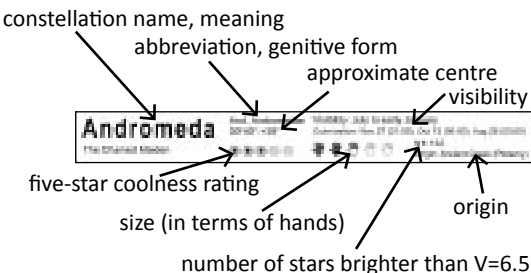
# Introduction

Thanks for choosing the ConCards for your observing!

What you have here is a set of star charts, one per constellation. All the constellations that are at least partially visible from the southern hemisphere are illustrated (Camelopardalis, Cassiopeia, Cepheus, Draco and Ursa Minor have been omitted as these are too far north).

Each constellation has a fanciful stick figure drawn connect-the-dots style, as well as the official boundaries of the constellation in a bold dashed-line. These boundaries can be used to help you orient the card correctly when you're still learning to find the constellations using the five finder charts.

Each ConCard also shows the positions of the coolest deep-sky objects (and occasionally multiple stars or interesting single stars) within that constellation, together making up a wonderful “bucket list” of celestial treasures to collect. Special charts for objects of particular interest – the Horse Head Nebula, 3C 273 (the brightest quasar) and Proxima Centauri (nearest star to the Sun) – are also presented. Several deep-sky catalogues and observing aides make up the remaining pages.














The ConCards are presented as A4-sized pages for those who prefer a larger print. You could also have them printed A5-sized, double-sided and then spiral-bound to create a smallish, handy and comprehensive guide to the southern sky.

Special thanks to Hendrik van Rensburg, Johan Retief, George Dehlen and Magda Streicher for suggestions and for spotting various bugs in the pre-release versions. Remaining bugs are all my bad.

The ConCards can be downloaded from DOCdb.net [ <http://www.docdb.net/tutorials/concards.php> ] where you can also find a treasury of deep-sky related info.

Auke Slotegraaf  
Somerset West, 2013 August 06

Table 1. Symbols used for deep-sky objects shown on the ConCards

 galaxy	 bright nebula	 star cluster with nebula
 open cluster	 dark nebula	 multiple star
 asterism	 bright & dark nebula	 interesting star
 globular cluster	 planetary nebula	

## Constellation visibility (arranged by season)

Constellation	date of culmination at		
	21:00	00:00	03:00
Horologium	Jan 3	Nov 20	Oct 5
Perseus	Jan 8	Nov 25	Oct 10
Reticulum	Jan 14	Nov 30	Oct 15
Eridanus	Jan 16	Dec 2	Oct 17
Taurus	Jan 19	Dec 6	Oct 21
Caelum	Jan 27	Dec 13	Oct 29
Dorado	Feb 3	Dec 20	Nov 4
LMC	Feb 6	Dec 23	Nov 8
Mensa	Feb 6	Dec 23	Nov 8
Lepus	Feb 8	Dec 26	Nov 10
Orion	Feb 9	Dec 26	Nov 11
Pictor	Feb 9	Dec 27	Nov 11
Columba	Feb 12	Dec 30	Nov 14
Auriga	Feb 14	Jan 1	Nov 16
Monoceros	Feb 28	Jan 14	Nov 29
Gemini	Feb 28	Jan 14	Nov 30
Canis Major	Feb 28	Jan 14	Nov 30
Canis Minor	Mar 12	Jan 26	Dec 11
Volans	Mar 13	Jan 27	Dec 13
Lynx	Mar 13	Jan 27	Dec 13
Puppis	Mar 14	Jan 28	Dec 13
Cancer	Mar 28	Feb 11	Dec 27
Pyxis	Mar 31	Feb 14	Dec 30
Carina	Apr 1	Feb 15	Dec 31
Hydra	Apr 6	Feb 21	Jan 6
Vela	Apr 8	Feb 22	Jan 7
Antlia	Apr 19	Mar 5	Jan 18
Chamaeleon	Apr 20	Mar 6	Jan 20
Sextans	Apr 21	Mar 7	Jan 20
Ursa Major	Apr 22	Mar 8	Jan 21
Leo Minor	Apr 22	Mar 8	Jan 22
Leo	Apr 27	Mar 13	Jan 27
Crater	May 7	Mar 24	Feb 6
Corvus	May 23	Apr 9	Feb 22
Musca	May 25	Apr 10	Feb 23
Crux	May 26	Apr 11	Feb 24
Coma Berenices	May 28	Apr 14	Feb 27
Centaurus	Jun 1	Apr 17	Mar 3
Canes Venatici	Jun 2	Apr 18	Mar 3
Virgo	Jun 6	Apr 23	Mar 8
Boötes	Jun 27	May 14	Mar 29
Circinus	Jul 1	May 18	Apr 2
Libra	Jul 5	May 22	Apr 6

Constellation	date of culmination at		
	21:00	00:00	03:00
Lupus	Jul 6	May 22	Apr 6
Serpens (caput)	Jul 12	May 28	Apr 12
Corona Borealis	Jul 15	Jun 1	Apr 16
Triangulum Aust.	Jul 17	Jun 2	Apr 17
Norma	Jul 18	Jun 3	Apr 19
Scorpius	Jul 27	Jun 12	Apr 27
Apus	Jul 29	Jun 14	Apr 29
Ophiuchus	Jul 31	Jun 17	May 2
Hercules	Aug 5	Jun 21	May 6
Ara	Aug 5	Jun 21	May 6
Serpens (cauda)	Aug 20	Jul 6	May 21
Corona Australis	Aug 27	Jul 13	May 28
Scutum	Aug 27	Jul 13	May 28
Lyra	Aug 29	Jul 15	May 30
Sagittarius	Aug 31	Jul 17	Jun 1
Telescopium	Sep 4	Jul 21	Jun 6
Pavo	Sep 6	Jul 23	Jun 7
Sagitta	Sep 11	Jul 28	Jun 13
Aquila	Sep 11	Jul 29	Jun 13
Cygnus	Sep 22	Aug 8	Jun 23
Vulpecula	Sep 22	Aug 8	Jun 23
Capricornus	Oct 1	Aug 17	Jul 2
Microscopium	Oct 1	Aug 17	Jul 2
Delphinus	Oct 2	Aug 19	Jul 4
Equuleus	Oct 4	Aug 20	Jul 5
Indus	Oct 5	Aug 21	Jul 7
Octans	Oct 18	Sep 3	Jul 19
Piscis Austrinus	Oct 22	Sep 7	Jul 24
Pegasus	Oct 24	Sep 9	Jul 25
Lacerta	Oct 25	Sep 10	Jul 26
Grus	Oct 26	Sep 11	Jul 27
Aquarius	Oct 27	Sep 12	Jul 28
Tucana	Nov 14	Sep 30	Aug 15
Sculptor	Nov 21	Oct 7	Aug 22
Pisces	Nov 27	Oct 13	Aug 28
Andromeda	Nov 27	Oct 13	Aug 28
SMC	Nov 30	Oct 16	Aug 31
Phoenix	Nov 30	Oct 16	Aug 31
Cetus	Dec 12	Oct 29	Sep 13
Triangulum	Dec 18	Nov 3	Sep 18
Hydrus	Dec 21	Nov 6	Sep 21
Aries	Dec 27	Nov 12	Sep 28
Fornax	Dec 28	Nov 13	Sep 29

**Chart 1: Circumpolar region ( $\delta < -30^\circ$ )**

# Finder charts

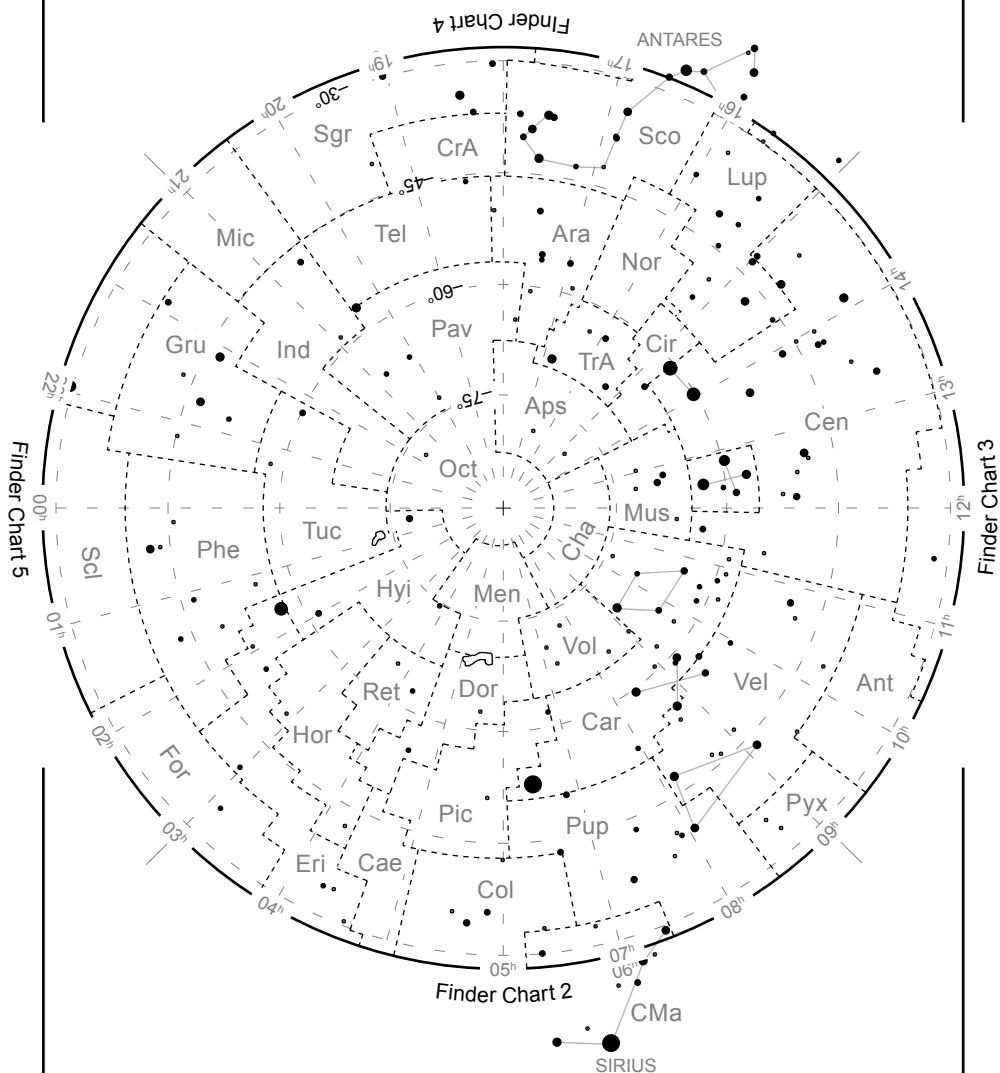


Chart 2: 01<sup>h</sup> – 05<sup>h</sup> – 09<sup>h</sup>

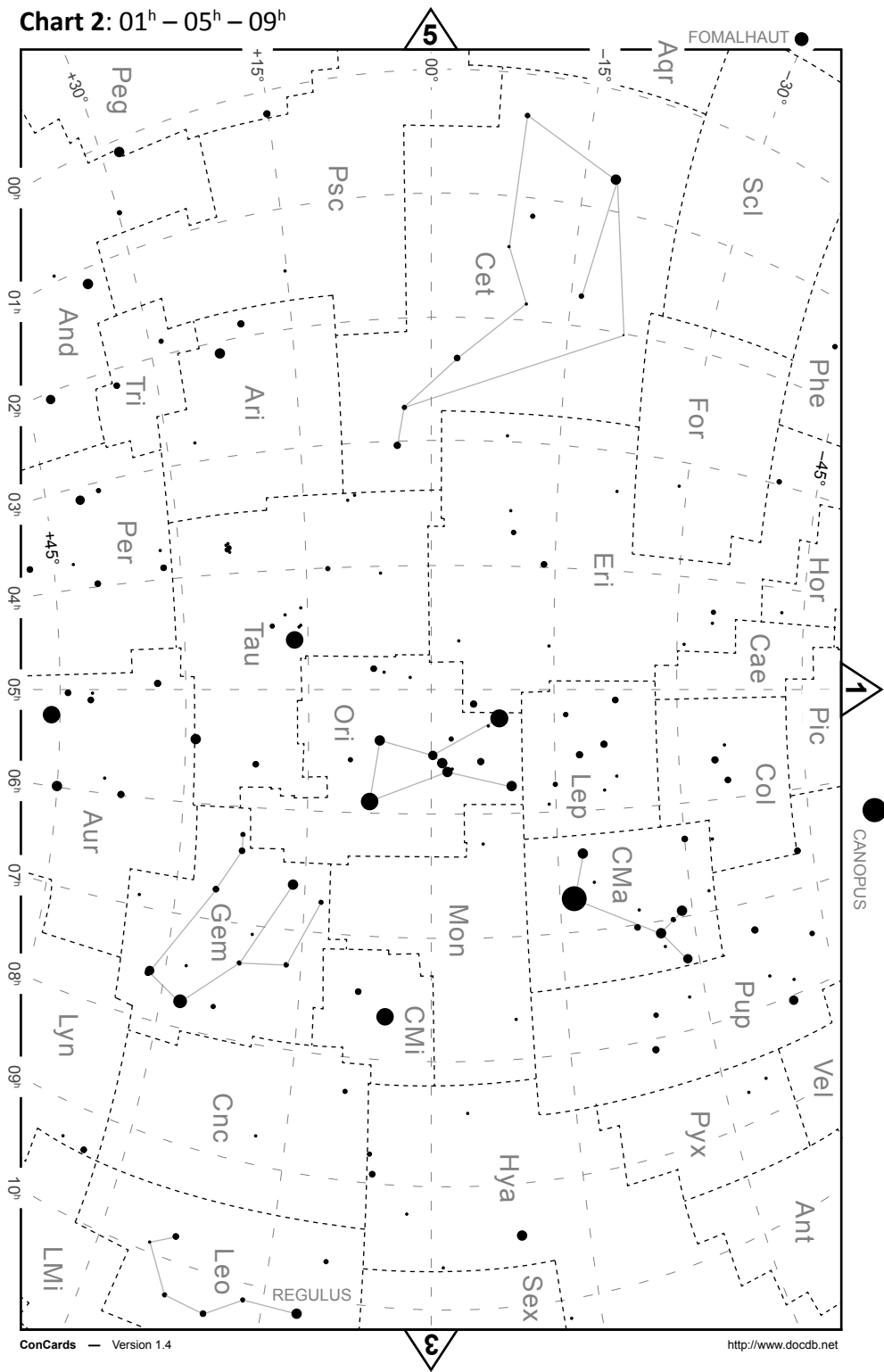


Chart 3: 07<sup>h</sup> – 11<sup>h</sup> – 15<sup>h</sup>

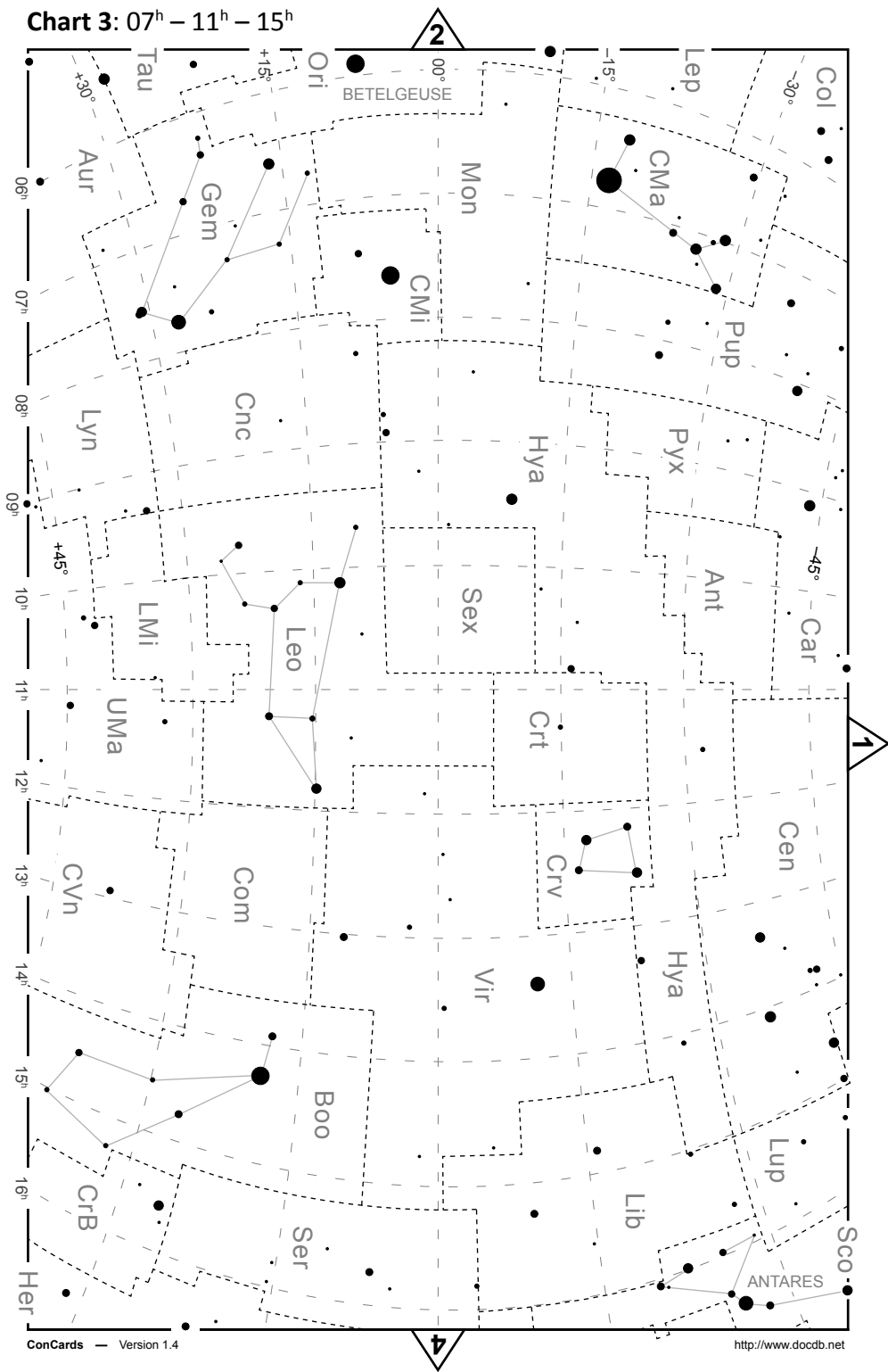


Chart 4: 13<sup>h</sup> – 17<sup>h</sup> – 21<sup>h</sup>

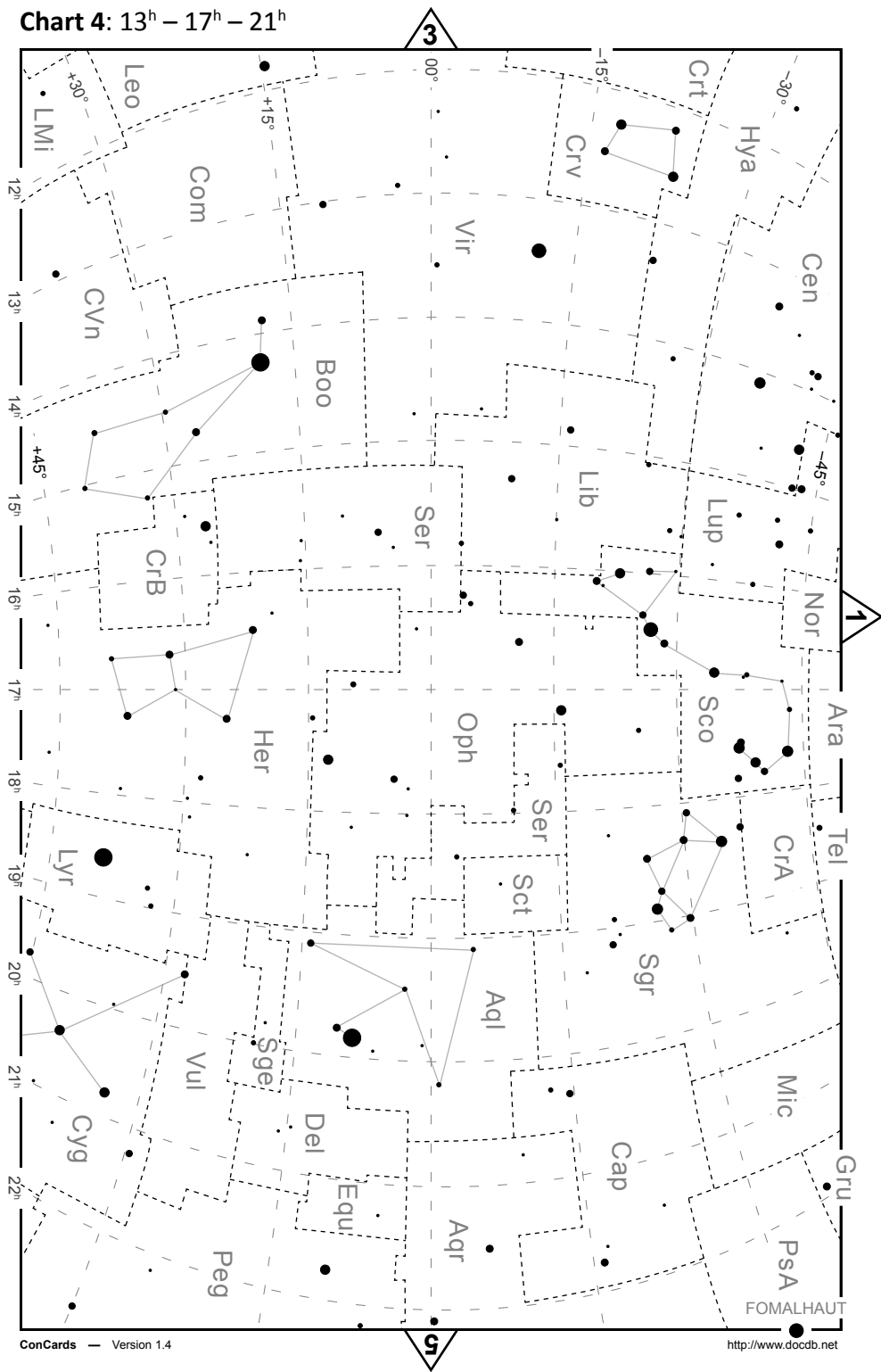
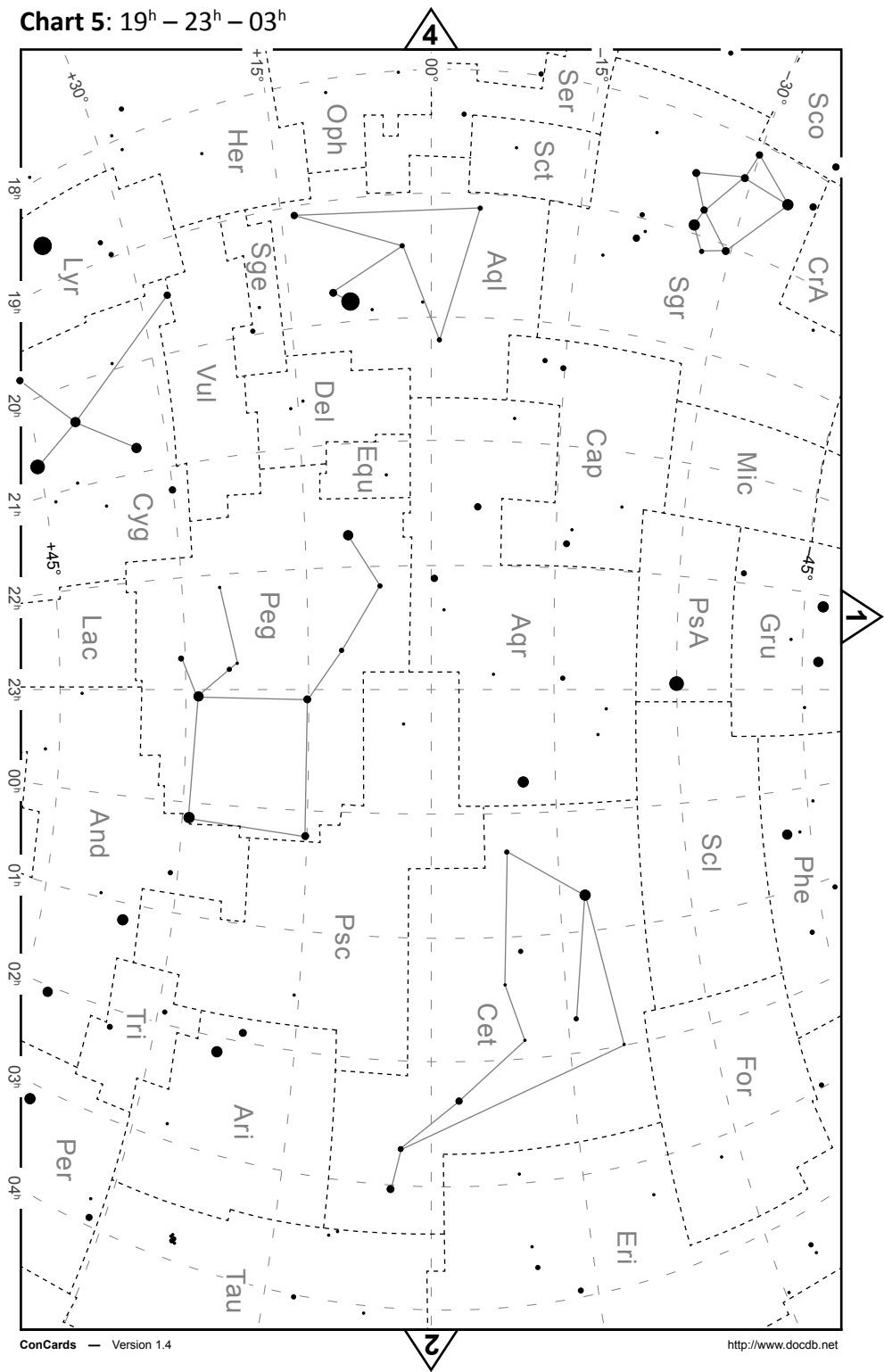




Chart 5: 19<sup>h</sup> – 23<sup>h</sup> – 03<sup>h</sup>



# Andromeda

The Chained Maiden

And, Andromedae

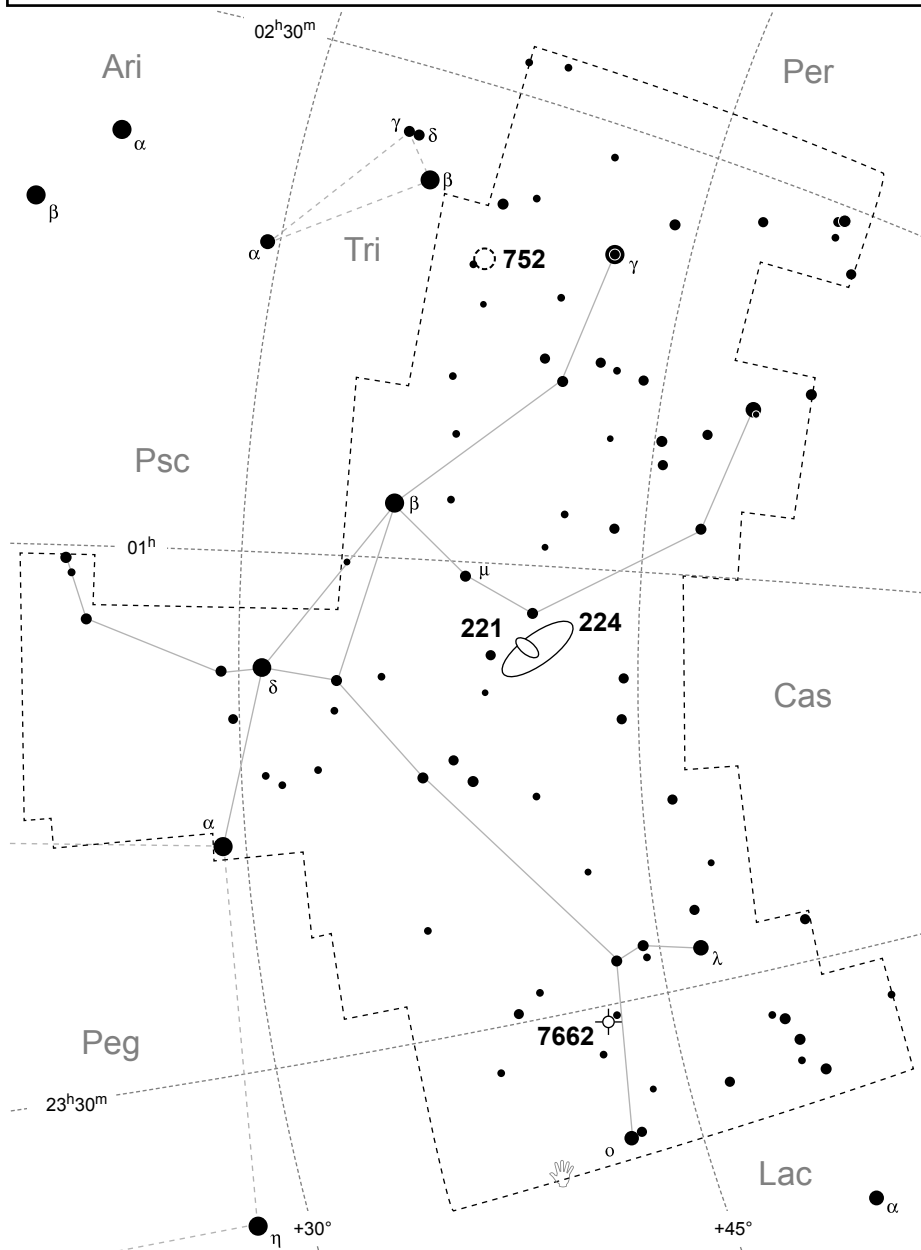
00<sup>h</sup>40<sup>m</sup>, +39°

Visibility: July to early January

Culmination: Nov 27 (21:00), Oct 13 (00:00), Aug 28 (03:00)

N★ 152

Origin: Ancient Greek (Ptolemy)



NGC 7662, C22	23 <sup>h</sup> 25 <sup>m</sup> 54 <sup>s</sup> +42°32'06"	NGC 221, M32	00 <sup>h</sup> 42 <sup>m</sup> 42 <sup>s</sup> +40°51'57"
NGC 224, M31	00 <sup>h</sup> 42 <sup>m</sup> 44 <sup>s</sup> +41°16'09"	NGC 752, C28	01 <sup>h</sup> 57 <sup>m</sup> 35 <sup>s</sup> +37°50'

# Antlia

The Air Pump

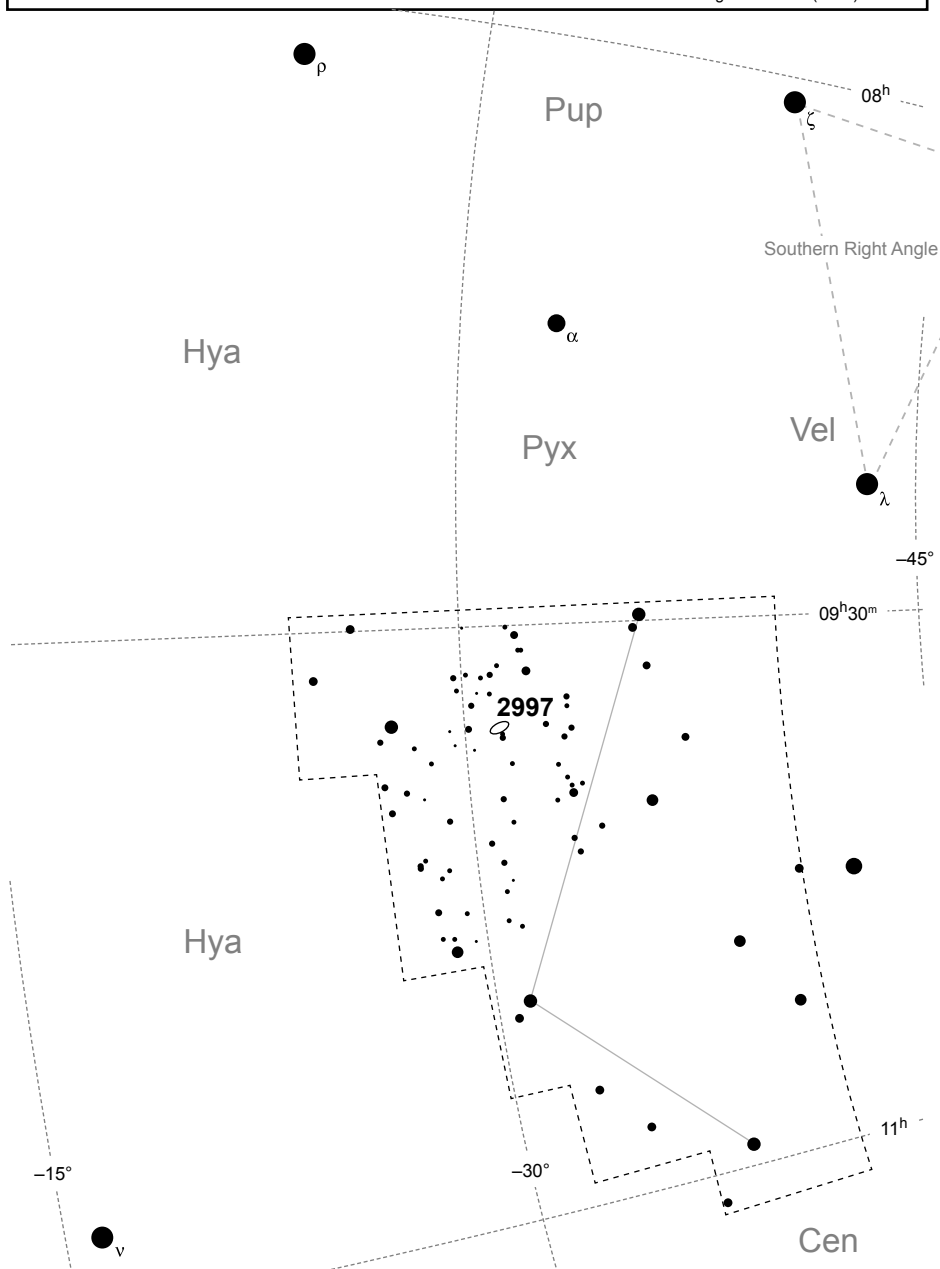
Ant, Antliae  
10<sup>h</sup>05<sup>m</sup>, -34°



Visibility: January through mid-July  
Culmination: Apr 19 (21:00), Mar 05 (00:00), Jan 18 (03:00)



N★ 42  
Origin: La Caille (1752)



○ NGC 2997, B 41b

09<sup>h</sup>45<sup>m</sup>39<sup>s</sup> -31°11'25"

# Apus

The Bird of Paradise

Aps, Apodis  
16<sup>h</sup>45<sup>m</sup>, -78°

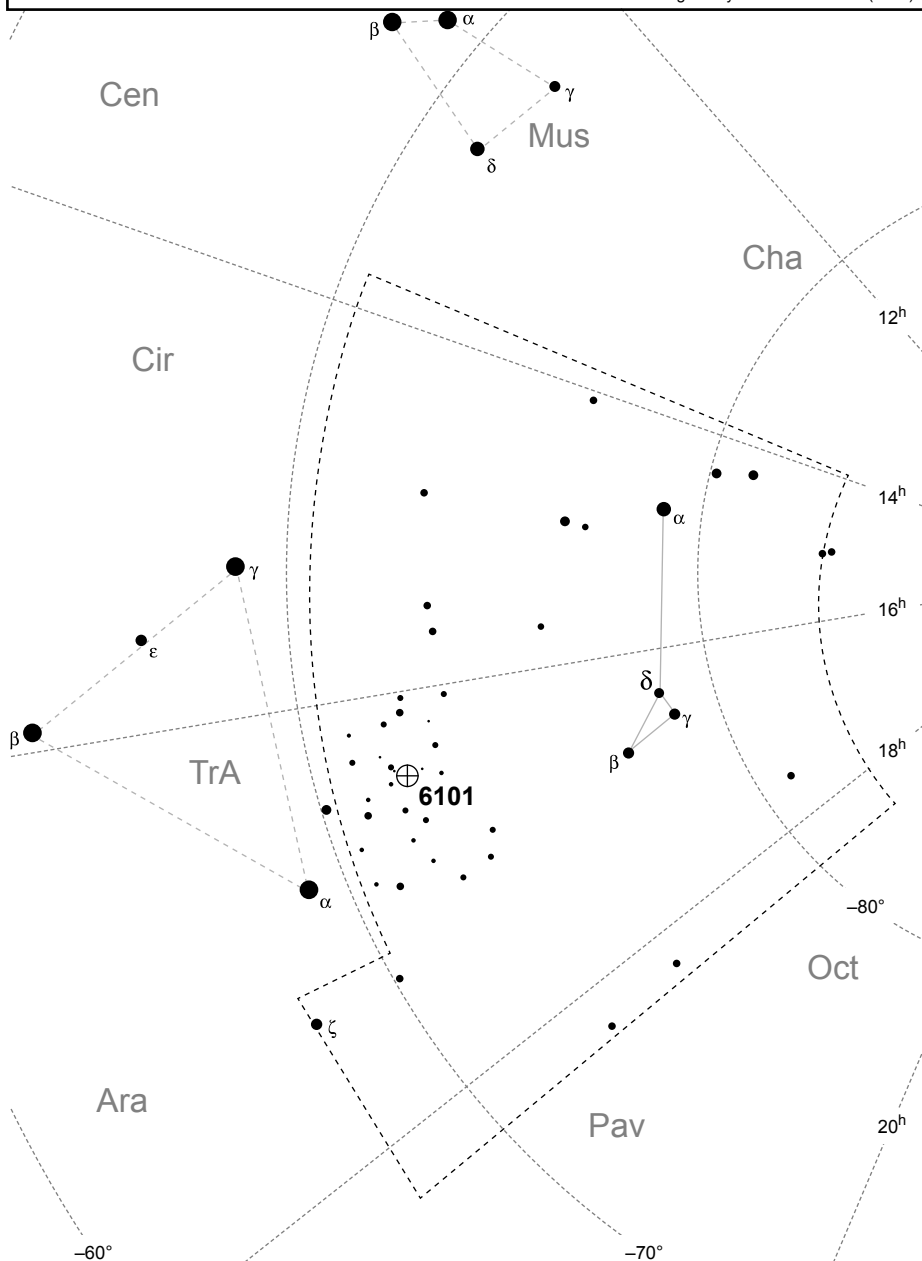


Visibility: Year-round; best from February to August  
Culmination: Jul 29 (21:00), Jun 14 (00:00), Apr 29 (03:00)



N★ 39

Origin: Keyser & de Houtman (1597)



\*★ delta Apodis, HD145366

16<sup>h</sup>20<sup>m</sup>27<sup>s</sup> -78°40'02"

⊕ NGC 6101, C107, B 74

16<sup>h</sup>25<sup>m</sup>48<sup>s</sup> -72°12'06"

# Aquarius

The Water Bearer

Aqr, Aquarii  
22<sup>h</sup>40<sup>m</sup>, -11°

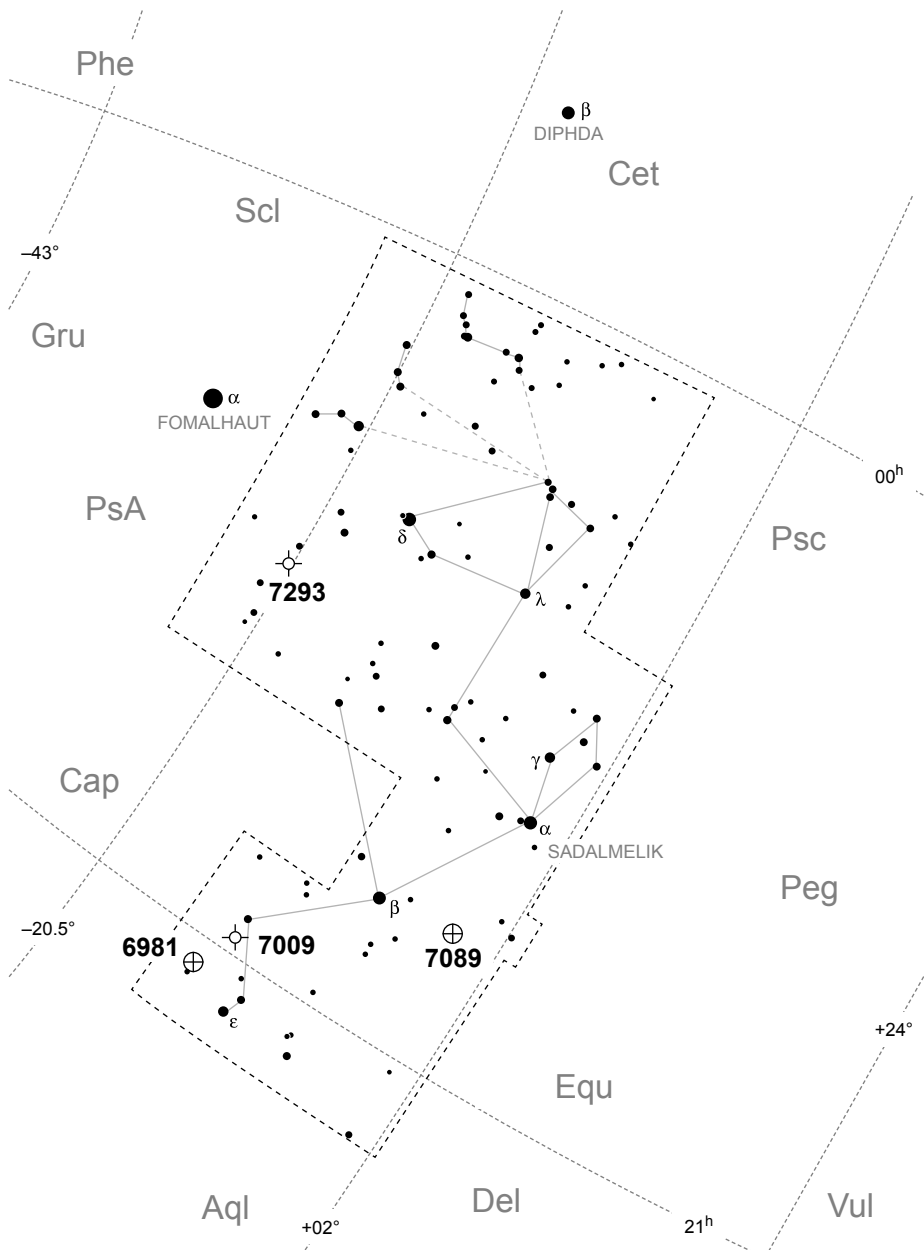


Visibility: May to late Jan (best: late Jun to late Nov)  
Culmination: Oct 27 (21:00), Sep 12 (00:00), Jul 28 (03:00)



N★ 172

Origin: Ancient Greek (Ptolemy)



⊕ NGC6981, M72, Ben125	20 <sup>h</sup> 53 <sup>m</sup> 28 <sup>s</sup> -12°32'13"	☊ NGC7293, Helix,C63, A 100	22 <sup>h</sup> 29 <sup>m</sup> 39 <sup>s</sup> -20°50'14"
♄ NGC7009, Saturn, C55	21 <sup>h</sup> 04 <sup>m</sup> 11 <sup>s</sup> -11°21'48"	⊕ NGC 7089, M 2, A 98	01 <sup>h</sup> 33 <sup>m</sup> 27 <sup>s</sup> -00°49'24"

# Aquila

The Eagle

Aql, Aquilae  
19°40<sup>m</sup>, +03°

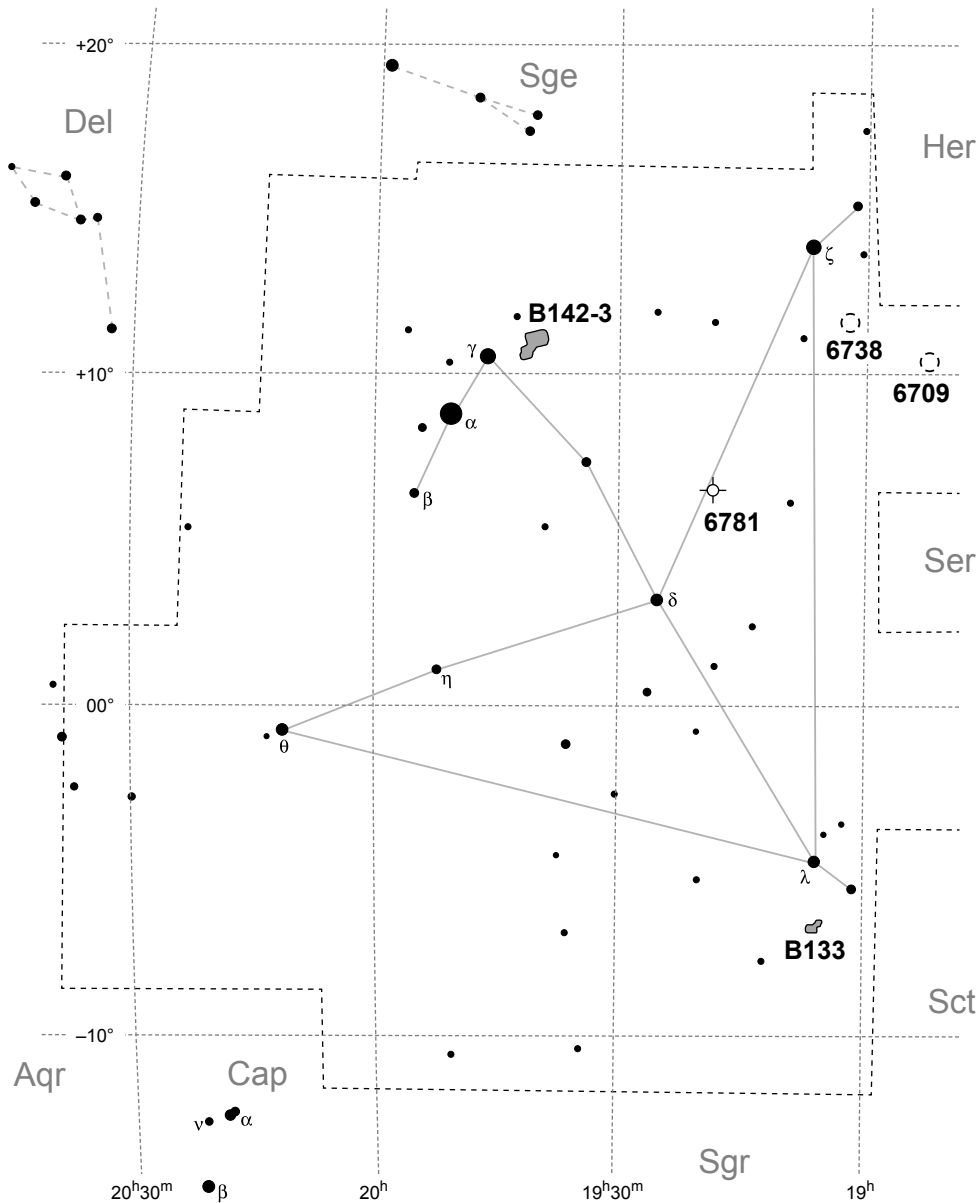


Visibility: Late Mar to Nov (mid-May to Sep)  
Culmination: Sep 11 (21:00), Jul 29 (00:00), Jun 13 (03:00)



N★ 124

Origin: Ancient Greek (Ptolemy)



NGC 6709	18°51 <sup>m</sup> 18 <sup>s</sup> +10°19'	NGC 6781	19°18 <sup>m</sup> 28 <sup>s</sup> +06°32'19"
NGC 6738	19°01 <sup>m</sup> 18 <sup>s</sup> +11°37'	Barnard 142	19°39 <sup>m</sup> 41 <sup>s</sup> +10°31'
Barnard 133	19°06 <sup>m</sup> 10 <sup>s</sup> -06°54'	Barnard 143	19°40 <sup>m</sup> 42 <sup>s</sup> +10°57'

# Ara

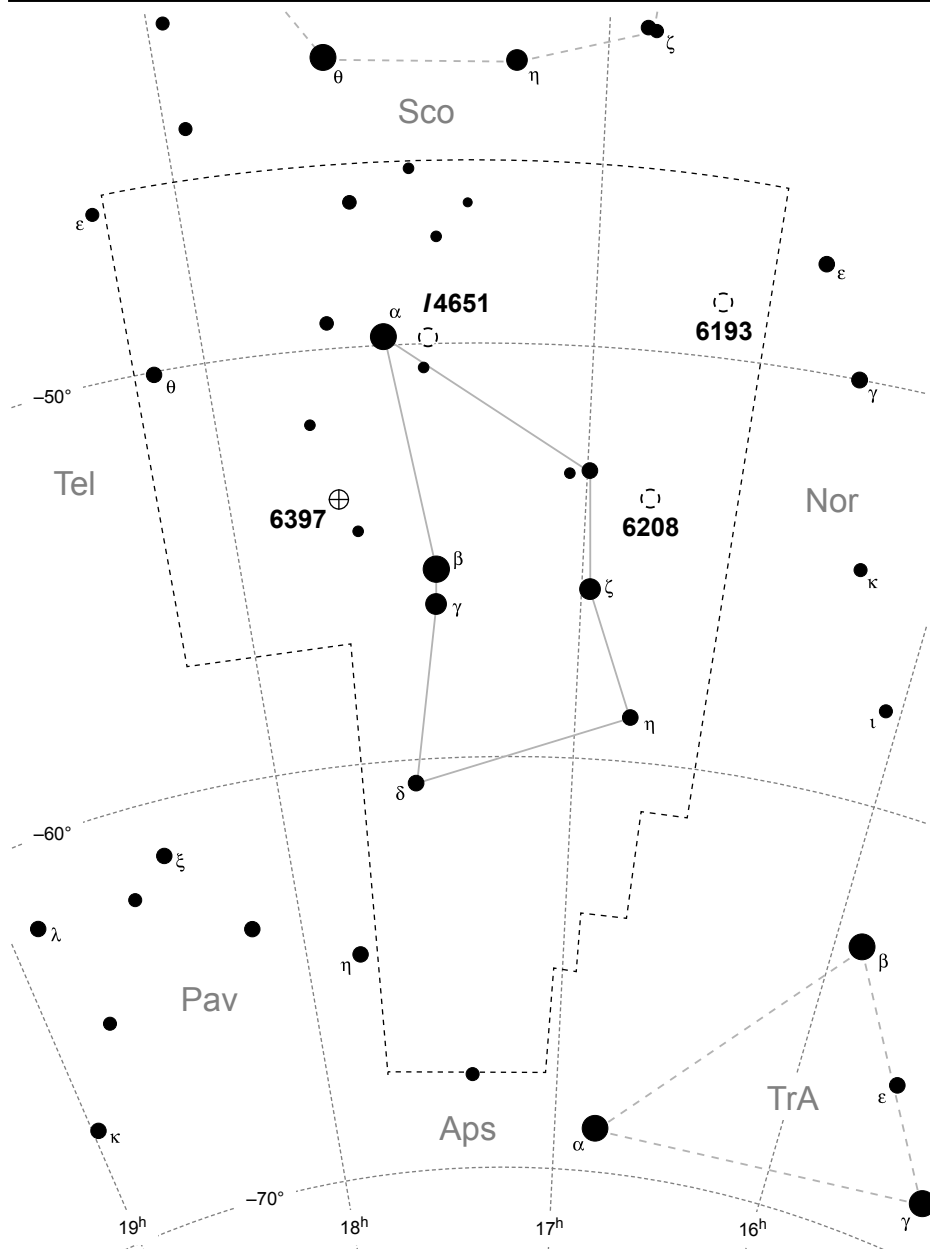
The Altar

Ara, Arae  
17<sup>h</sup>15<sup>m</sup>, -56°



Visibility: Mid-Mar to late Sep (Apr to mid-Sep)  
Culmination: Aug 05 (21:00), Jun 21 (00:00), May 06 (03:00)

N★ 71  
Origin: Ancient Greek (Ptolemy)



NGC 6193, C 82, A 70	16 <sup>h</sup> 41 <sup>m</sup> 24 <sup>s</sup> -48°46'09"	IC 4651	17 <sup>h</sup> 24 <sup>m</sup> 52 <sup>s</sup> -49°56'36"
NGC 6208	16 <sup>h</sup> 49 <sup>m</sup> 28 <sup>s</sup> -53°43'42"	NGC 6397, B 98, C 86, A 79	17 <sup>h</sup> 40 <sup>m</sup> 41 <sup>s</sup> -53°40'25"

# Aries

The Ram

Ari, Arietis  
02<sup>h</sup>40<sup>m</sup>, +22°

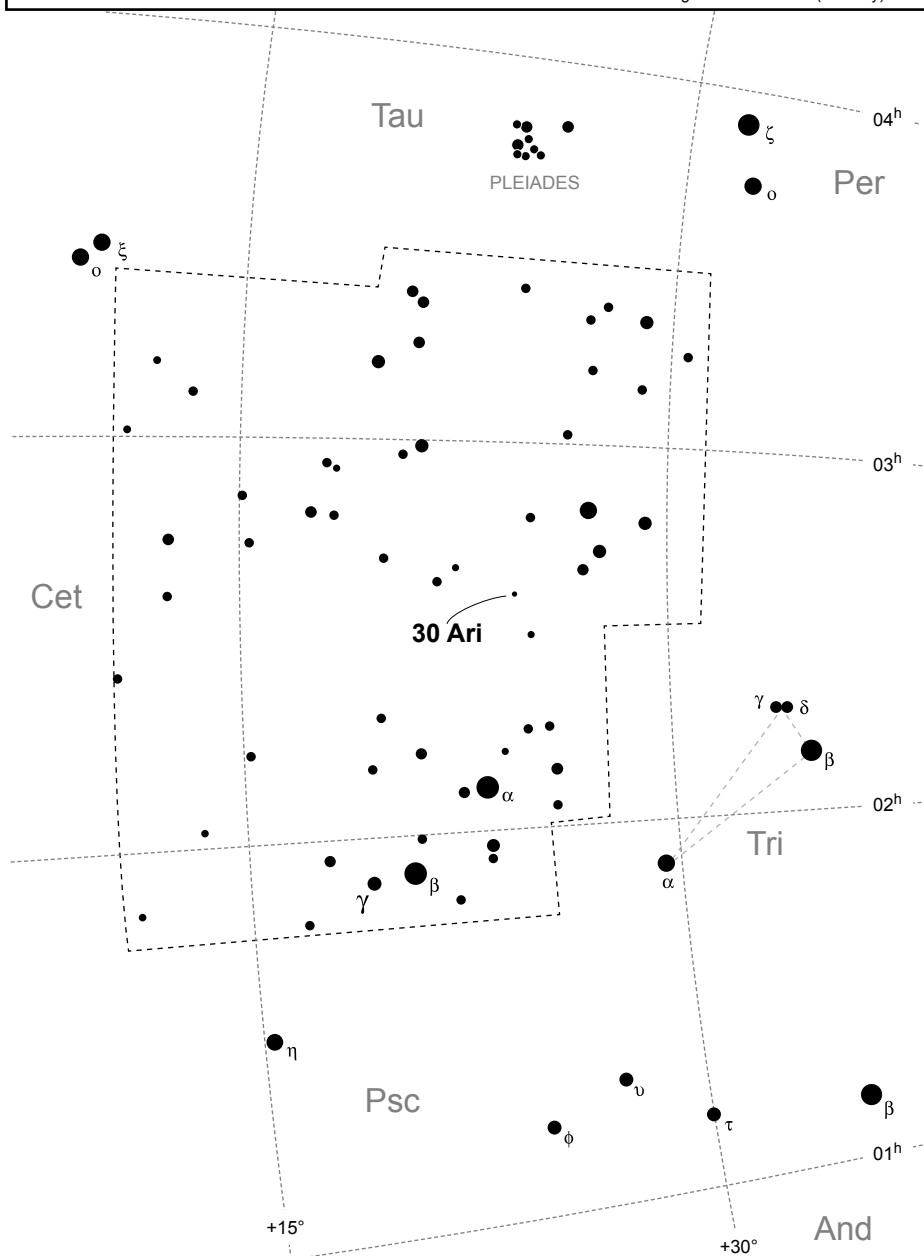


Visibility: Late Jul to early Mar (late-Aug to mid-Jan)  
Culmination: Dec 27 (21:00), Nov 12 (00:00), Sep 28 (03:00)



N★ 86

Origin: Ancient Greek (Ptolemy)



*★ gamma Ari, HD 11502	01 <sup>h</sup> 53 <sup>m</sup> 32 <sup>s</sup> +19°17'45"	*★ 30 Ari, HD 16232	02 <sup>h</sup> 37 <sup>m</sup> 01 <sup>s</sup> +24°38'51"



# Auriga

The Charioteer

Aur, Aurigae  
05<sup>h</sup>55<sup>m</sup>, +42°

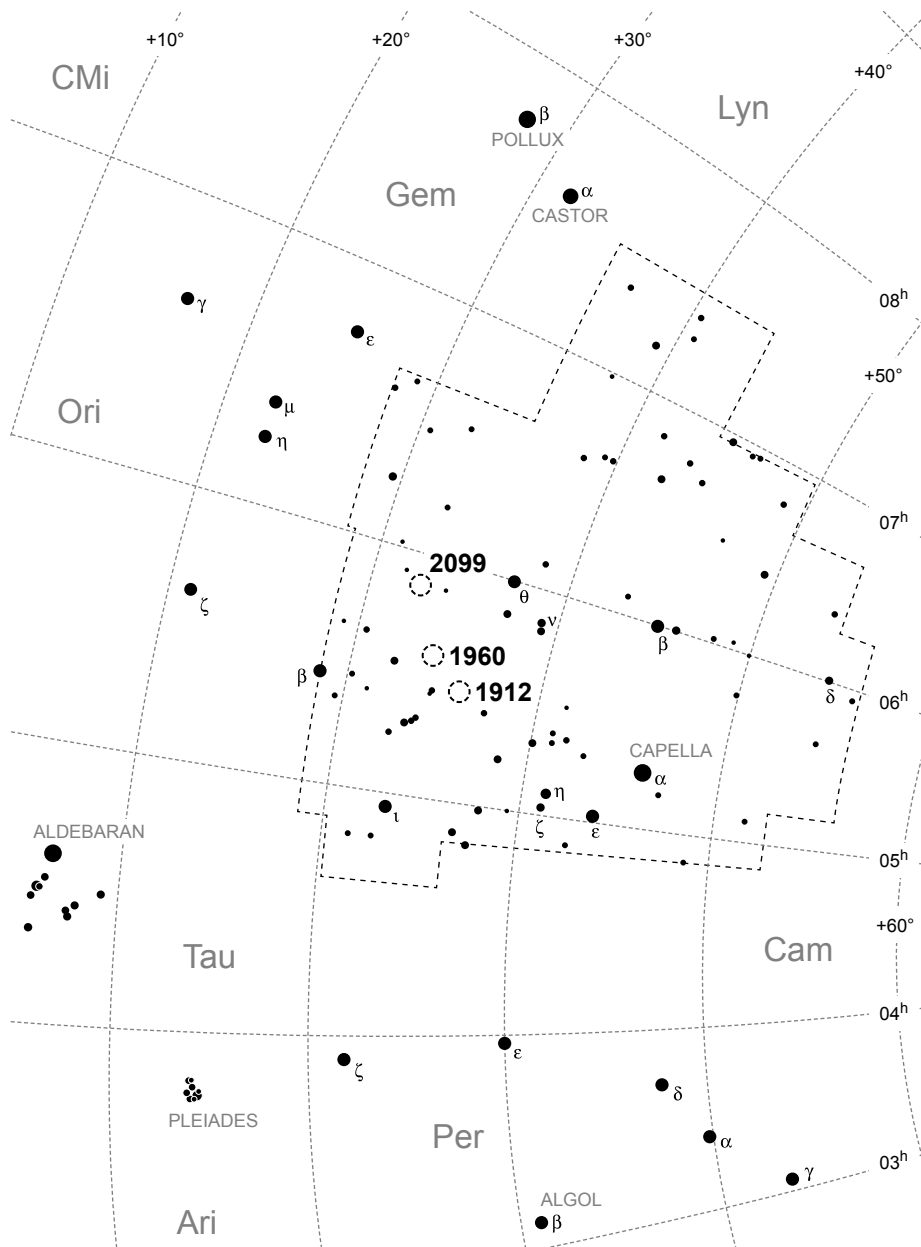


Visibility: Late Sep through early March

Culmination: Feb 14 (21:00), Jan 01 (00:00), Nov 16 (03:00)

N★ 152

Origin: Ancient Greek (Ptolemy)



○ NGC 1912, M 38

05<sup>h</sup>28<sup>m</sup>43<sup>s</sup> +35°51'18"

○ NGC 2099, M 37

05<sup>h</sup>52<sup>m</sup>19<sup>s</sup> +32°33'12"

○ NGC 1960, M 36

05<sup>h</sup>36<sup>m</sup>12<sup>s</sup> +34°08'24"

## The Herdsman

N★ 144

Origin: Ancient Greek (Ptolemy)



⊕ NGC 5466	19°01'13.5"–37°00'55"	✳ mu Boo, HD 137391	19°01'13.8"–36°53'31"
✳ epsilon Boo, HD 129988	18°08'02"–43°42'20"		

# Caelum

The Engraving Tool / Chisel

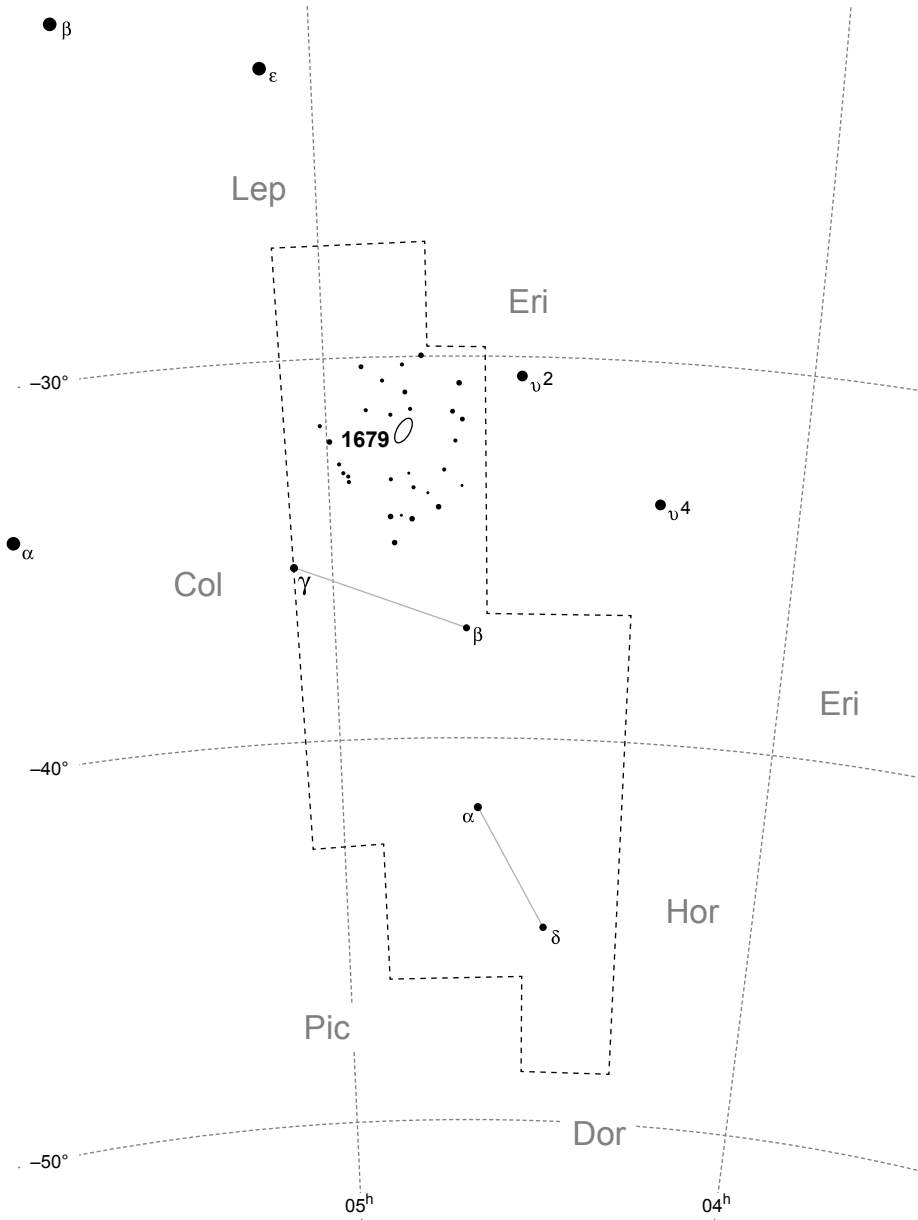
Cae, Caeli  
04<sup>h</sup>45<sup>m</sup>, -38°




Visibility: Mid-July to mid-May (best: Nov to Feb)  
Culmination: Jan 27 (21:00), Dec 13 (00:00), Oct 29 (03:00)



N★ 20  
Origin: La Caille (1752)



 NGC 1679	04 <sup>h</sup> 49 <sup>m</sup> 56 <sup>s</sup> -31°58'02"	★* gamma Cae, HD 32846	05 <sup>h</sup> 04 <sup>m</sup> 24 <sup>s</sup> -35°29'00"

# Cancer

The Crab

Cnc, Cancr  
08<sup>h</sup>40<sup>m</sup>, +22°

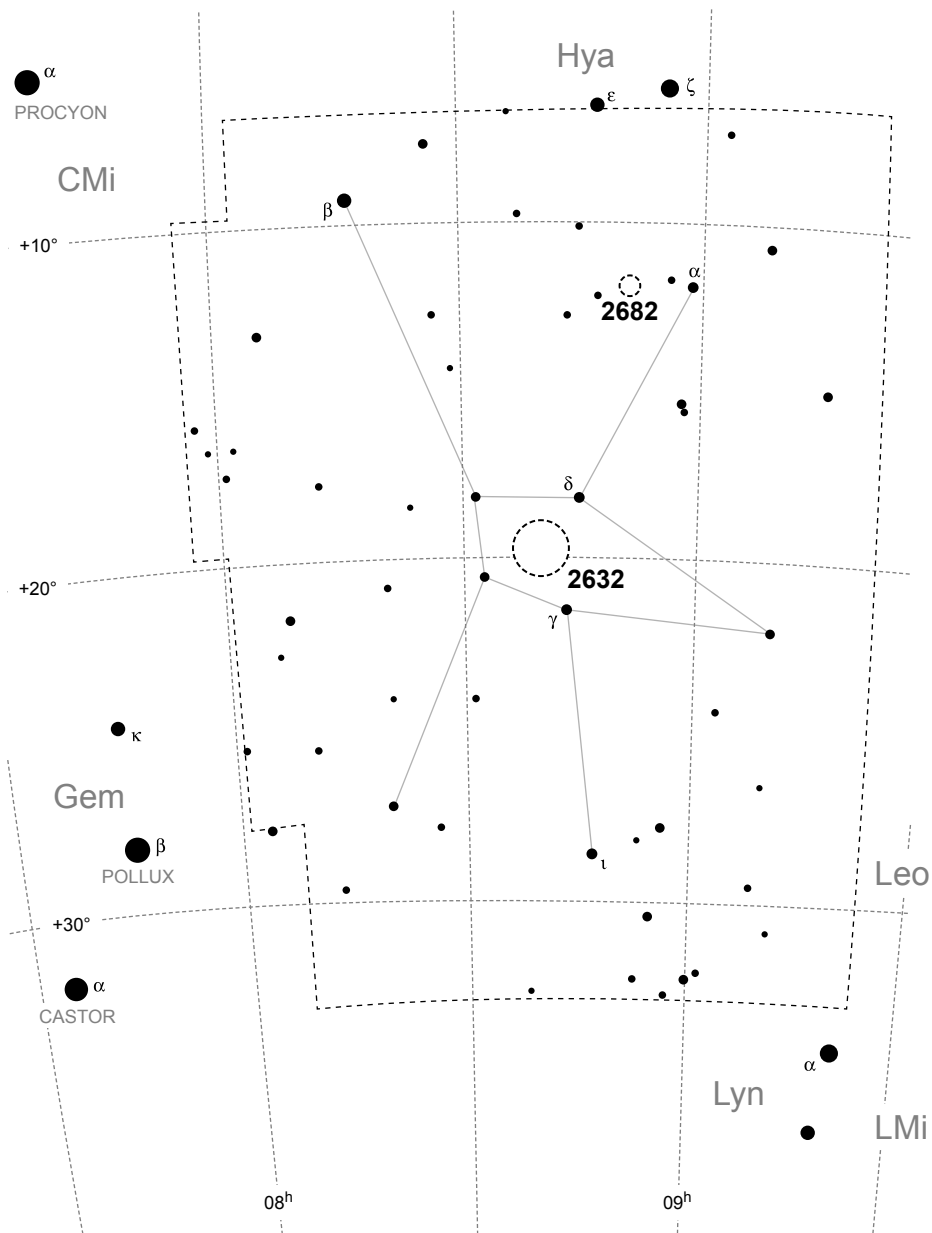


Visibility: Mid-October through May  
Culmination: Mar 28 (21:00), Feb 11 (00:00), Dec 27 (03:00)



N★ 104

Origin: Ancient Greek (Ptolemy)



○ NGC 2632, Beehive, M 44	08 <sup>h</sup> 40 <sup>m</sup> 24 <sup>s</sup> +19°41'00"	○ NGC 2682, M 67	08 <sup>h</sup> 51 <sup>m</sup> 18 <sup>s</sup> +11°48'00"

# Canes Venatici

The Hunting Dogs (Canum Venaticorum)

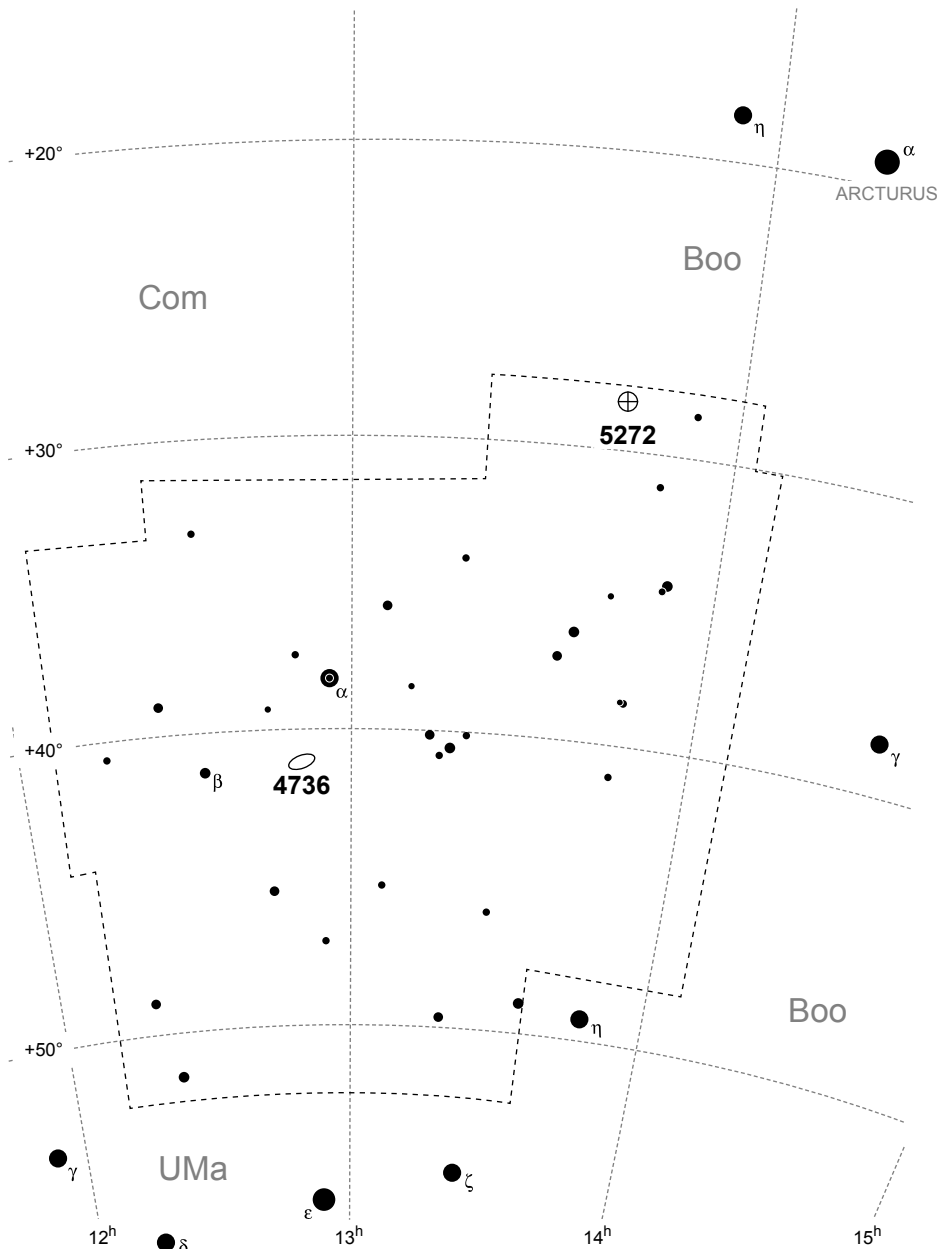
CVn  
13<sup>h</sup>00<sup>m</sup>, +42°





Visibility: Late January through mid-July  
Culmination: Jun 02 (21:00), Apr 18 (00:00), Mar 03 (03:00)



N★ 59  
Origin: Hevelius (1690)



 NGC 4736, M 94	12 <sup>h</sup> 50 <sup>m</sup> 53 <sup>s</sup> +41°07'09"	 NGC 5272, M 3	13 <sup>h</sup> 42 <sup>m</sup> 11 <sup>s</sup> +28°22'32"

# Canis Major

The Big Dog

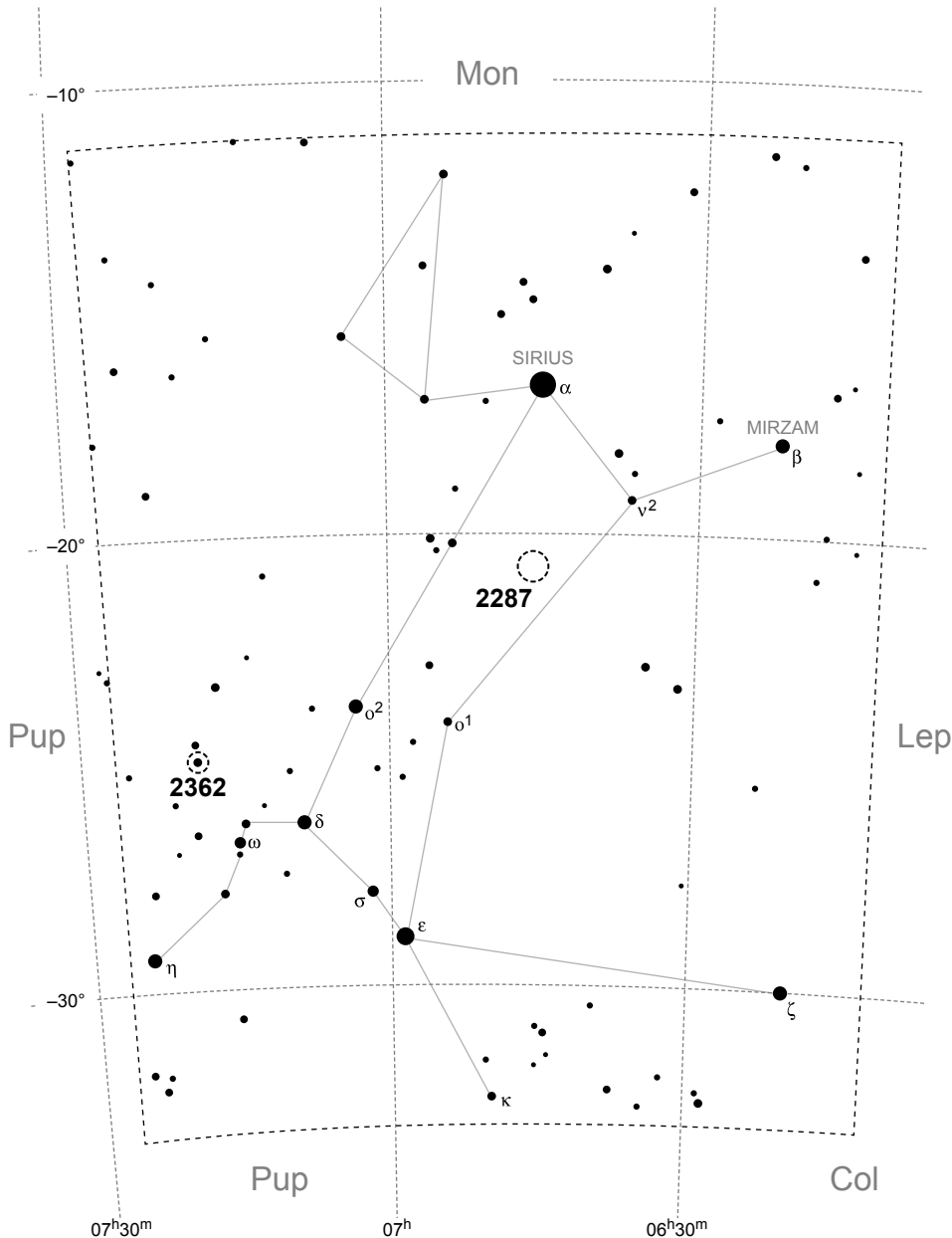
CMa, Canis Majoris  
06<sup>h</sup>50<sup>m</sup>, -23°



Visibility: Late Aug through May (best: Feb to Mar)  
Culmination: Feb 28 (21:00), Jan 14 (00:00), Nov 30 (03:00)



N★ 147  
Origin: Ancient Greek (Ptolemy)



NGC 2287, M 41, A 21	06 <sup>h</sup> 46 <sup>m</sup> 00 <sup>s</sup> -20°46'	NGC 2362, C 64, A 22	07 <sup>h</sup> 18 <sup>m</sup> 36 <sup>s</sup> -24°59'

# Canis Minor

The Little Dog

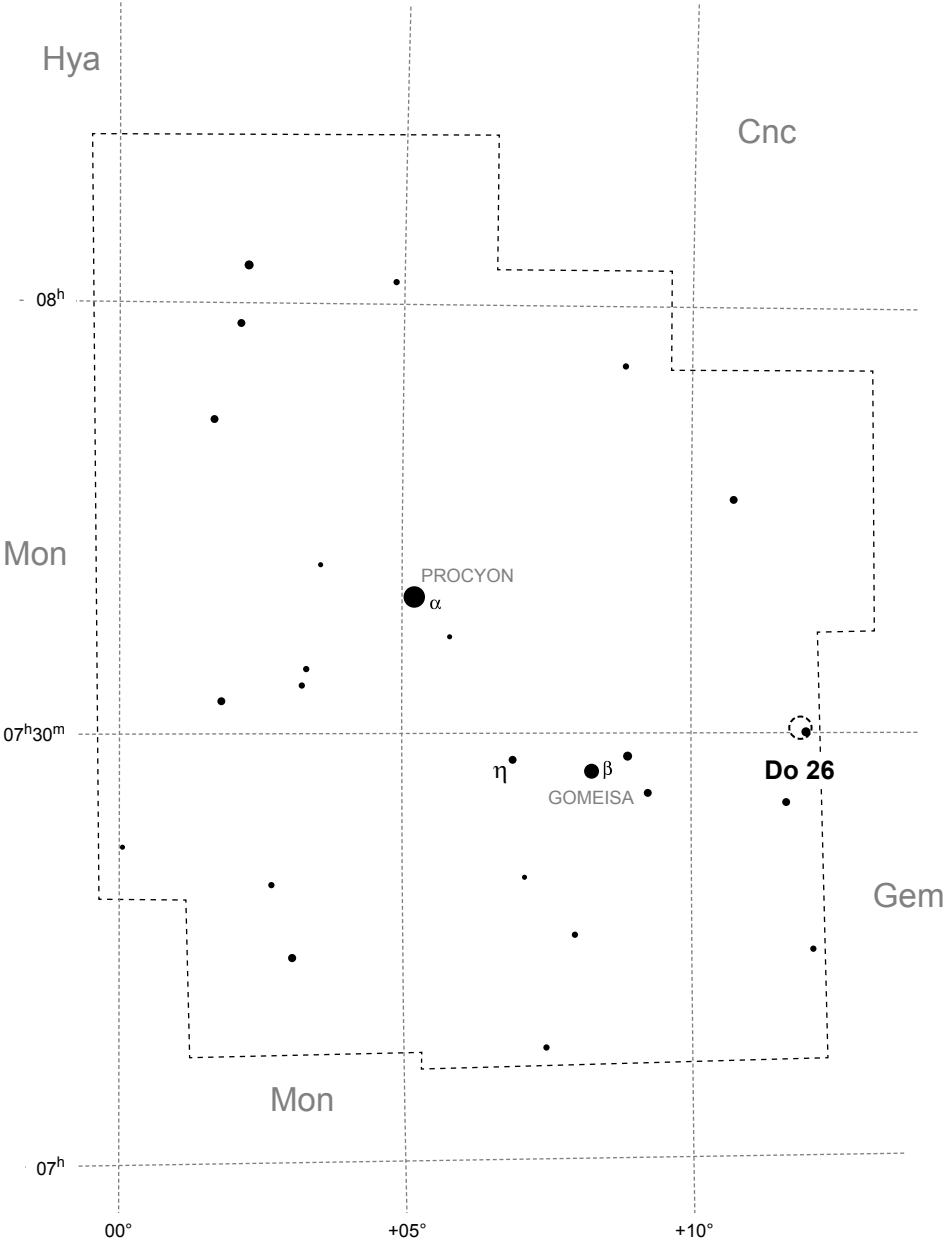
CMi, Canis Minoris  
07<sup>h</sup>40<sup>m</sup>, +07°



Visibility: Late-Sep to May (best: Nov to late-April)  
Culmination: Mar 12 (21:00), Jan 26 (00:00), Dec 11 (03:00)



N ★ 47  
Origin: Ancient Greek (Ptolemy)



★ eta CMI, HD 58923	07 <sup>h</sup> 28 <sup>m</sup> 02 <sup>s</sup> +11°54'00"	☉ Dolidze 26	07 <sup>h</sup> 30 <sup>m</sup> 06 <sup>s</sup> +11°54'00"

# Capricornus

The Sea Goat

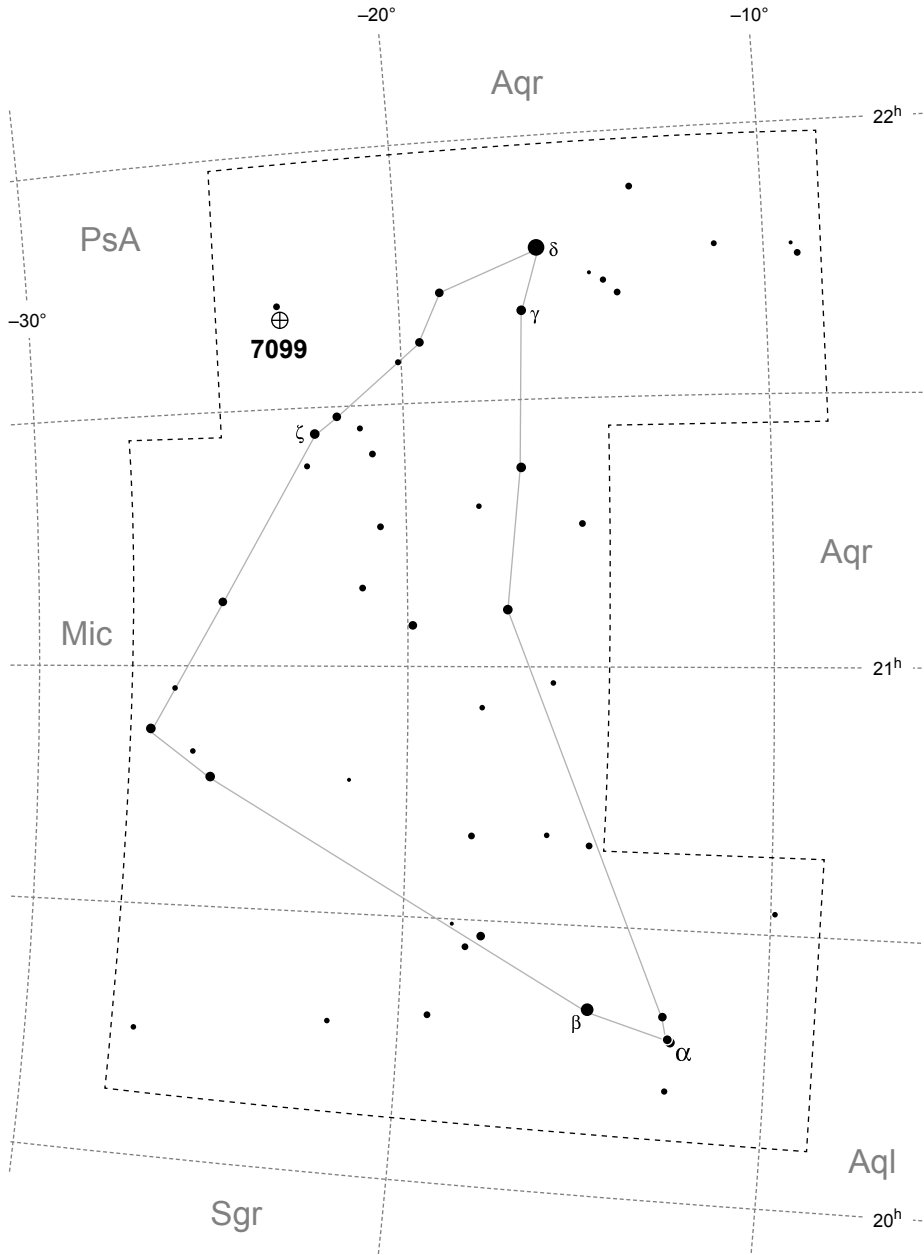
Cap, Capricorni  
20<sup>h</sup>55<sup>m</sup>, -20°



Visibility: Late Mar to late Dec (best: Jun to mid-Oct)  
Culmination: Oct 01 (21:00), Aug 17 (00:00), Jul 02 (03:00)



N★ 81  
Origin: Ancient Greek (Ptolemy)



★ alpha Cap, HD 192876	20 <sup>h</sup> 17 <sup>m</sup> 39 <sup>s</sup> -12°30'30"	⊕ NGC 7099, M 30, A 99	21 <sup>h</sup> 40 <sup>m</sup> 22 <sup>s</sup> +23°10'45"



# Carina

The Keel of the ship Argo

Car, Carinae  
08<sup>h</sup>55<sup>m</sup>, -61°

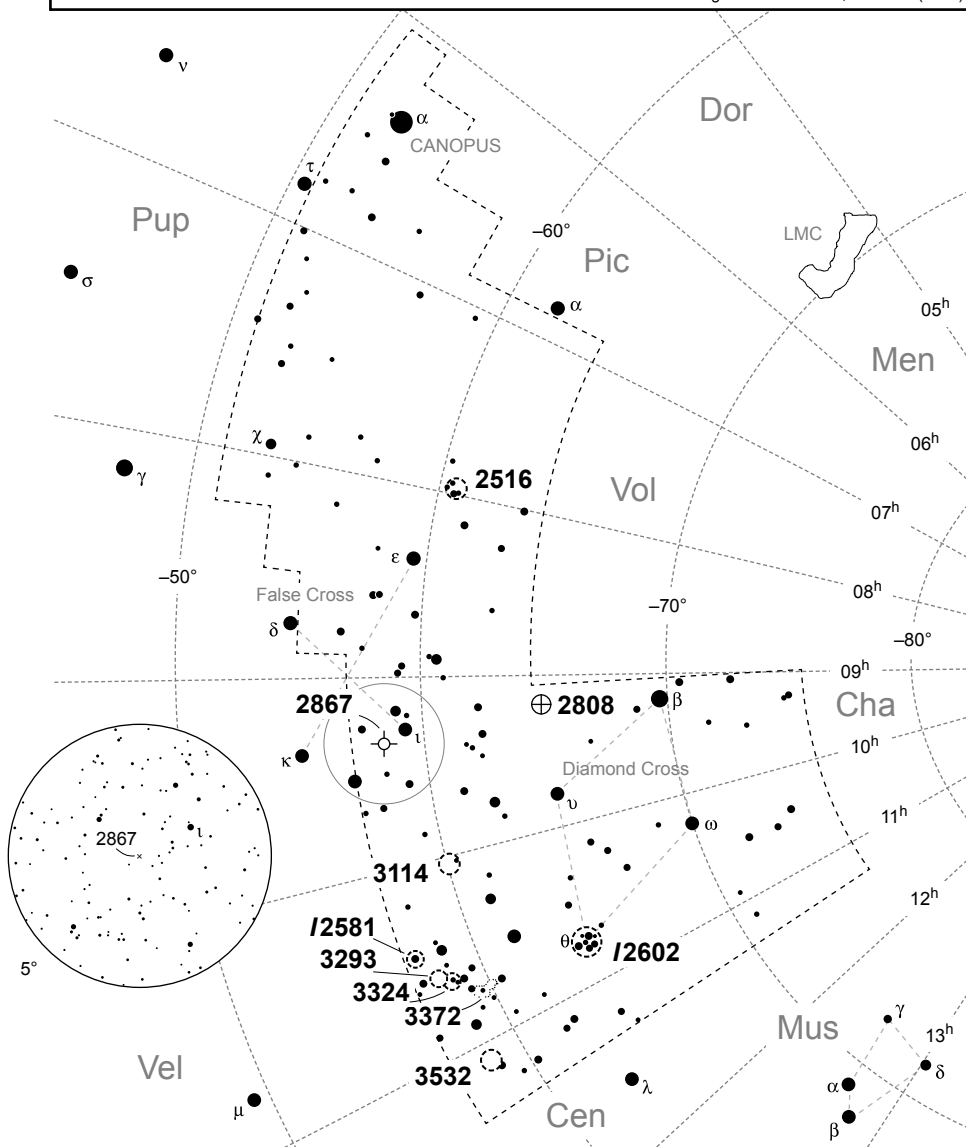


Visibility: Year-round; best from late Nov to early May  
Culmination: Apr 01 (21:00), Feb 15 (00:00), Dec 31 (03:00)



N★ 225

Origin: Ancient Greek; La Caille (1752)



NGC 2516, C 96, A 28	07 <sup>h</sup> 58 <sup>m</sup> 06 <sup>s</sup> -60°45'00"	NGC 3293, A 41	10 <sup>h</sup> 35 <sup>m</sup> 49 <sup>s</sup> -58°13'00"
NGC 2808, B 41, A 32	09 <sup>h</sup> 12 <sup>m</sup> 03 <sup>s</sup> -64°51'46"	NGC 3324, A 42	10 <sup>h</sup> 37 <sup>m</sup> 19 <sup>s</sup> -58°39'36"
NGC 2867, C 90	09 <sup>h</sup> 21 <sup>m</sup> 25 <sup>s</sup> -58°18'41"	IC 2602, C 102, A 43	10 <sup>h</sup> 43 <sup>m</sup> 12 <sup>s</sup> -64°24'00"
NGC 3114, A 35	10 <sup>h</sup> 02 <sup>m</sup> 00 <sup>s</sup> -60°06'00"	NGC 3372, eta Carneb, A 44	10 <sup>h</sup> 44 <sup>m</sup> 19 <sup>s</sup> -59°53'21"
IC 2581, A 40	10 <sup>h</sup> 27 <sup>m</sup> 30 <sup>s</sup> -57°38'00"	NGC 3532, C 91, A 45	11 <sup>h</sup> 05 <sup>m</sup> 33 <sup>s</sup> -58°43'48"

# Centaurus

The Centaur

Cen, Centauri  
13<sup>h</sup>00<sup>m</sup>, -44°

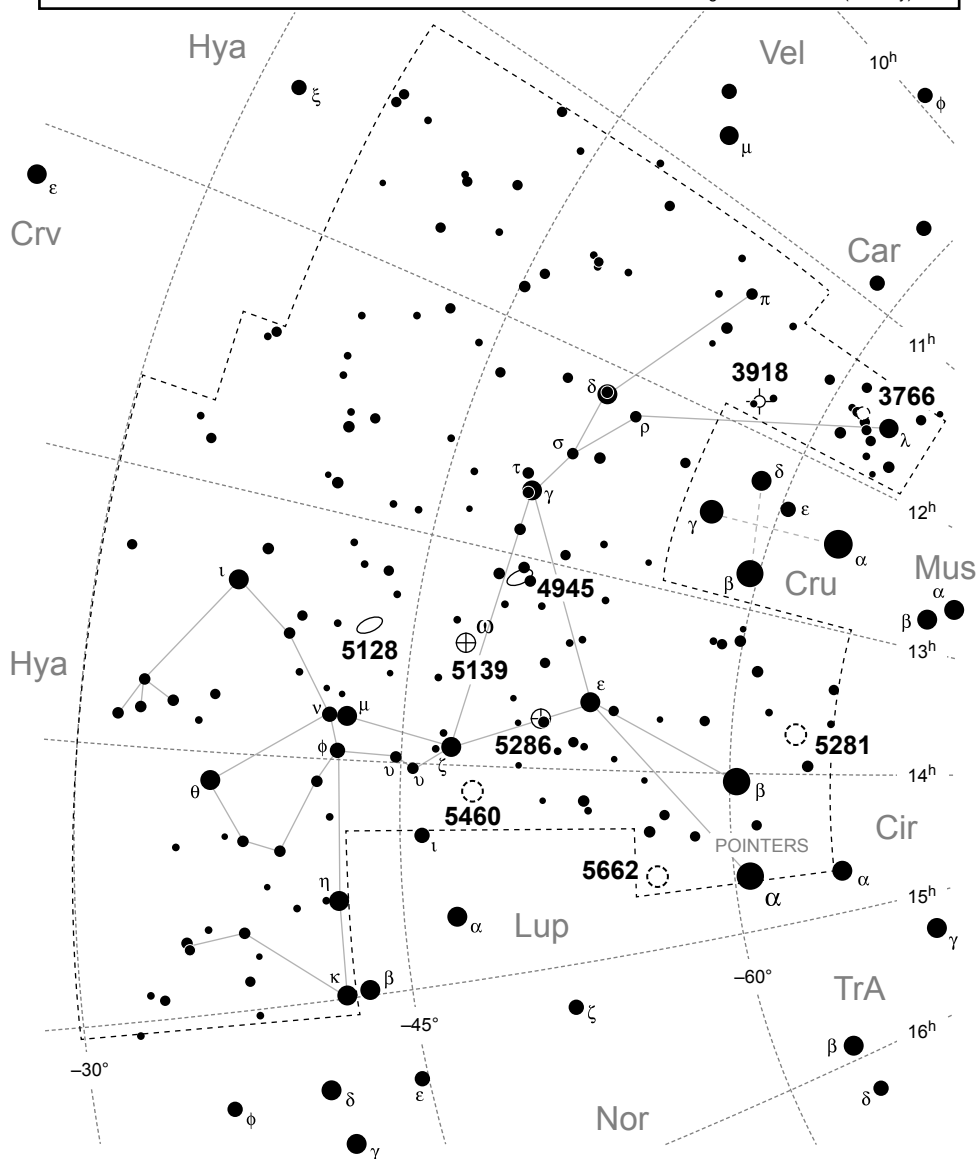


Visibility: Year-round; best early February to mid-July  
Culmination: Jun 01 (21:00), Apr 17 (00:00), Mar 03 (03:00)



N★ 281

Origin: Ancient Greek (Ptolemy)



○ NGC 3766, C 97, A 46	11 <sup>h</sup> 36 <sup>m</sup> 13 <sup>s</sup> - 61°36'55"	⊕ NGC 5286, B 64, C 84	13 <sup>h</sup> 46 <sup>m</sup> 27 <sup>s</sup> - 51°22'25"
⊕ NGC 3918, A 47	11 <sup>h</sup> 50 <sup>m</sup> 18 <sup>s</sup> - 57°10'57"	○ NGC 5281, A 59	13 <sup>h</sup> 46 <sup>m</sup> 30 <sup>s</sup> - 62°54'54"
○ NGC 4945, B 57, C 83, A 54	13 <sup>h</sup> 05 <sup>m</sup> 26 <sup>s</sup> - 49°28'15"	○ NGC 5460, A 60	14 <sup>h</sup> 07 <sup>m</sup> 24 <sup>s</sup> - 48°20'
○ NGC 5128, B 60, C 77, A 55	13 <sup>h</sup> 25 <sup>m</sup> 28 <sup>s</sup> - 43°01'09"	★ alpha & Proxima Centauri	
⊕ NGC 5139, omega Cen	13 <sup>h</sup> 26 <sup>m</sup> 46 <sup>s</sup> - 47°28'37"	○ NGC 5662, A 61	14 <sup>h</sup> 35 <sup>m</sup> 36 <sup>s</sup> - 56°37'

# Cetus

The Sea Monster

Cet, Ceti  
01<sup>h</sup>45<sup>m</sup>, -07°

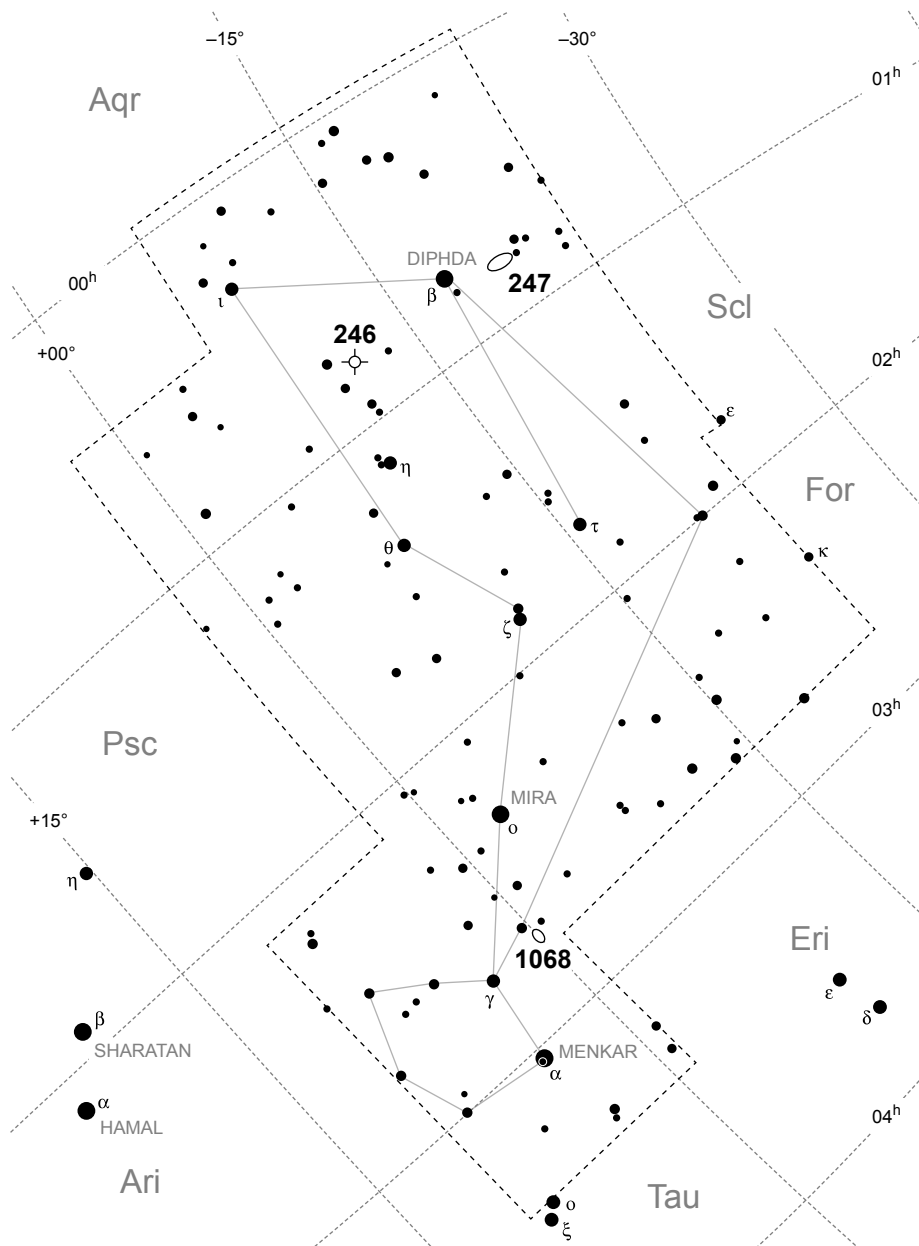





Visibility: Late May to Feb (best: early Aug to late Dec)  
Culmination: Dec 12 (21:00), Oct 29 (00:00), Sep 13 (03:00)



N★ 189

Origin: Ancient Greek (Ptolemy)



 NGC 246, C 56, A 4	00 <sup>h</sup> 47 <sup>m</sup> 03 <sup>s</sup> -11°52'19"	 NGC 1068, M 77, B 9, A 9	02 <sup>h</sup> 42 <sup>m</sup> 41 <sup>s</sup> -00°00'48"
 NGC 247, B 3, C 62, A 3	00 <sup>h</sup> 47 <sup>m</sup> 09 <sup>s</sup> -20°45'38"		

# Chamaeleon

The Chameleon

Cha, Chamaeleontis  
10<sup>h</sup>10<sup>m</sup>, -80°

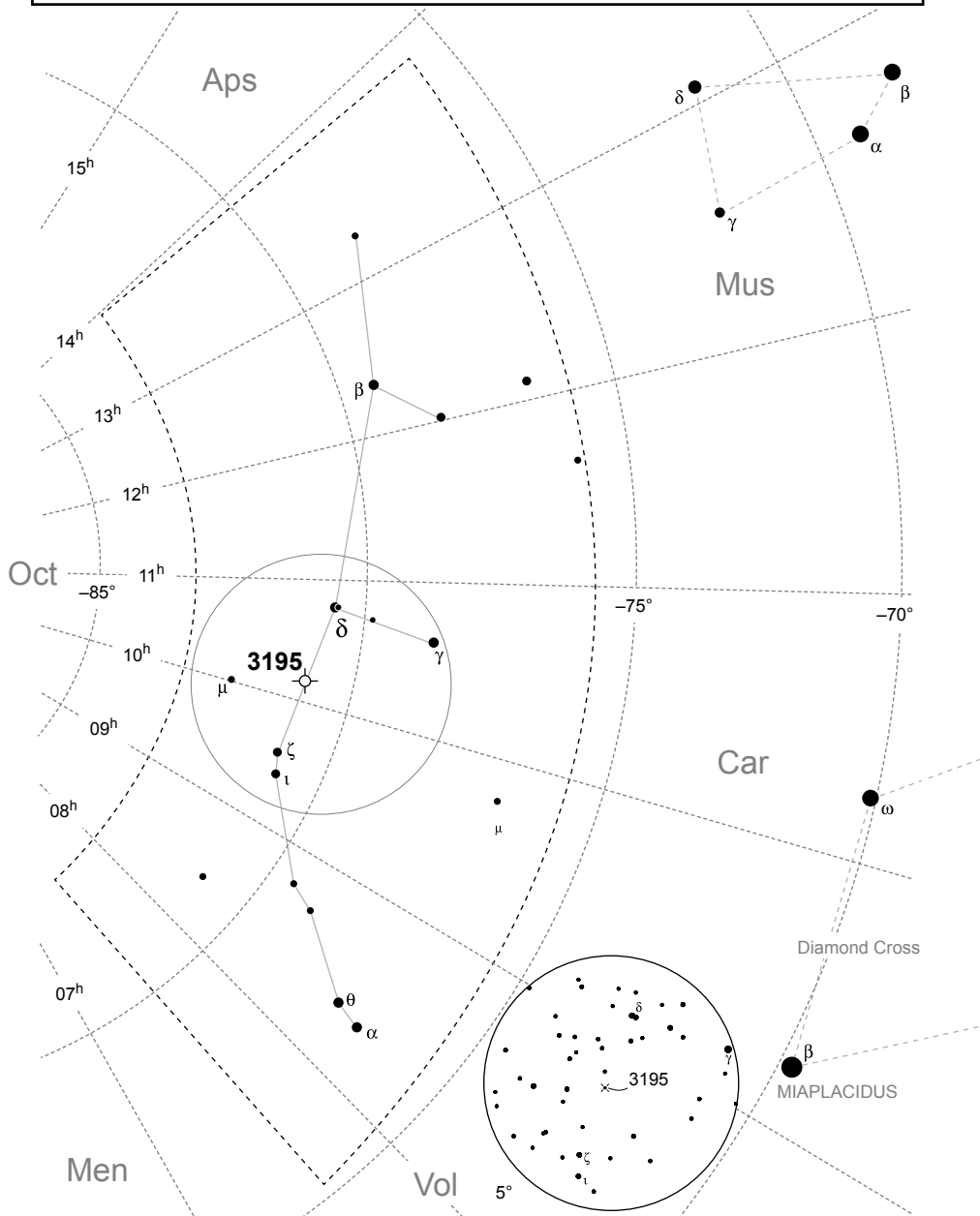


Visibility: Year-round; Mid-November to mid-May  
Culmination: Apr 20 (21:00), Mar 06 (00:00), Jan 20 (03:00)



N★ 31

Origin: Keyser & de Houtman (1597)



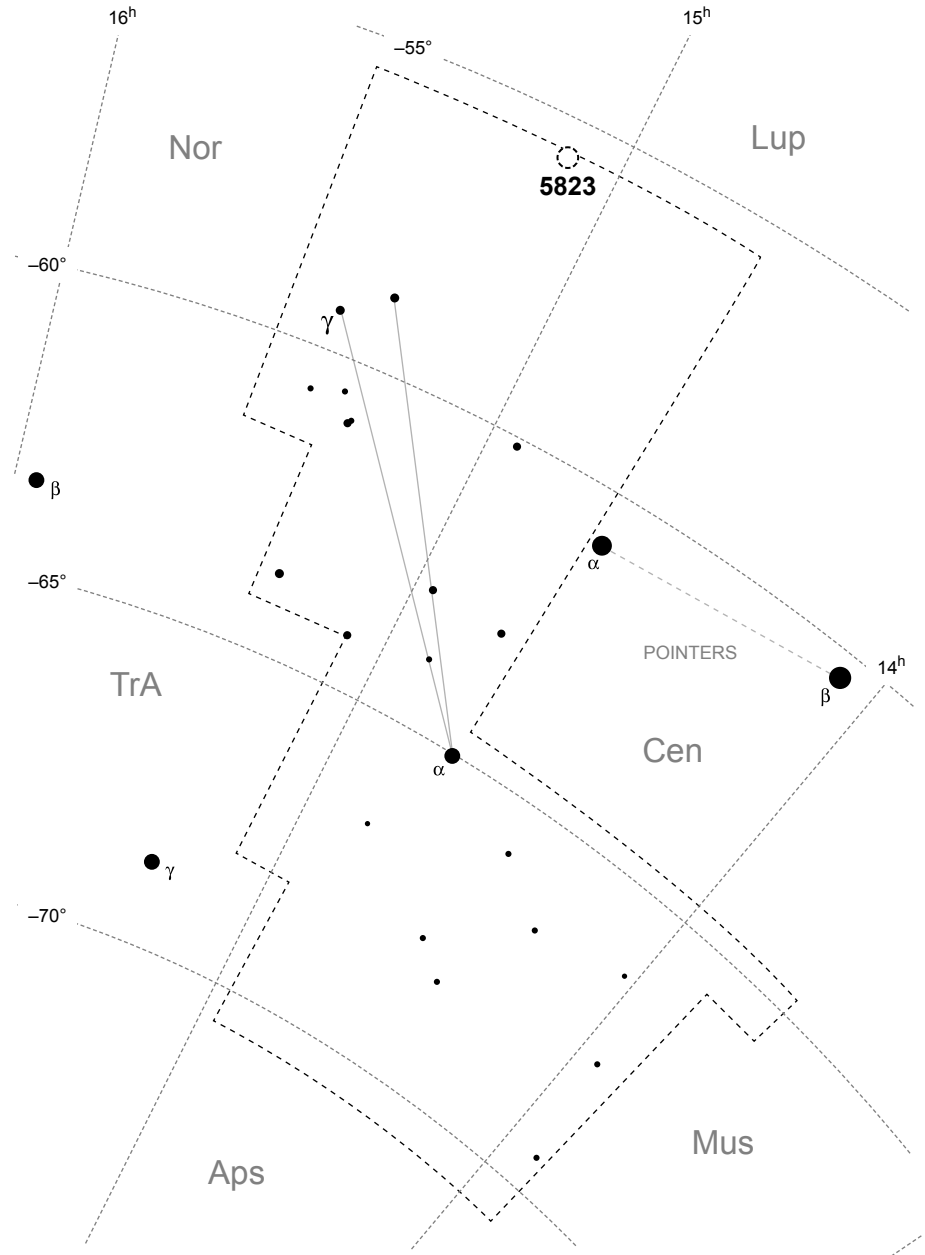
NGC 3195, C 109	10 <sup>h</sup> 09 <sup>m</sup> 21 <sup>s</sup> -80°51'31"	delta Cha, HD 93779	10 <sup>h</sup> 45 <sup>m</sup> 16 <sup>s</sup> -80°28'11"

# Circinus

The Compass

Cir, Circini  
14<sup>h</sup>55<sup>m</sup>, -63°

Visibility: Year-round; mid-February to late July  
 Culmination: Jul 01 (21:00), May 18 (00:00), Apr 02 (03:00)  
 N★ 39  
 Origin: La Caille (1752)



NGC 5823, C 88, A 63	15 <sup>h</sup> 05 <sup>m</sup> 45 <sup>s</sup> -55°37'30"	gamma Cir, HD 136415	15 <sup>h</sup> 23 <sup>m</sup> 23 <sup>s</sup> -59°19'15"

# Columba

The Dove

Col, Columbae  
05<sup>h</sup>50<sup>m</sup>, -36°

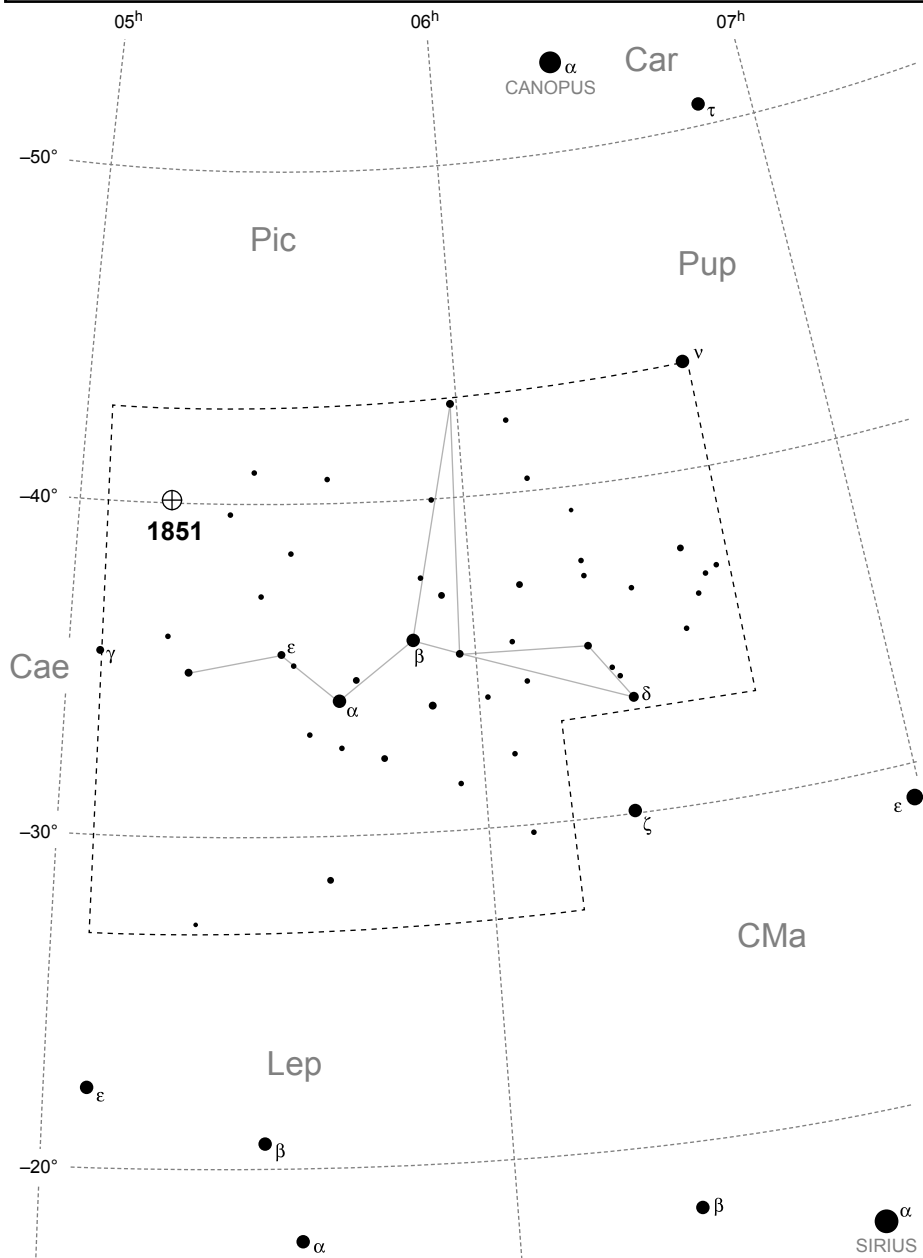


Visibility: Late July to late May (mid-Oct to mid-Mar)  
Culmination: Feb 12 (21:00), Dec 30 (00:00), Nov 14 (03:00)



N★ 68

Origin: Petrus Plancius (1592)



⊕ NGC1851, B 32, C73, A 15 05<sup>h</sup>14<sup>m</sup>07<sup>s</sup> -40°02'50"

# Coma Berenices

Queen Berenice's Hair

Comae Berenice  
12<sup>h</sup>40<sup>m</sup>, +23°

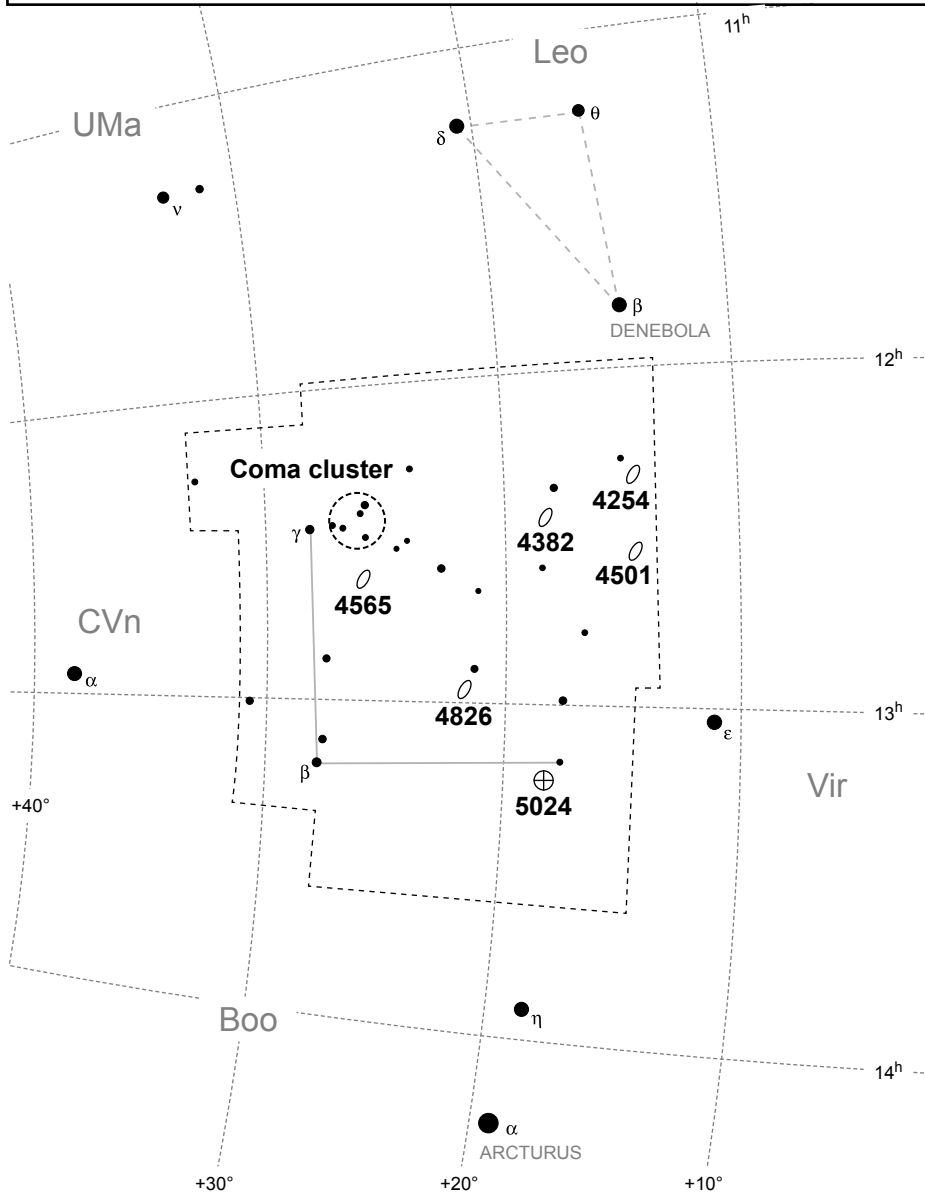


Visibility: January through late July  
Culmination: May 28 (21:00), Apr 14 (00:00), Feb 27 (03:00)



N★ 66

Origin: Vopel (1536), Mercator (1551)



○ NGC 4254, Pinwheel, M 99	12 <sup>h</sup> 18 <sup>m</sup> 50 <sup>s</sup> +14°25'00"	○ NGC 4565, C 38	12 <sup>h</sup> 36 <sup>m</sup> 21 <sup>s</sup> +25°59'14"
⊙ Coma Star Cluster	12 <sup>h</sup> 22 <sup>m</sup> 30 <sup>s</sup> +25°51'00"	○ NGC 4826, Black Eye, M 64	12 <sup>h</sup> 56 <sup>m</sup> 44 <sup>s</sup> +21°41'00"
○ NGC 4382, M 85	12 <sup>h</sup> 25 <sup>m</sup> 24 <sup>s</sup> +18°11'27"	⊕ NGC 5024, M 53	13 <sup>h</sup> 12 <sup>m</sup> 55 <sup>s</sup> +18°10'09"
○ NGC 4501, M 88	12 <sup>h</sup> 31 <sup>m</sup> 59 <sup>s</sup> +14°25'13"		

# Corona Australis

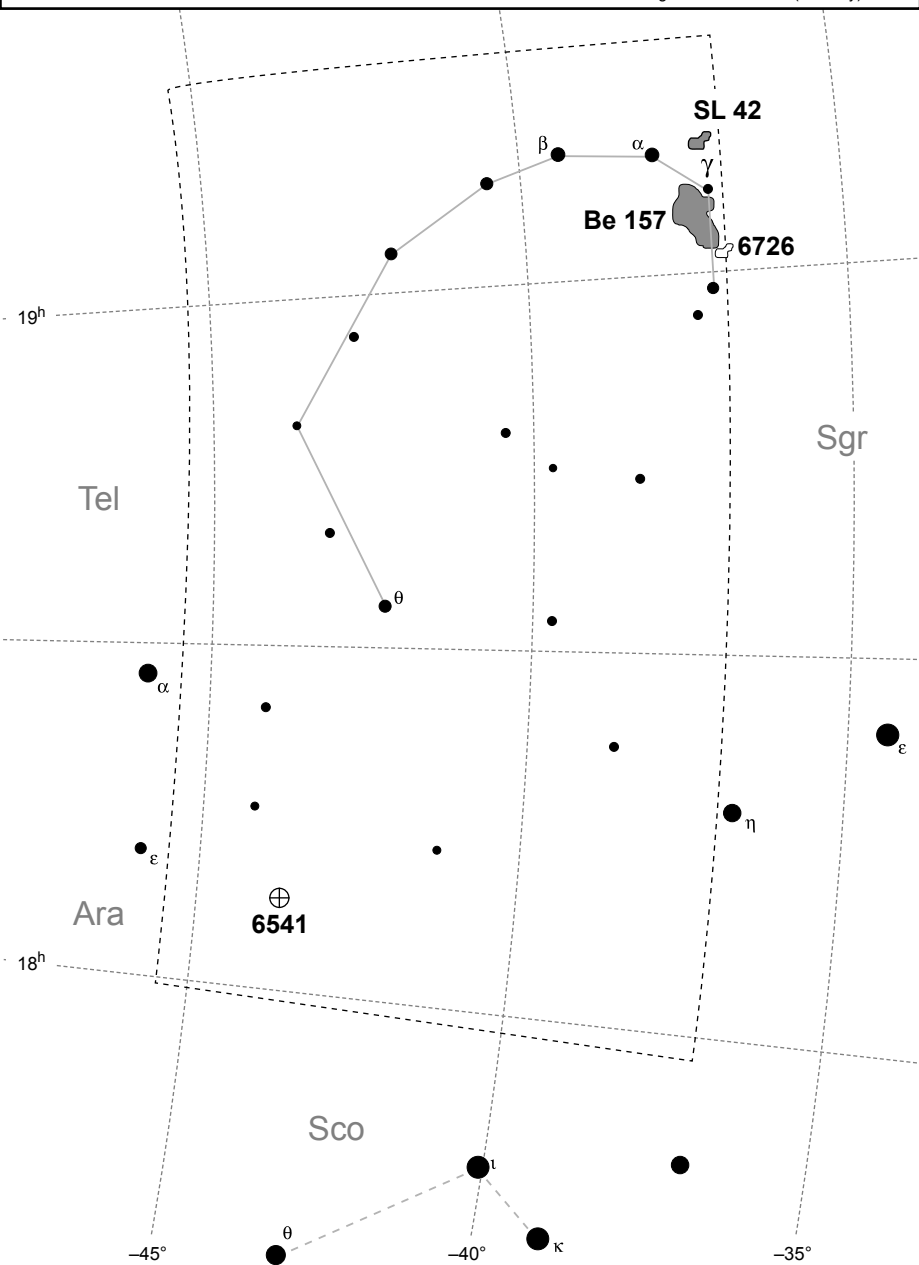
The Southern Crown (CrA)

Coronae Australis  
18<sup>h</sup>40<sup>m</sup>, -41°



Visibility: Early Feb to mid-Dec (early May to mid-Sep)  
Culmination: Aug 27 (21:00), Jul 13 (00:00), May 28 (03:00)

N★ 46  
Origin: Ancient Greek (Ptolemy)



⊕ NGC 6541, C 78, A 85	18 <sup>h</sup> 08 <sup>m</sup> 02 <sup>s</sup> -43°42'20"	♄ NGC 6726, R CrA neb., C68	19 <sup>h</sup> 01 <sup>m</sup> 38 <sup>s</sup> -36°53'31"
♄ Bernes 157, A 93	19 <sup>h</sup> 01 <sup>m</sup> 35 <sup>s</sup> -37°00'55"	♄ SL 42	19 <sup>h</sup> 10 <sup>m</sup> 16 <sup>s</sup> -37°07'30"



# Corona Borealis

The Northern Crown (CrB)

Coronae Borealis

15°50′, +32°

Visibility: Mid-February through early September

Culmination: Jul 15 (21:00), Jun 01 (00:00), Apr 16 (03:00)

N ★ 37

Origin: Ancient Greek (Ptolemy)

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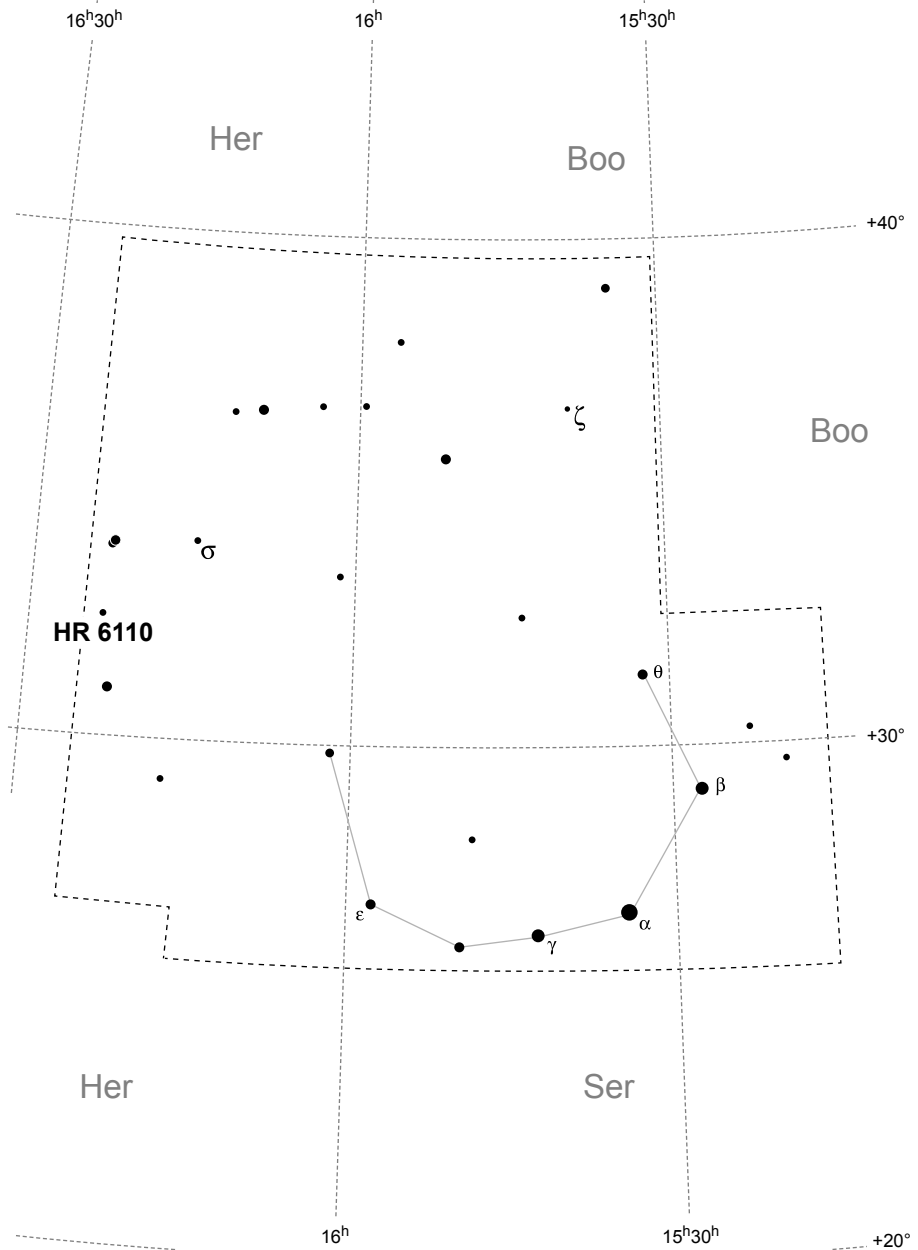
🖐

🖐

🖐

🖐

🖐



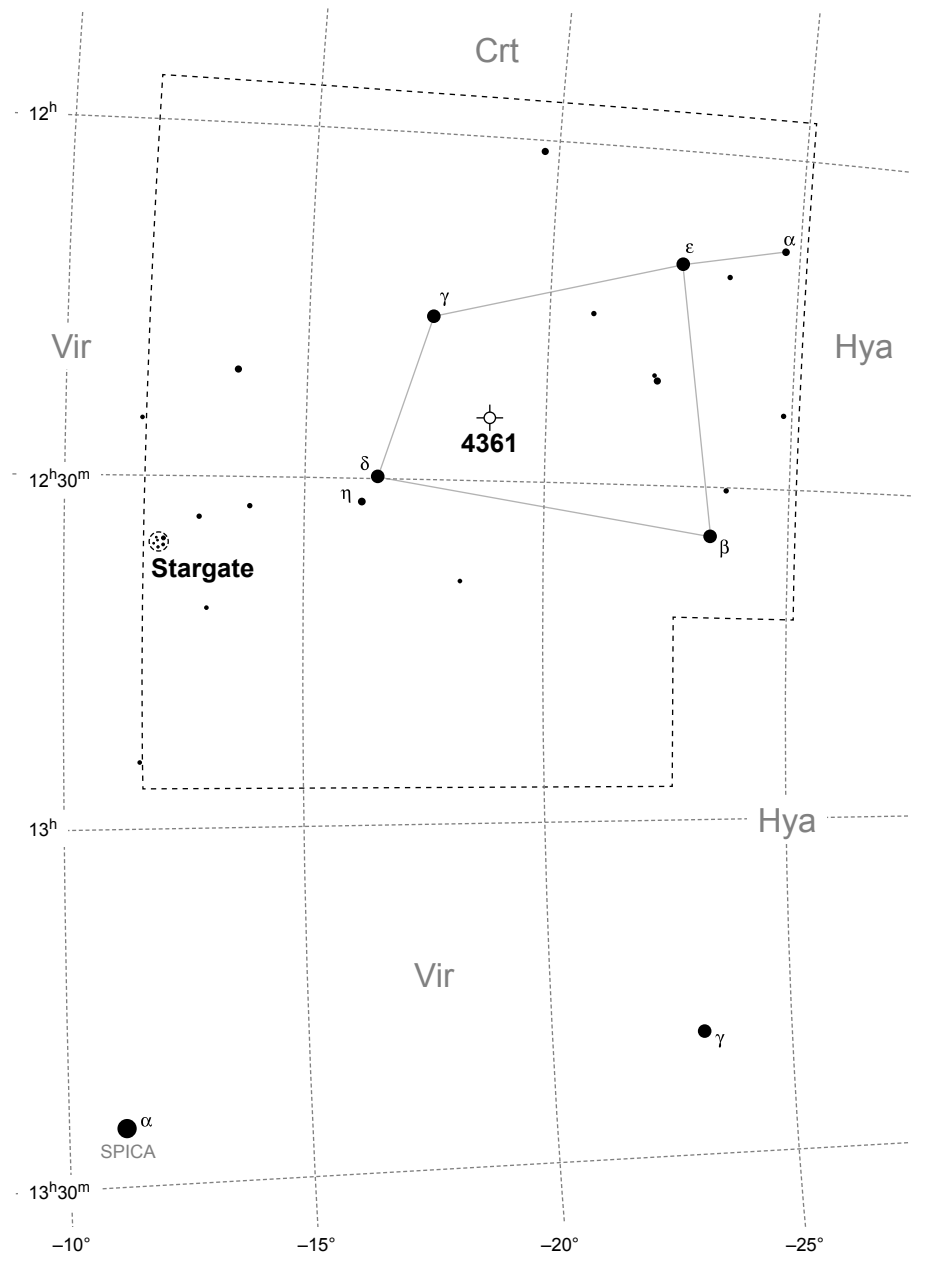
<div> <div>☼</div> <div>★</div> </div> <div>zeta CrB, HD 139891</div>	15 <sup>h</sup> 39 <sup>m</sup> 23 <sup>s</sup> +36°38′09″	<div> <div>☼</div> <div>★</div> </div> <div>23 Her, HR 6110</div>	16 <sup>h</sup> 22 <sup>m</sup> 57 <sup>s</sup> +32°19′59″
<div> <div>☼</div> <div>★</div> </div> <div>sigma CrB, HD 146361</div>	16 <sup>h</sup> 14 <sup>m</sup> 41 <sup>s</sup> +33°51′31″		

# Corvus

The Crow

Crv. Corvi  
12<sup>h</sup>25<sup>m</sup>, -19°

Visibility: Early Nov to late Aug (Feb to mid-June)  
 Culmination: May 23 (21:00), Apr 09 (00:00), Feb 22 (03:00)  
 N★ 29  
 Origin: Ancient Greek (Ptolemy)



NGC 4361, A 48	12 <sup>h</sup> 24 <sup>m</sup> 31 <sup>s</sup> -18°47'06"	Stargate	12 <sup>h</sup> 35 <sup>m</sup> 46 <sup>s</sup> -12°01'36"

# Crater

The Cup

Crt, Crateris  
11<sup>h</sup>20<sup>m</sup>, -16°

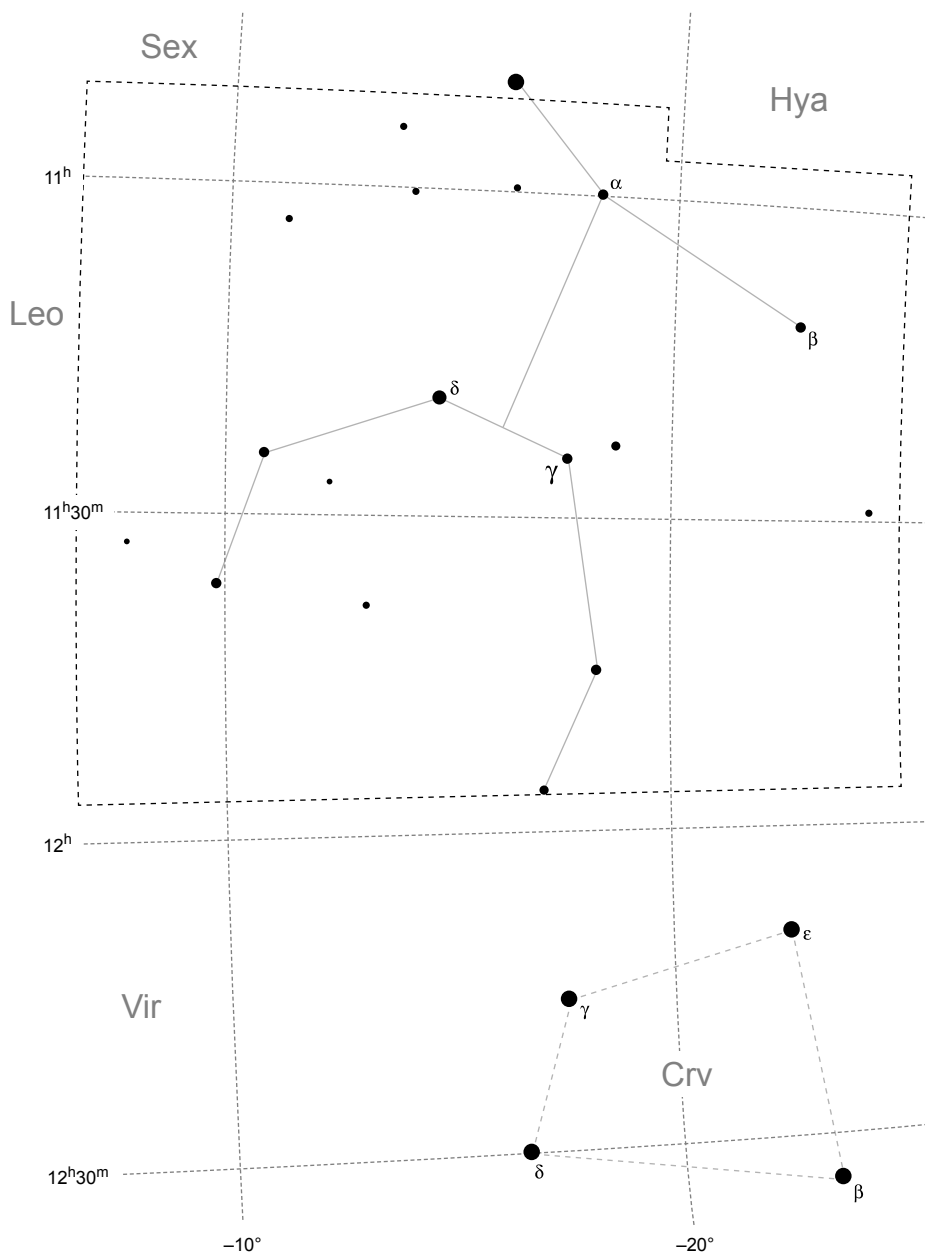


Visibility: Mid-Nov to early Aug (mid-Jan to late May)  
Culmination: May 07 (21:00), Mar 24 (00:00), Feb 06 (03:00)



N★ 33

Origin: Ancient Greek (Ptolemy)



gamma Crt, SAO 156661

11<sup>h</sup>24<sup>m</sup>53<sup>s</sup> -17°41'02"

# Crux

The Southern Cross

Cru, Crucis  
12<sup>h</sup>30<sup>m</sup>, -59°

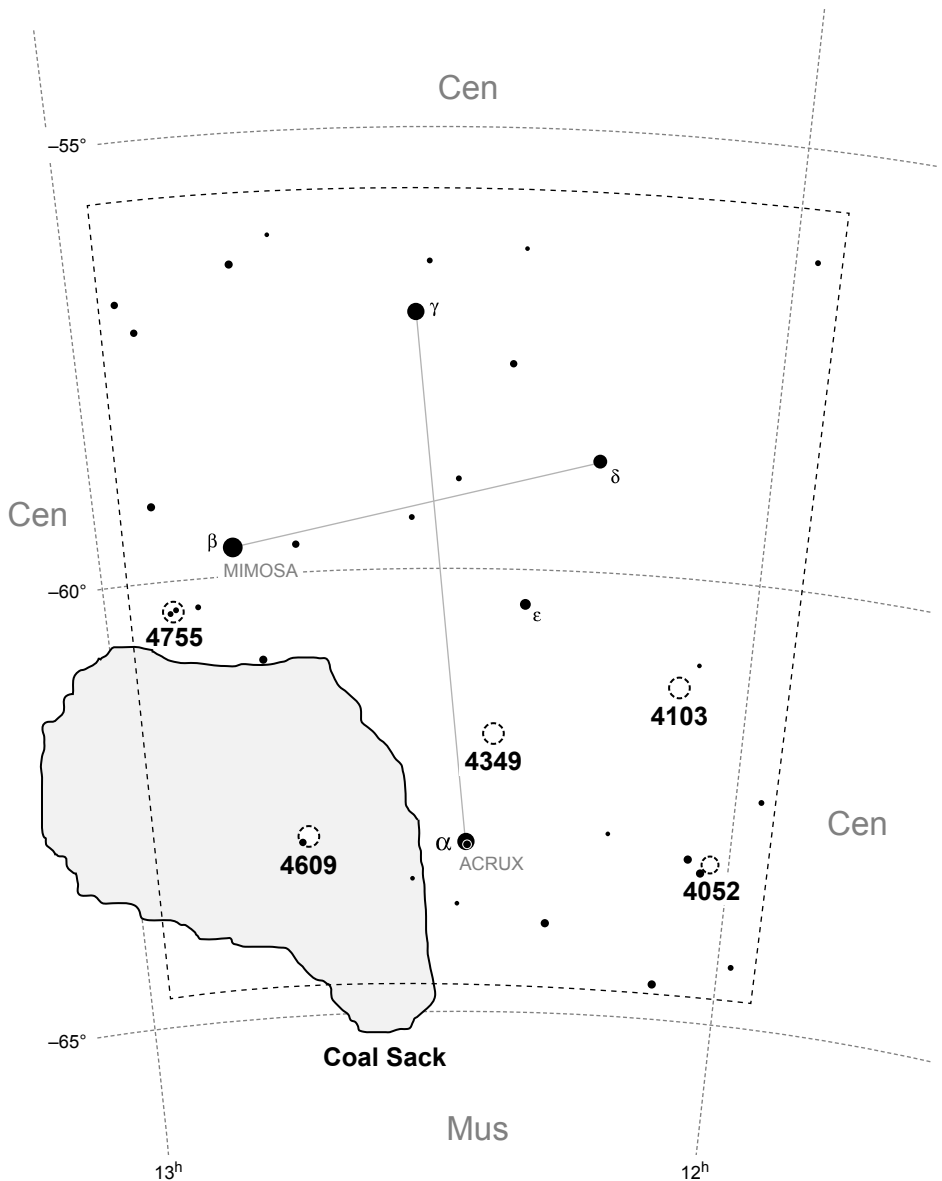


Visibility: Year-round; best early February to mid-June  
Culmination: May 26 (21:00), Apr 11 (00:00), Feb 24 (03:00)



N ★ 49

Origin: Petrus Plancius (1589)



○ NGC 4052	12 <sup>h</sup> 01 <sup>m</sup> 12 <sup>s</sup> -63°13'	☞ Coal Sack, C99, A 51	12 <sup>h</sup> 31 <sup>m</sup> 19 <sup>s</sup> -63°44'36"
○ NGC 4103	12 <sup>h</sup> 06 <sup>m</sup> 43 <sup>s</sup> -61°15'21"	○ NGC 4609, C98	12 <sup>h</sup> 42 <sup>m</sup> 18 <sup>s</sup> -62°59'
○ NGC 4349	12 <sup>h</sup> 24 <sup>m</sup> 12 <sup>s</sup> -61°52'	○ NGC 4755, Jewel Box, C 94	12 <sup>h</sup> 53 <sup>m</sup> 42 <sup>s</sup> -60°22'
★ α alpha Crucis, SAO 251904	12 <sup>h</sup> 26 <sup>m</sup> 36 <sup>s</sup> -63°05'57"		

# Cygnus

The Swan

Cyg, Cygni  
20<sup>h</sup>20<sup>m</sup>, +43°

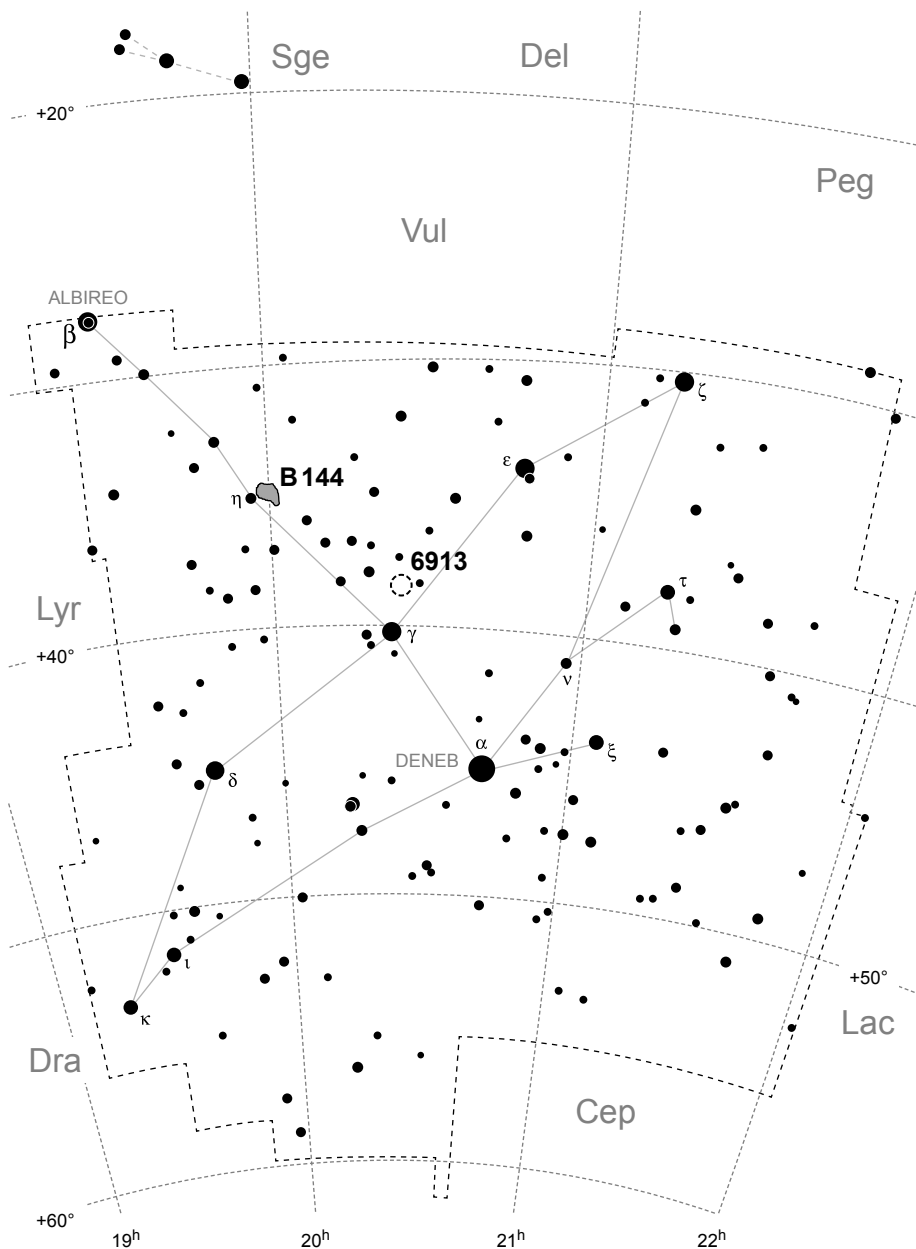


Visibility: Mid-May through late October

Culmination: Sep 22 (21:00), Aug 08 (00:00), Jun 23 (03:00)

N★ 262

Origin: Ancient Greek (Ptolemy)



\*★ beta Cyg, HD 183912

19<sup>h</sup>30<sup>m</sup>43<sup>s</sup> +27°57'35"

○ NGC 6913, M29

20<sup>h</sup>23<sup>m</sup>56<sup>s</sup> +38°31'24"

☞ Barnard 144

19<sup>h</sup>58<sup>m</sup> +35°20'

# Delphinus

The Dolphin

Del, Delphini  
21<sup>h</sup>05<sup>m</sup>, +10°

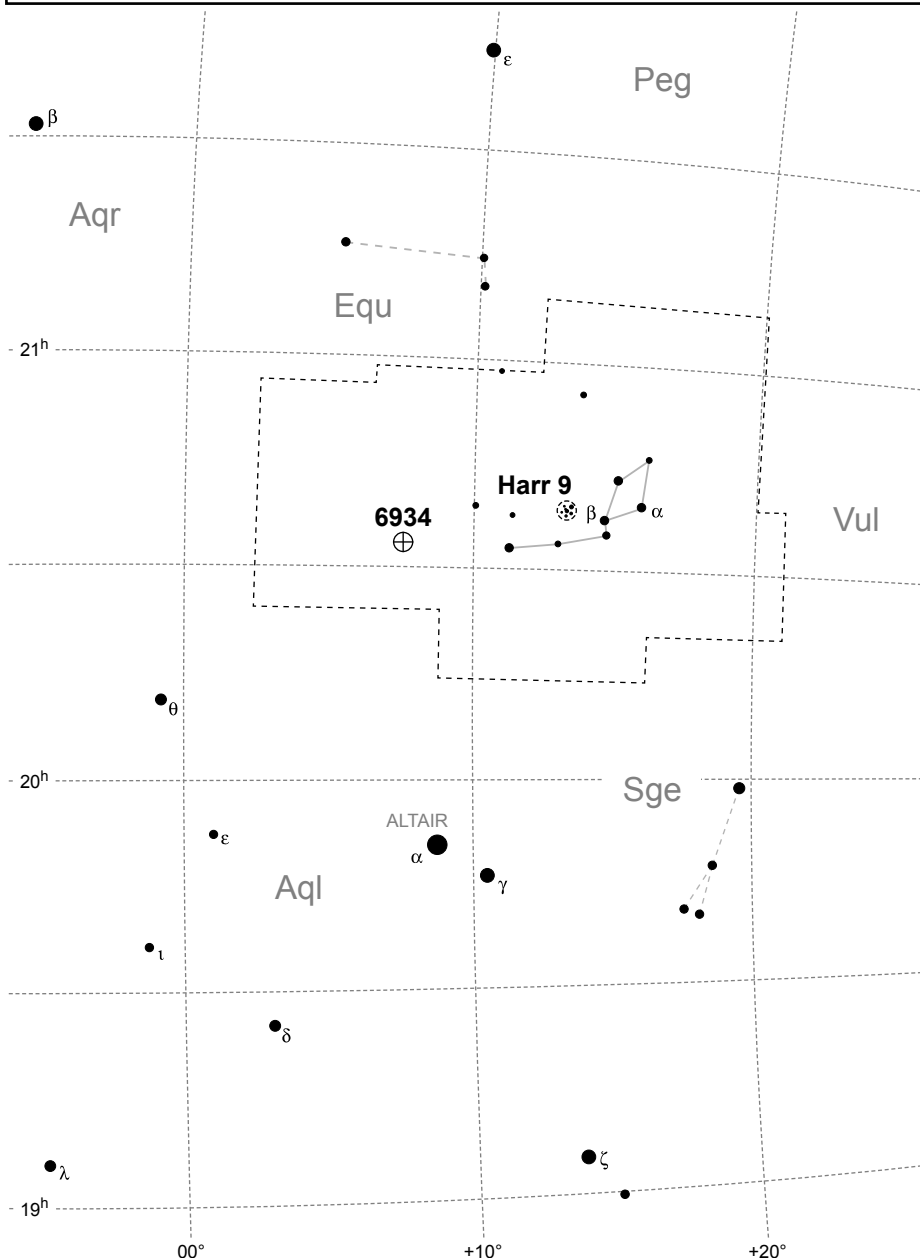


Visibility: Late July through November

Culmination: Oct 02 (21:00), Aug 19 (00:00), Jul 04 (03:00)

N★ 44

Origin: Ancient Greek (Ptolemy)



⊕ NGC 6934, C 47	20 <sup>h</sup> 34 <sup>m</sup> 11 <sup>s</sup> +07°24'15"	☼ Harrington 9	20 <sup>h</sup> 38 <sup>m</sup> +13°30'

# Dorado

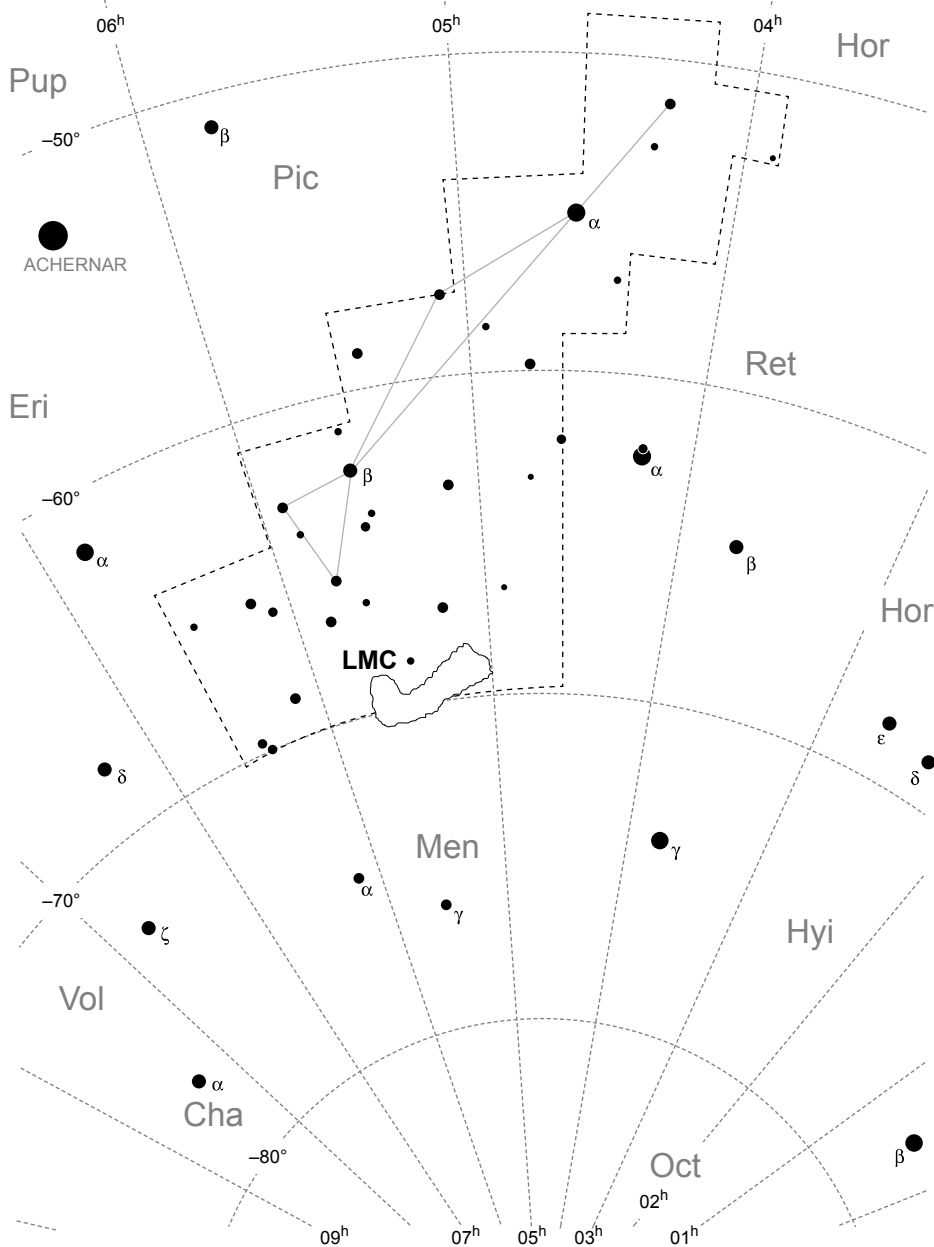
The Swordfish

Dor, Doradus  
05<sup>h</sup>10<sup>m</sup>, -61°



Visibility: Year-round; best late Oct through Feb  
Culmination: Feb 03 (21:00), Dec 20 (00:00), Nov 04 (03:00)

N ★ 29  
Origin: Keyser & de Houtman (1597)



LMC, A 16

05<sup>h</sup>24<sup>m</sup> -69°45'

# Equuleus

The Little Horse

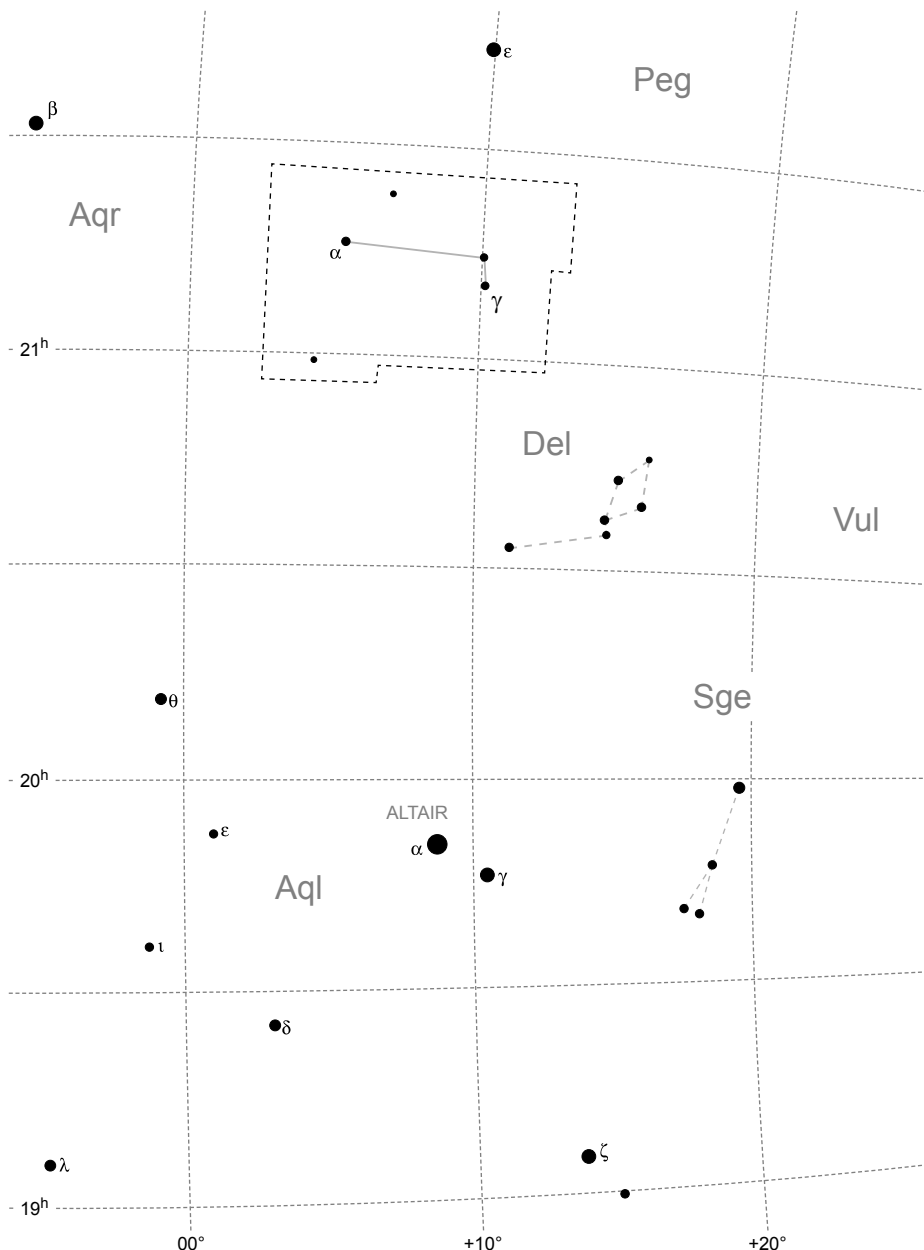
Equ, Equulei  
21<sup>h</sup>10<sup>m</sup>, +07°



Visibility: Late April through mid-December  
Culmination: Oct 04 (21:00), Aug 20 (00:00), Jul 05 (03:00)

N★ 16

Origin: Ancient Greek (Ptolemy)



\*★ gamma Equ, HD 201601      21<sup>h</sup>10<sup>m</sup>21<sup>s</sup> +10°07'54"



# Eridanus

The River

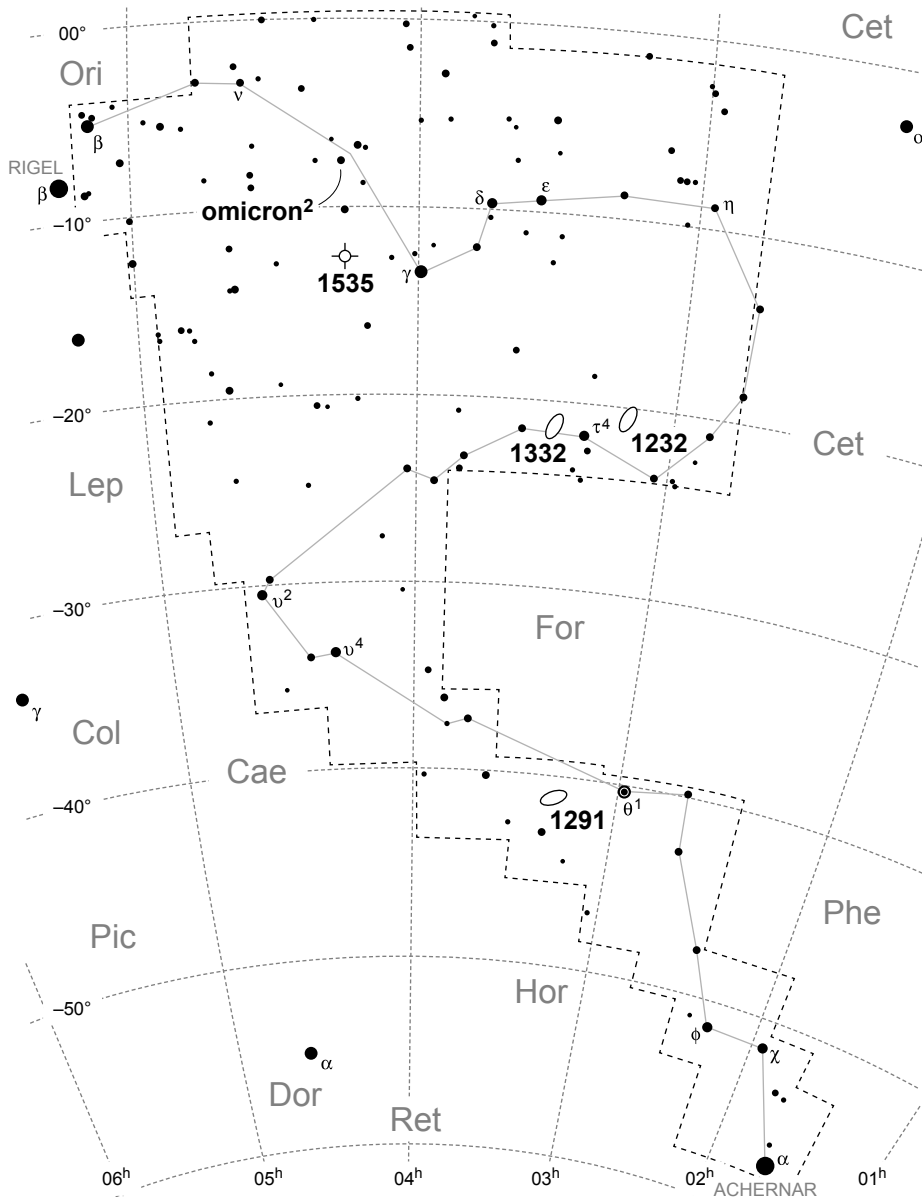
Eri, Eridani  
04°00′, −22°



Visibility: Mid-July to late April (Oct to early Feb)  
Culmination: Jan 16 (21:00), Dec 02 (00:00), Oct 17 (03:00)



N★ 194  
Origin: Ancient Greek (Ptolemy)



NGC 1232, B 10a	03 <sup>h</sup> 09 <sup>m</sup> 45 <sup>s</sup> −20°34′45″	NGC 1535, B 22, A 14	04 <sup>h</sup> 14 <sup>m</sup> 16 <sup>s</sup> −12°44′22″
NGC 1291, B 12, A 11	03 <sup>h</sup> 17 <sup>m</sup> 19 <sup>s</sup> −41°06′29″	★ omicron-2 Eri, HD 26965	04 <sup>h</sup> 15 <sup>m</sup> 16 <sup>s</sup> −07°39′10″
NGC 1332	03 <sup>h</sup> 26 <sup>m</sup> 17 <sup>s</sup> −21°20′04″		

# Fornax

The Chemical Furnace

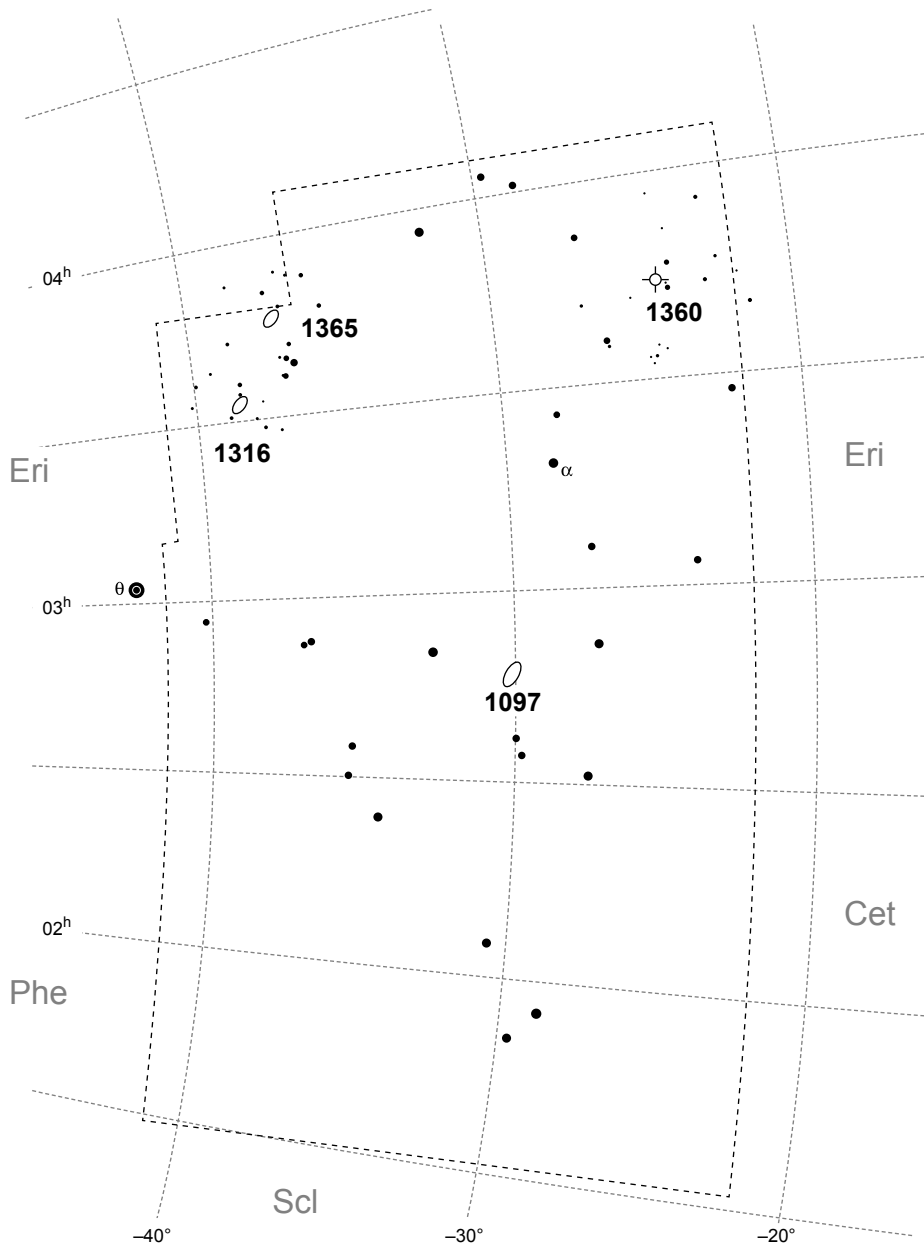
For, Fornacis  
02<sup>h</sup>45<sup>m</sup>, -32°



Visibility: Mid-June to April (early Sep to Jan)  
Culmination: Dec 28 (21:00), Nov 13 (00:00), Sep 29 (03:00)



N ★ 59  
Origin: La Caille (1752)



NGC 1097, B 10, C 67	02 <sup>h</sup> 46 <sup>m</sup> 19 <sup>s</sup> -30°16'29"	NGC 1360, B 15	03 <sup>h</sup> 33 <sup>m</sup> 15 <sup>s</sup> -25°52'18"
NGC 1316, B 14, A 12	03 <sup>h</sup> 22 <sup>m</sup> 42 <sup>s</sup> -37°12'34"	NGC 1365, B 16, A 13	03 <sup>h</sup> 33 <sup>m</sup> 36 <sup>s</sup> -36°08'28"

# Gemini

The Twins

Gem. Geminorum  
06<sup>h</sup>50<sup>m</sup>, +23°

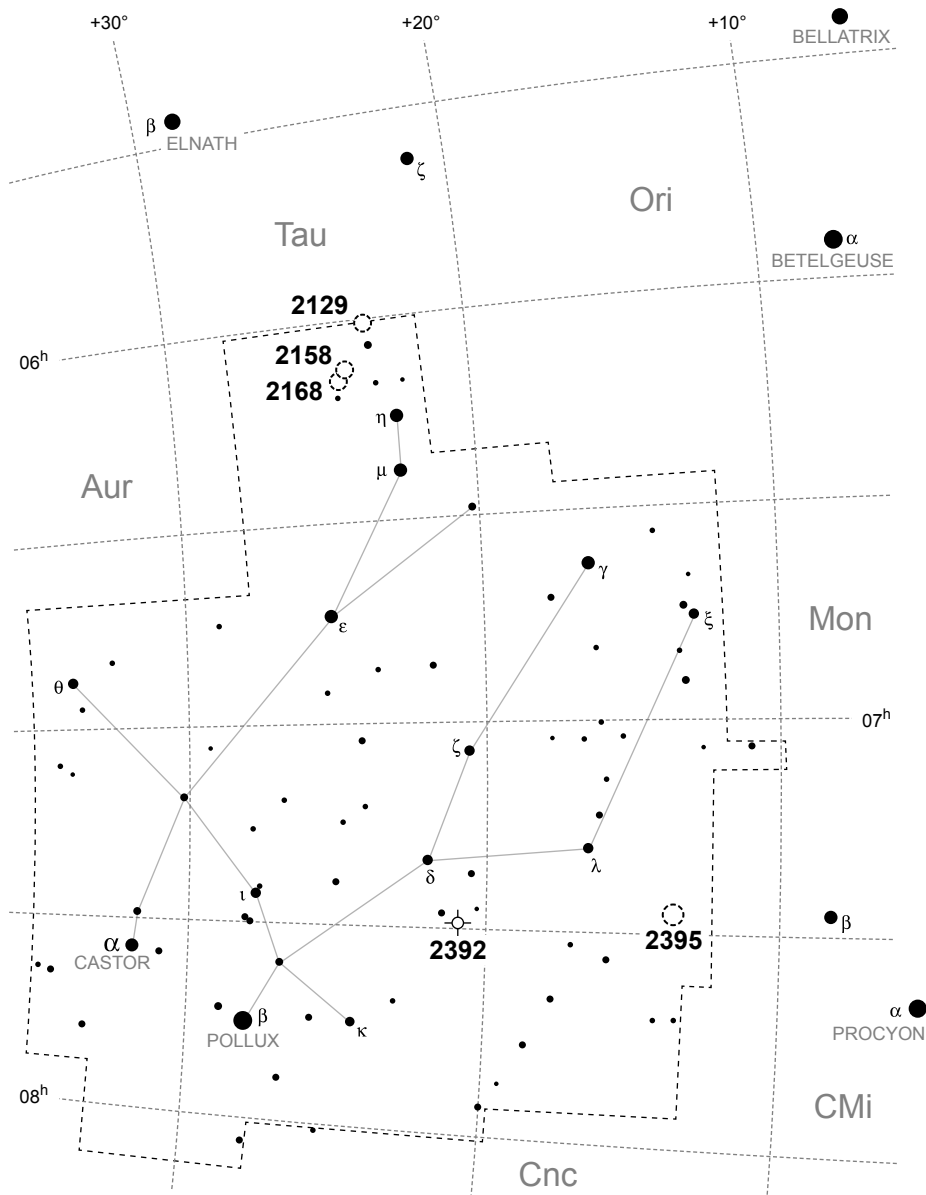


Visibility: Early October to late April  
Culmination: Feb 28 (21:00), Jan 14 (00:00), Nov 30 (03:00)



N★ 119

Origin: Ancient Greek (Ptolemy)



○ NGC 2129	06 <sup>h</sup> 01 <sup>m</sup> 06 <sup>s</sup> +23°19'24"	○ NGC 2395	07 <sup>h</sup> 27 <sup>m</sup> 06 <sup>s</sup> +13°35'00"
○ NGC 2158	06 <sup>h</sup> 07 <sup>m</sup> 25 <sup>s</sup> +24°05'48"	○ NGC 2392, Eskimo, C 39	07 <sup>h</sup> 29 <sup>m</sup> 11 <sup>s</sup> +20°54'42"
○ NGC 2168, M35	06 <sup>h</sup> 09 <sup>m</sup> 06 <sup>s</sup> +24°21'00"	★ alpha Gem, Castor	07 <sup>h</sup> 34 <sup>m</sup> 36 <sup>s</sup> +31°53'19"

# Grus

The Crane

Gru, Gruis  
22<sup>h</sup>35<sup>m</sup>, -45°

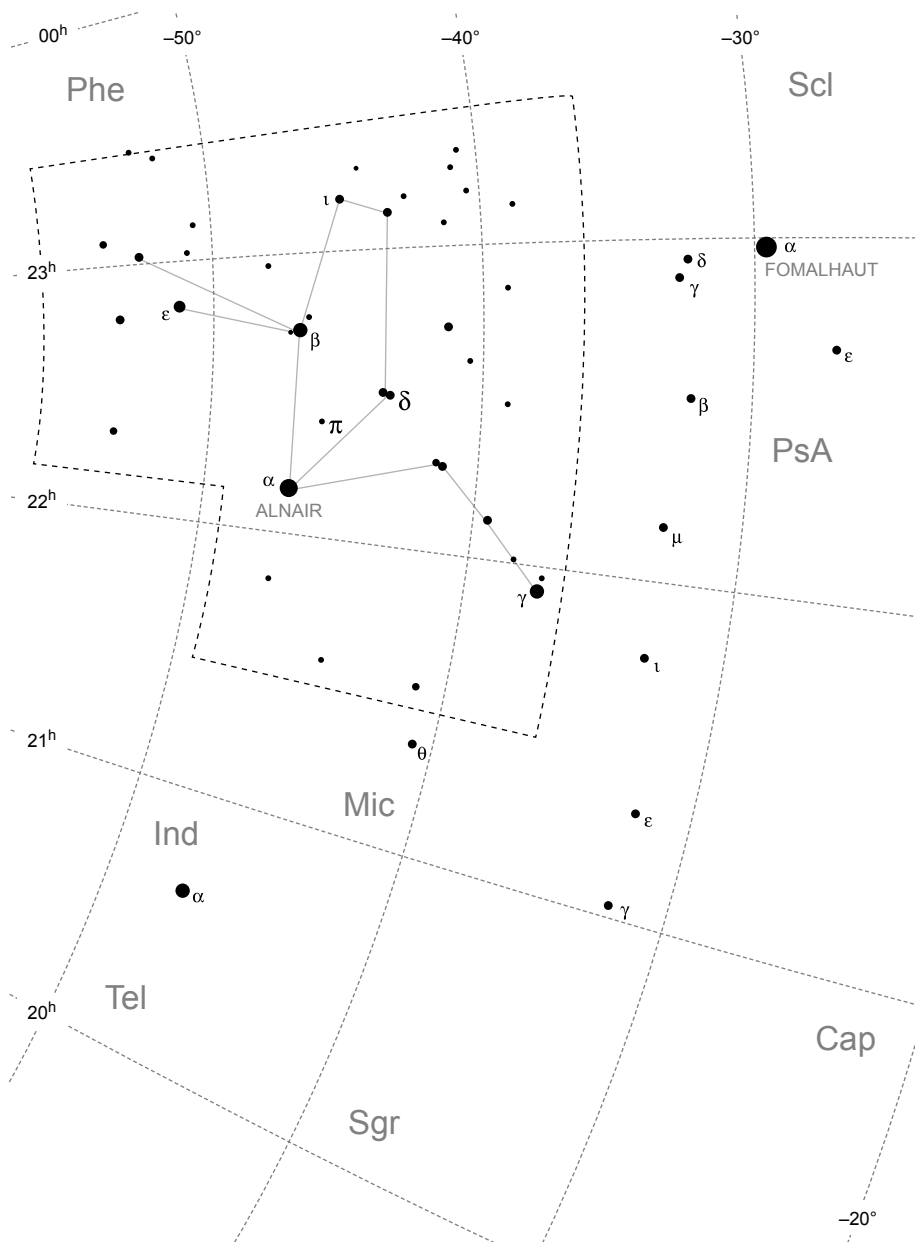


Visibility: Early Apr through Feb (early Jul to late Nov)  
Culmination: Oct 26 (21:00), Sep 11 (00:00), Jul 27 (03:00)



N★55

Origin: Keyser & de Houtman (1597)



☆ pi-1 Gru, HD 212087	22 <sup>h</sup> 22 <sup>m</sup> 44 <sup>s</sup> -45°56'53"	☆ delta-2 Gru, HD 213080	22 <sup>h</sup> 29 <sup>m</sup> 45 <sup>s</sup> -43°44'57"
☆ delta-1 Gru, HD 213009	22 <sup>h</sup> 29 <sup>m</sup> 16 <sup>s</sup> -43°29'44"		

# Hercules

Her, Herculis  
17<sup>h</sup>10<sup>m</sup>, +31°

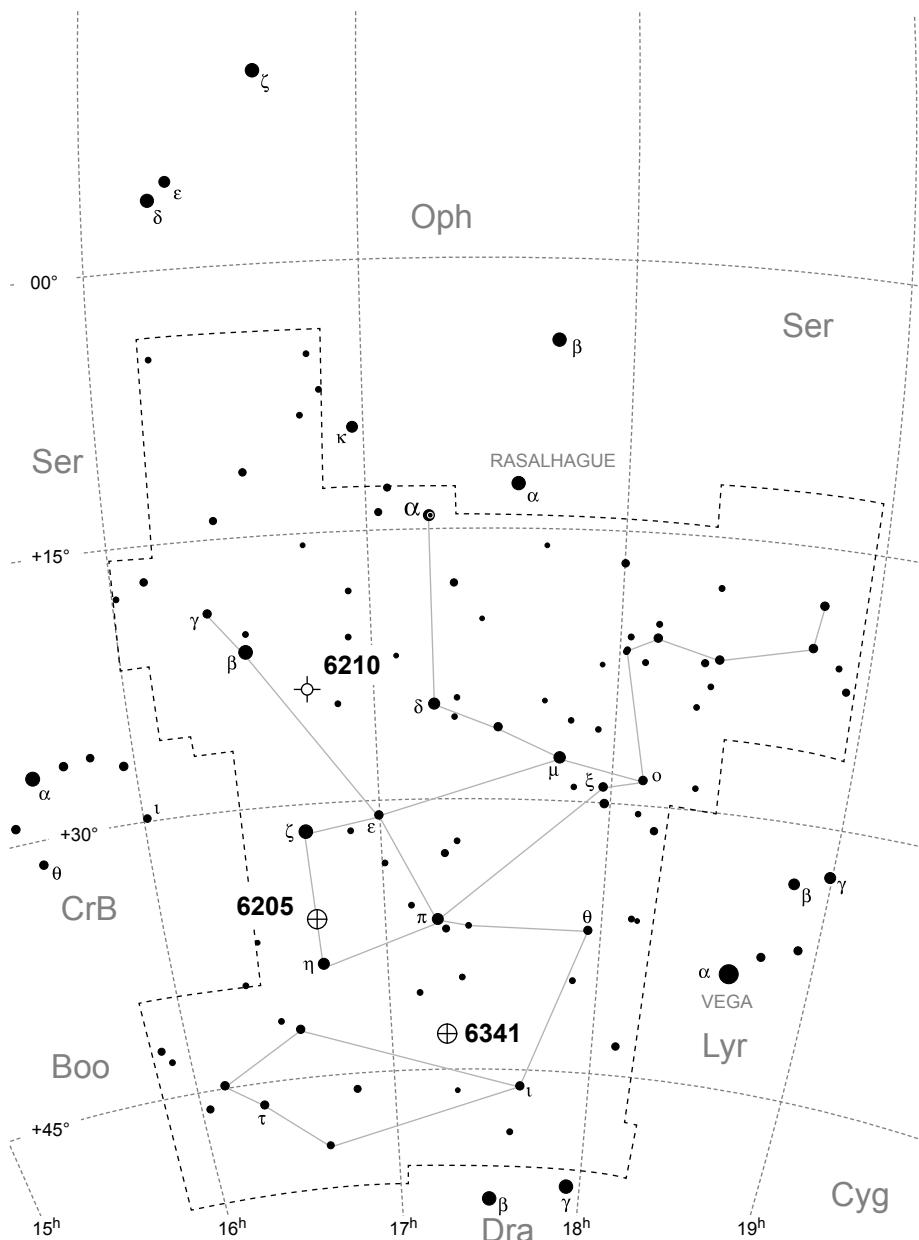
Visibility: Mid-Feb through September

Culmination: Aug 05 (21:00), Jun 21 (00:00), May 06 (03:00)

N★ 245

Origin: Ancient Greek (Ptolemy)

Hercules (Gk. Herakles, son of Zeus) ★ ★ ★ ☆ ☆



⊕ NGC 6205, M 13

16<sup>h</sup>41<sup>m</sup>41<sup>s</sup> +36°27'37"

★\* alpha Her, SAO 102680

17<sup>h</sup>14<sup>m</sup>39<sup>s</sup> +14°23'25"

⊕ NGC 6210, HD 151121

16<sup>h</sup>44<sup>m</sup>29<sup>s</sup> +23°48'00"

⊕ NGC 6341, M 92

17<sup>h</sup>17<sup>m</sup>08<sup>s</sup> +43°08'12"

# Horologium

The Pendulum Clock

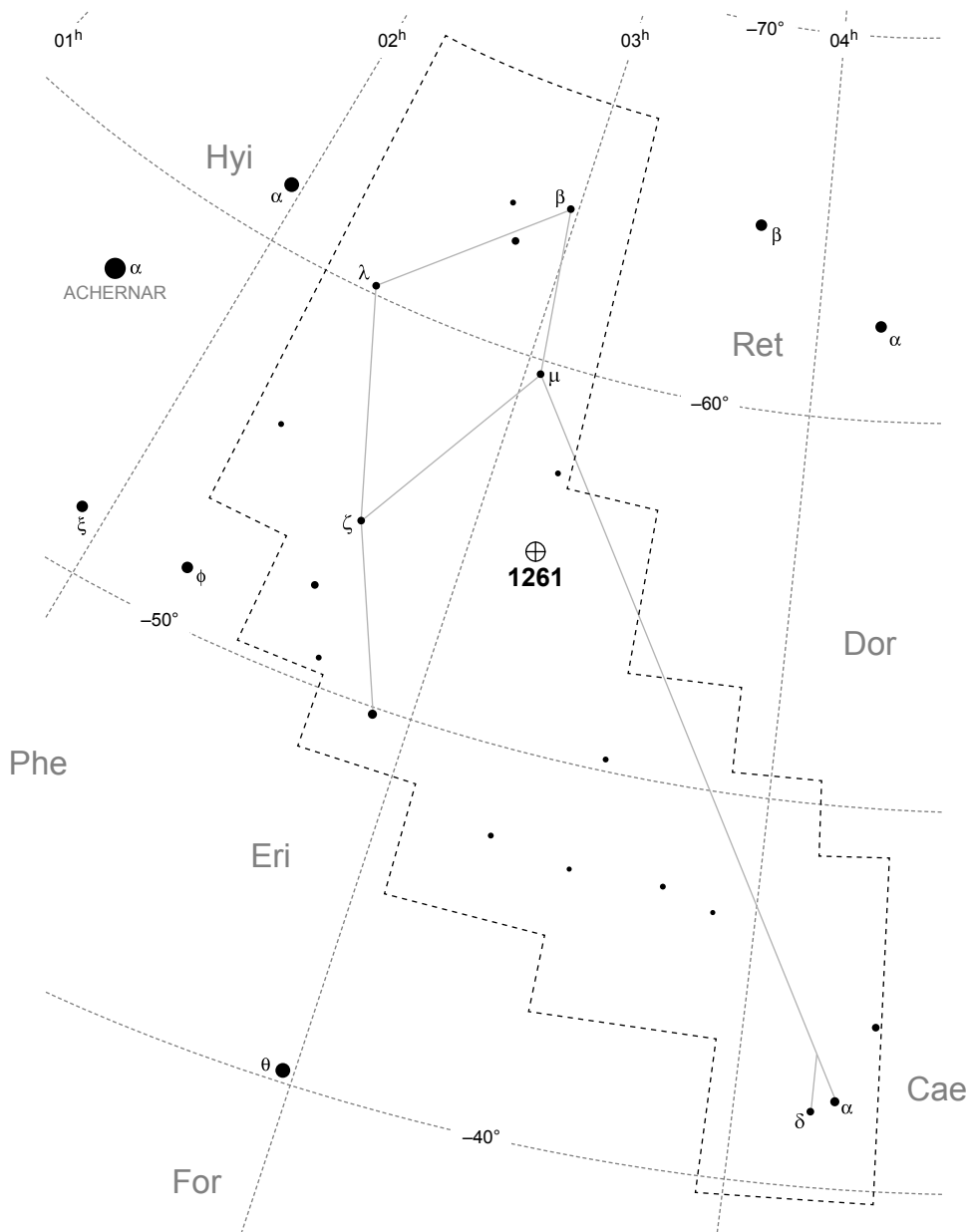
Hor, Horologii  
03<sup>h</sup>10<sup>m</sup>, -53°



Visibility: Year round; best September to late January  
Culmination: Jan 03 (21:00), Nov 20 (00:00), Oct 05 (03:00)



N ★ 30  
Origin: La Caille (1752)



⊕ NGC 1261, B 11, C 87, A 10 03<sup>h</sup>12<sup>m</sup>15<sup>s</sup> -55°13'01"

# Hydra

The Female Water Snake

Hya, Hydrae  
09<sup>h</sup>20<sup>m</sup>, -13°

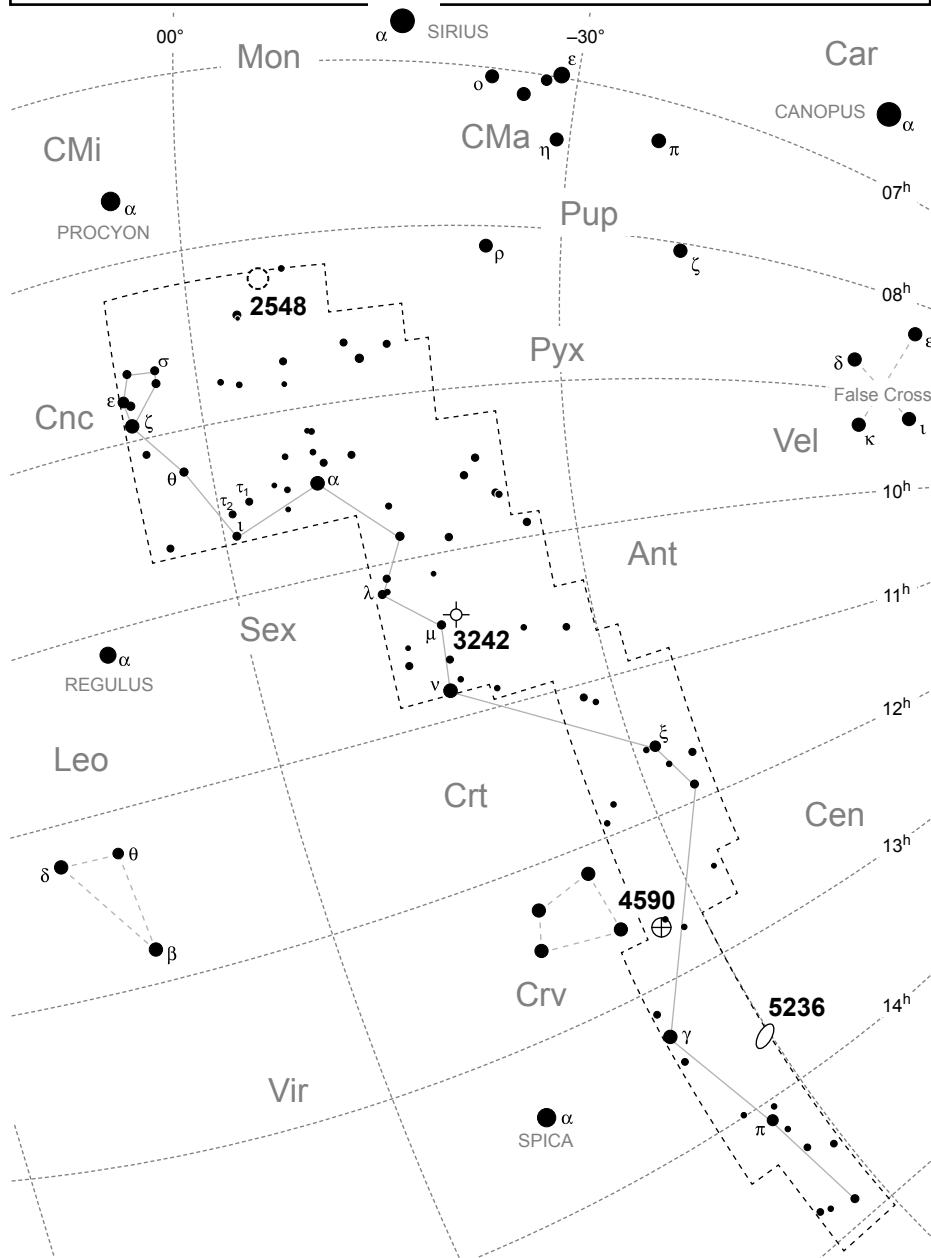


Visibility: Mid-October through late July  
Culmination: Apr 06 (21:00), Feb 21 (00:00), Jan 06 (03:00)



N★ 238

Origin: Ancient Greek (Ptolemy)



NGC 2548, M 48, A 30	08 <sup>h</sup> 13 <sup>m</sup> 42 <sup>s</sup> -05°45'	NGC 4590, M 68, B 51	12 <sup>h</sup> 39 <sup>m</sup> 28 <sup>s</sup> -26°44'35"
NGC 3242, B 45, C 59, A 39	10 <sup>h</sup> 24 <sup>m</sup> 46 <sup>s</sup> -18°38'33"	NGC 5236, M 83, B 63, A 58	13 <sup>h</sup> 37 <sup>m</sup> 01 <sup>s</sup> -29°51'59"

# Hydrus

The Small/Male Water Snake

Hyi, Hydr  
02<sup>h</sup>15<sup>m</sup>, -73°

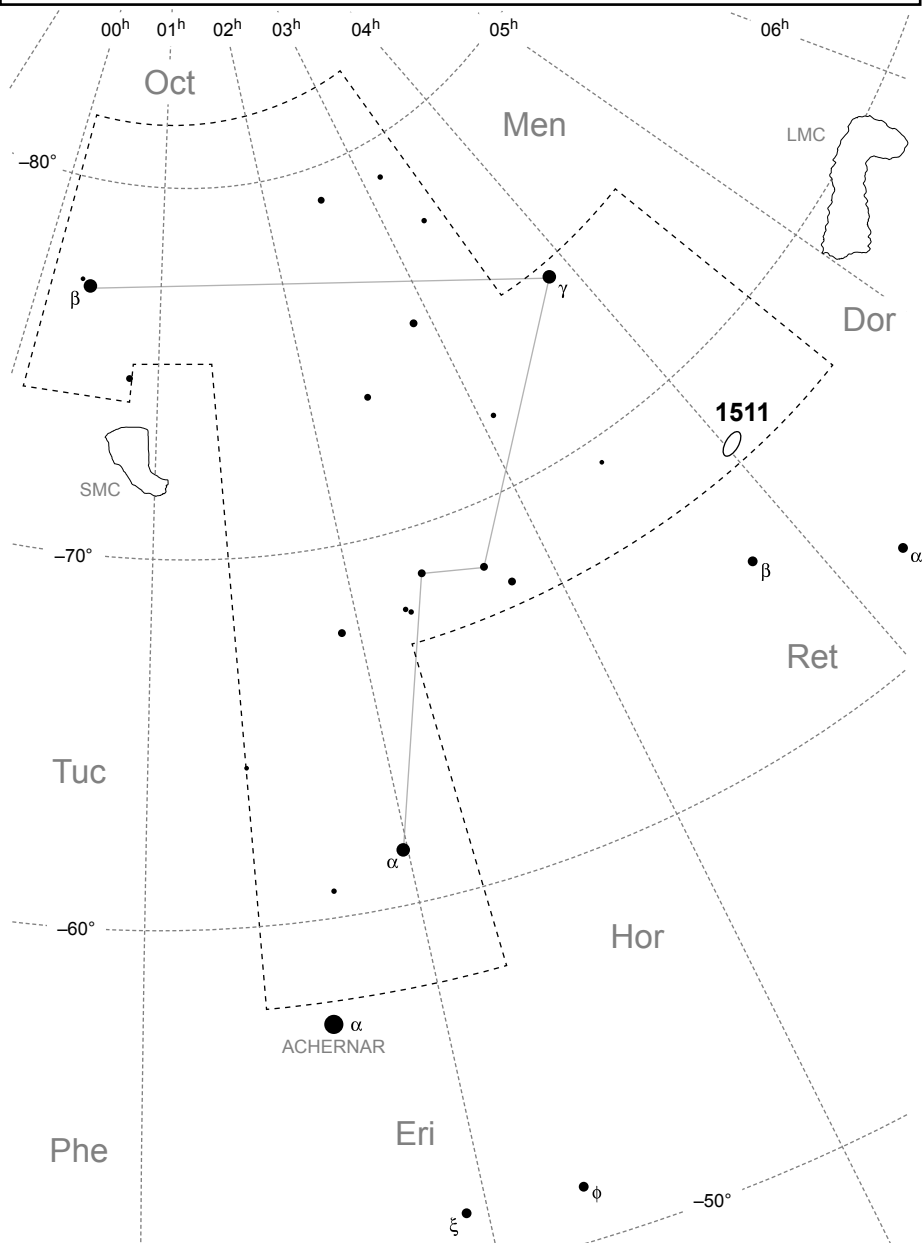


Visibility: Year-round; best mid-August to mid-January  
Culmination: Dec 21 (21:00), Nov 06 (00:00), Sep 21 (03:00)



N★ 33

Origin: Keyser & de Houtman (1597)



NGC 1511

03<sup>h</sup>59<sup>m</sup>36<sup>s</sup> -67°38'06"



# Indus

The Indian

Ind, Indi  
21<sup>h</sup>15<sup>m</sup>, -54°

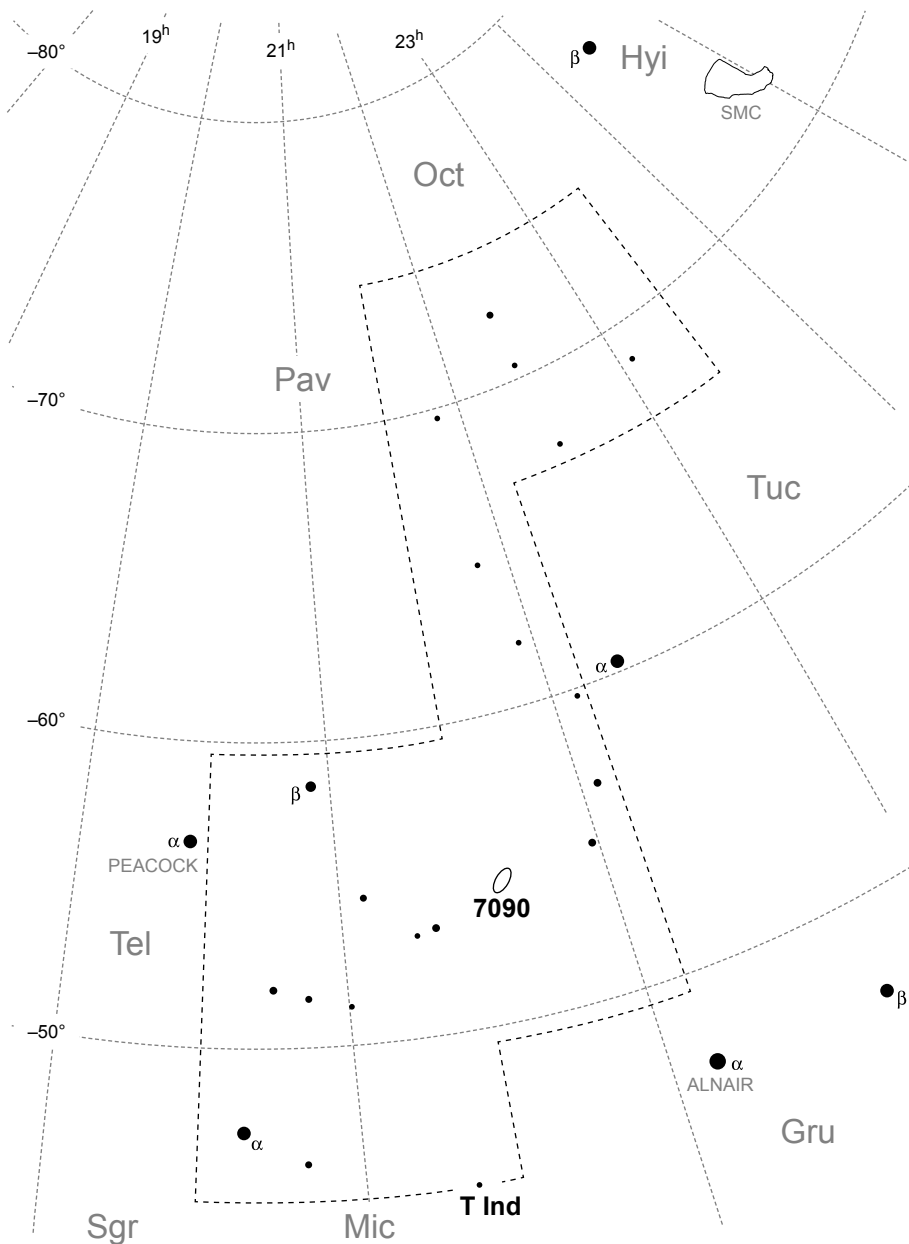


Visibility: Year-round; late June to late November  
Culmination: Oct 05 (21:00), Aug 21 (00:00), Jul 07 (03:00)



N★ 42

Origin: Keyser & de Houtman (1597)



☆ T Ind, HD 202874

21<sup>h</sup>20<sup>m</sup>10<sup>s</sup> -45°01'19"

NGC 7090

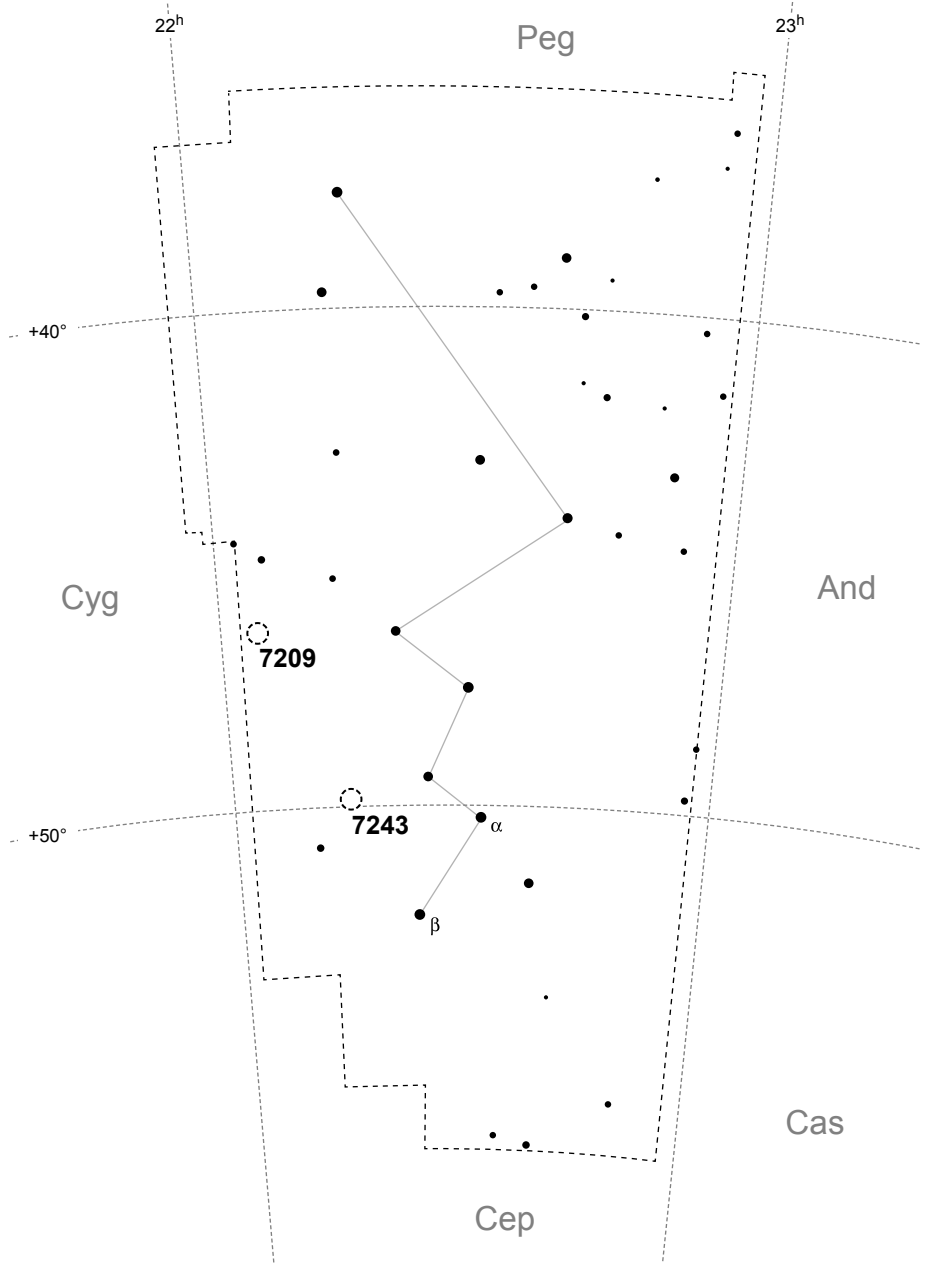
21<sup>h</sup>36<sup>m</sup>29<sup>s</sup> -54°33'24"

# Lacerta

The Lizard

Lac, Lacertae  
22<sup>h</sup>30<sup>m</sup>, +46°

Visibility: Early July through mid-November  
 Culmination: Oct 25 (21:00), Sep 10 (00:00), Jul 26 (03:00)  
 N★ 68  
 Origin: Johannes Hevelius (1690)



NGC 7209	22 <sup>h</sup> 05 <sup>m</sup> 18 <sup>s</sup> +46°29'	NGC 7243, C 16	22 <sup>h</sup> 15 <sup>m</sup> 06 <sup>s</sup> +49°54'

# Leo

The Lion

Leo, Leonis  
10<sup>h</sup>40<sup>m</sup>, +17°

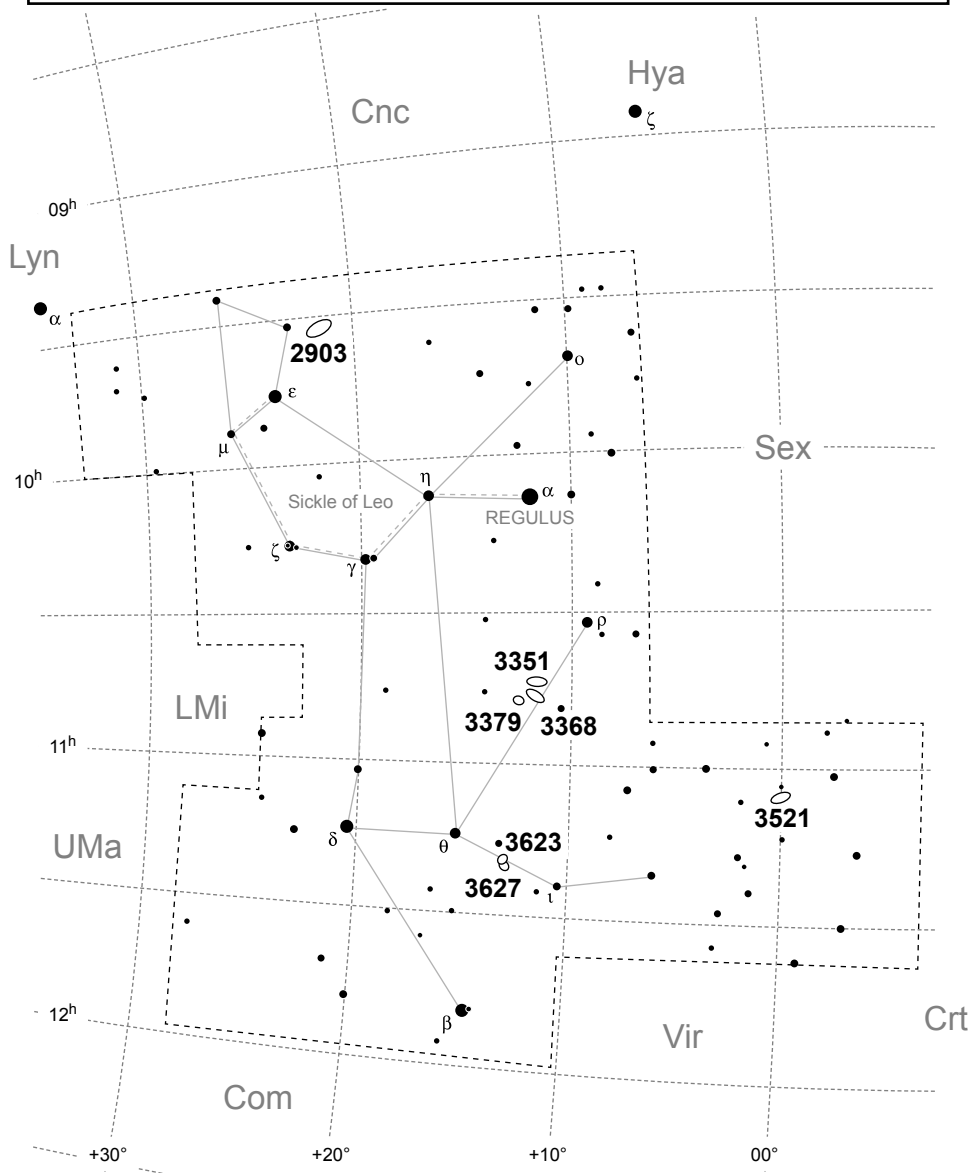


Visibility: Mid-November to mid-July (mid-Jan to May)  
Culmination: Apr 27 (21:00), Mar 13 (00:00), Jan 27 (03:00)



N★ 123

Origin: Ancient Greek (Ptolemy)



○ NGC 2903	09 <sup>h</sup> 32 <sup>m</sup> 10 <sup>s</sup> +21°30'03"	○ NGC 3521	11 <sup>h</sup> 05 <sup>m</sup> 49 <sup>s</sup> -00°02'06"
○ NGC 3351, M 95	10 <sup>h</sup> 43 <sup>m</sup> 58 <sup>s</sup> +11°42'13"	○ NGC 3623, M 65	11 <sup>h</sup> 18 <sup>m</sup> 56 <sup>s</sup> +13°05'32"
○ NGC 3368, M 96	10 <sup>h</sup> 46 <sup>m</sup> 46 <sup>s</sup> +11°49'10"	○ NGC 3627, M 66	11 <sup>h</sup> 20 <sup>m</sup> 15 <sup>s</sup> +12°59'22"
○ NGC 3379, M 105	10 <sup>h</sup> 47 <sup>m</sup> 50 <sup>s</sup> +12°34'55"		

# Leo Minor

The Lesser Lion

LMi, Leonis Minoris  
10<sup>h</sup>20<sup>m</sup>, +34°

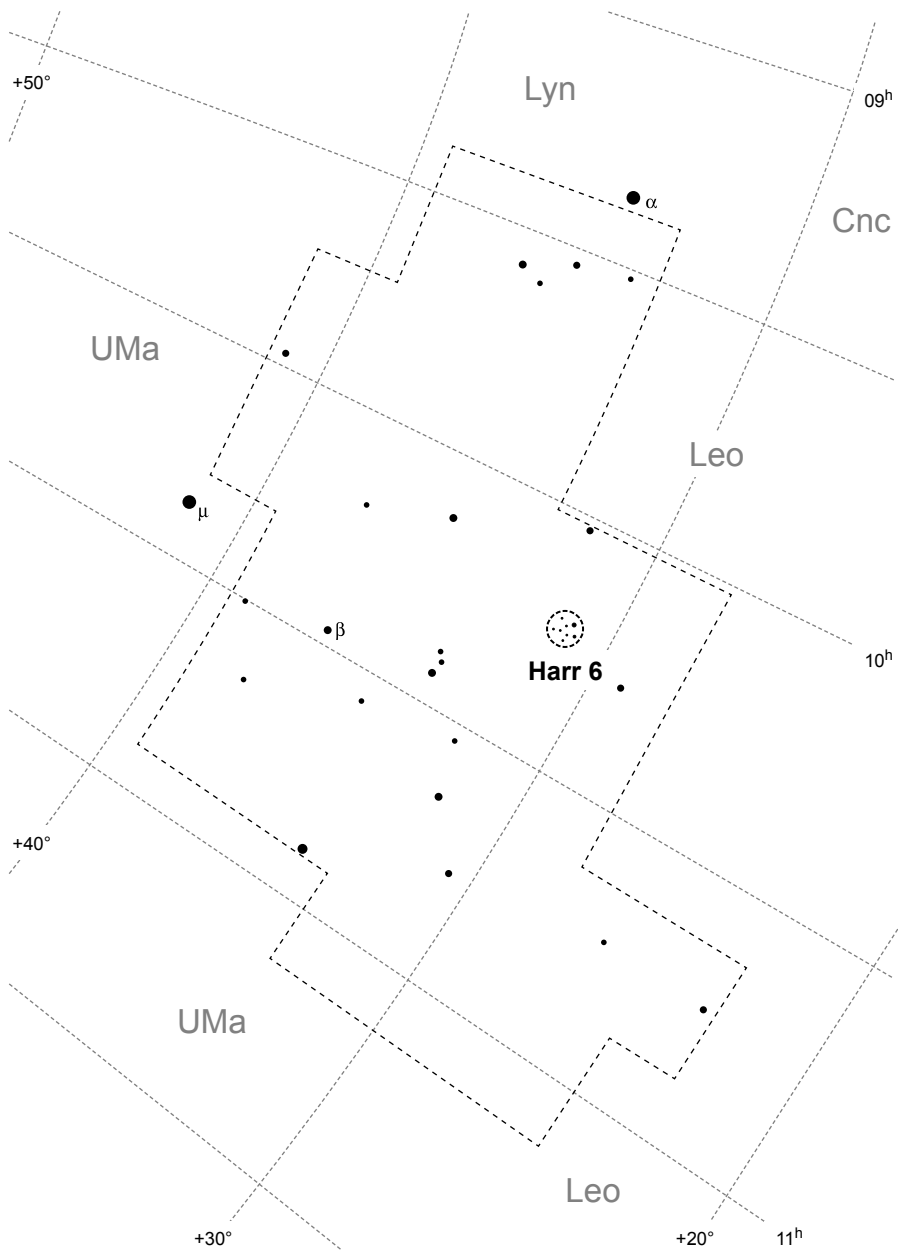


Visibility: Early December through early June  
Culmination: Apr 22 (21:00), Mar 08 (00:00), Jan 22 (03:00)



N★ 37

Origin: Johannes Hevelius (1690)



Harrington 6	10 <sup>h</sup> 10 <sup>m</sup>	+31°30′	

# Lepus

The Hare

Lep. Leporis  
05<sup>h</sup>35<sup>m</sup>, -20°



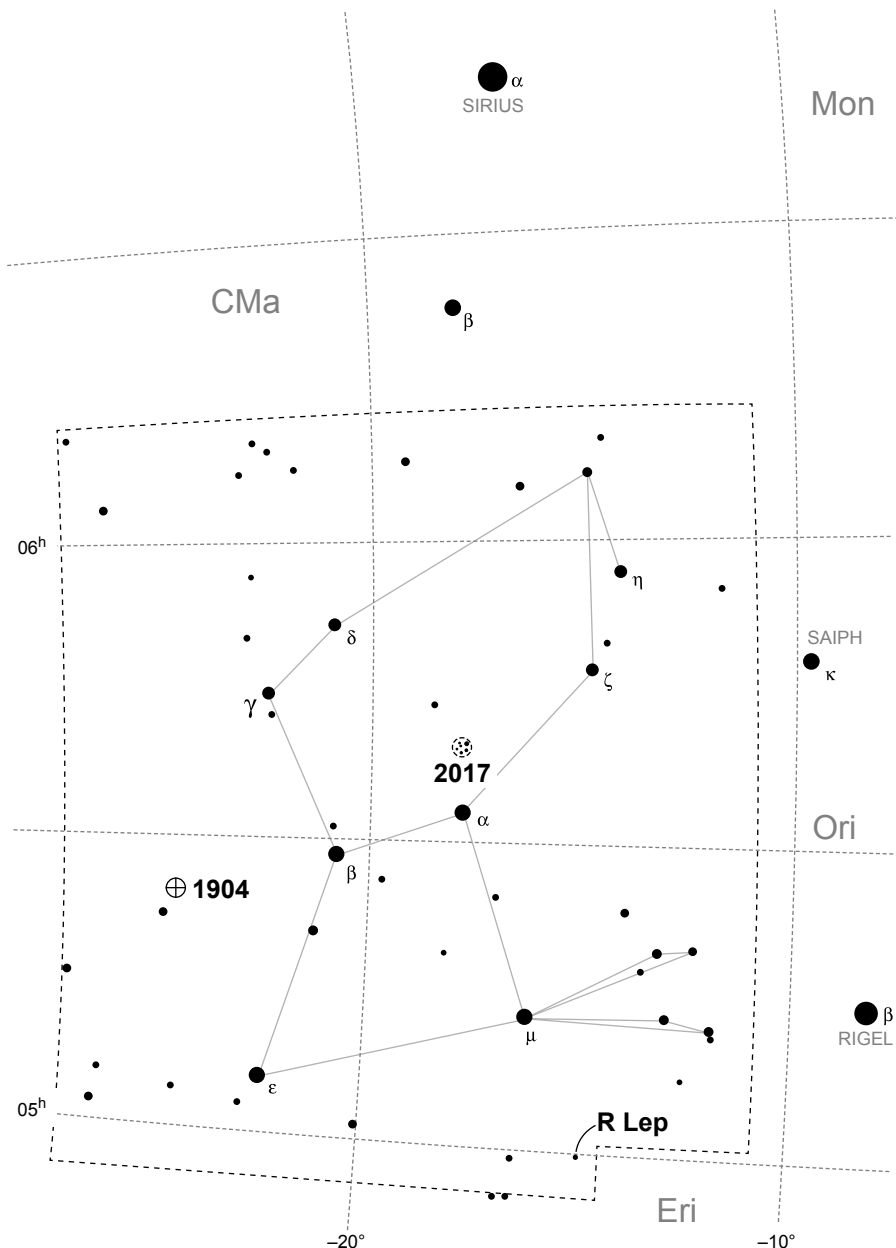
Visibility: Early August to mid-May (late Oct to late Feb)

Culmination: Feb 08 (21:00), Dec 26 (00:00), Nov 10 (03:00)



N★ 73

Origin: Ancient Greek (Ptolemy)



★ R Lep, HD 31996	04 <sup>h</sup> 59 <sup>m</sup> 36 <sup>s</sup> -14°48'23"	☼ NGC 2017	05 <sup>h</sup> 39 <sup>m</sup> 17 <sup>s</sup> -17°50'48"
⊕ NGC1904, M79, B 34, A 17	05 <sup>h</sup> 24 <sup>m</sup> 11 <sup>s</sup> -24°31'27"	★ gamma Lep, HD 38393	05 <sup>h</sup> 44 <sup>m</sup> 28 <sup>s</sup> -22°26'54"

# Libra

The Scales

Lib, Librae

15<sup>h</sup>15<sup>m</sup>, -16°

★
★
☆
☆
☆

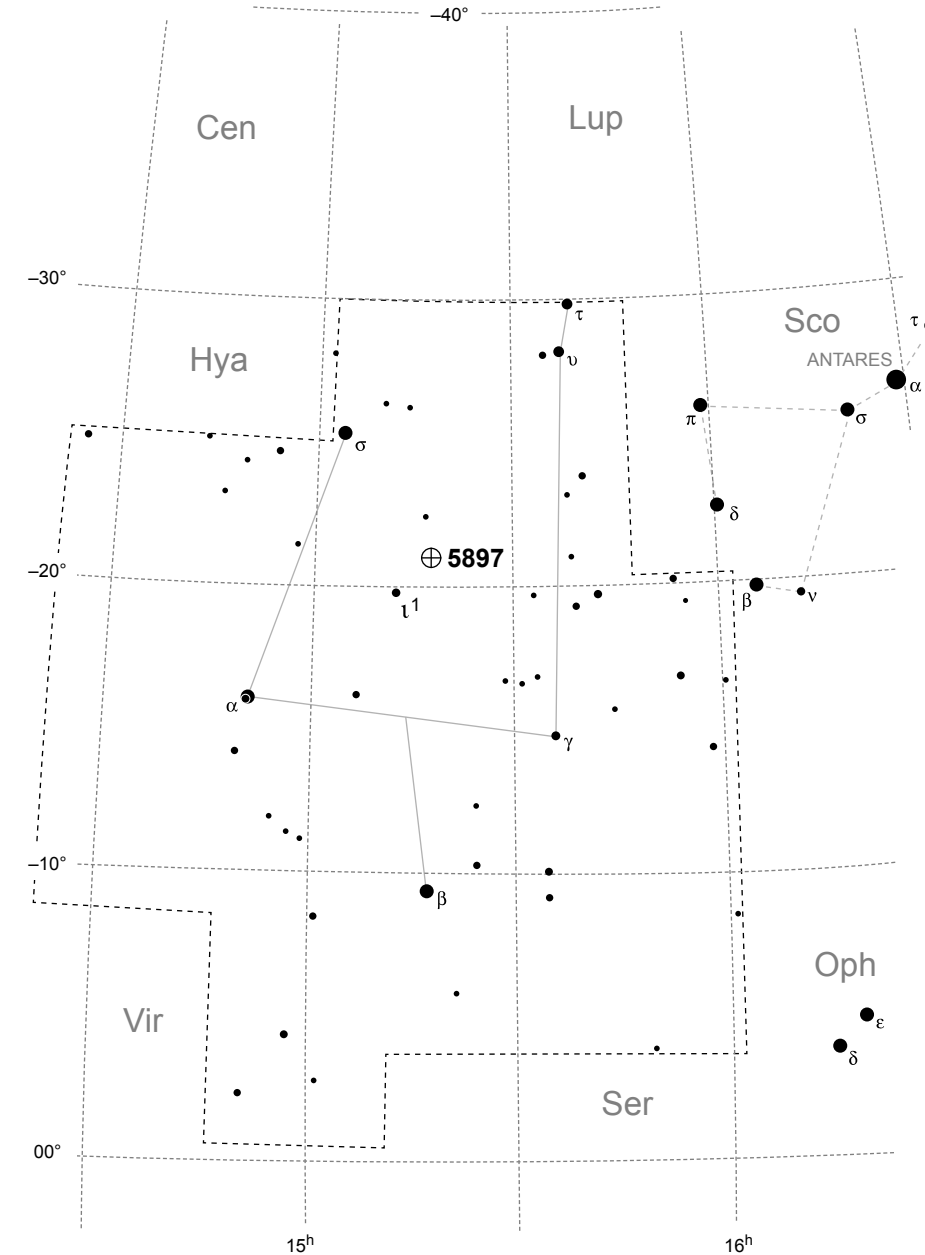
Visibility: Jan through mid-Oct (mid-Mar to late July)

Culmination: Jul 05 (21:00), May 22 (00:00), Apr 06 (03:00)

N★ 83

Origin: Ancient Greek (Ptolemy)

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🖐
🖐
🖐



<div> <span>★</span> <span>★</span> </div> iota-1 Lib, SAO 159090	15 <sup>h</sup> 12 <sup>m</sup> 13 <sup>s</sup> -19°47'30"	<div>⊕</div> NGC 5897, B 68	15 <sup>h</sup> 17 <sup>m</sup> 24 <sup>s</sup> -21°00'36"

# Lupus

The Wolf

Lup, Lupi  
15<sup>h</sup>15<sup>m</sup>, -44°

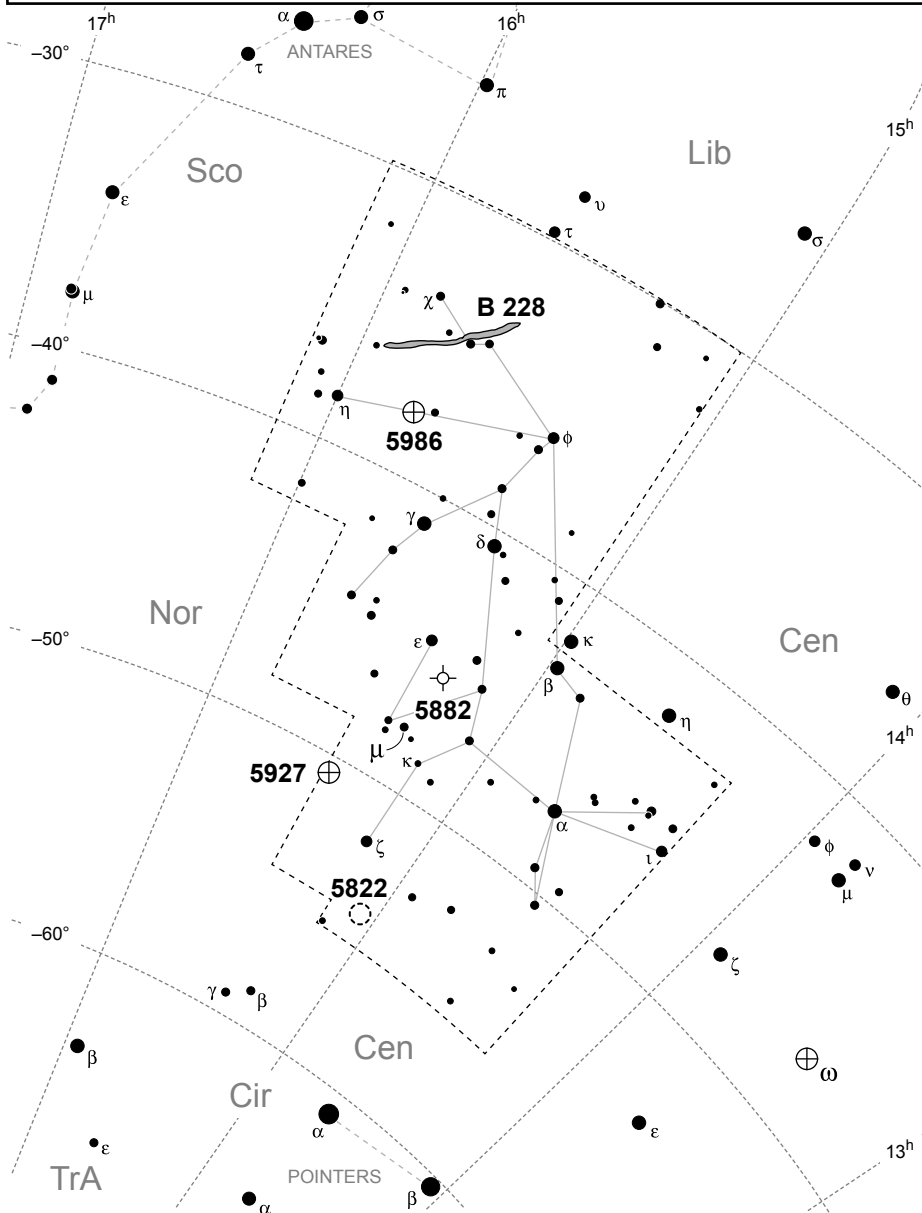


Visibility: Late Nov through Oct (early March to late July)  
Culmination: Jul 06 (21:00), May 22 (00:00), Apr 06 (03:00)



N★ 127

Origin: Ancient Greek (Ptolemy)



NGC 5822, A 62	15 <sup>h</sup> 04 <sup>m</sup> 24 <sup>s</sup> -54°24'	NGC 5927, B 69	15 <sup>h</sup> 28 <sup>m</sup> 01 <sup>s</sup> -50°40'22"
NGC 5882	15 <sup>h</sup> 16 <sup>m</sup> 50 <sup>s</sup> -45°38'58"	Barnard 228, A 64	15 <sup>h</sup> 44 <sup>m</sup> -34°30'
mu Lup, HD 135734	15 <sup>h</sup> 18 <sup>m</sup> 32 <sup>s</sup> -47°52'30"	NGC 5986, B 70	15 <sup>h</sup> 46 <sup>m</sup> 03 <sup>s</sup> -37°47'10"

# Lynx

The Lynx

Lyn, Lyncis  
07<sup>h</sup>40<sup>m</sup>, +48°

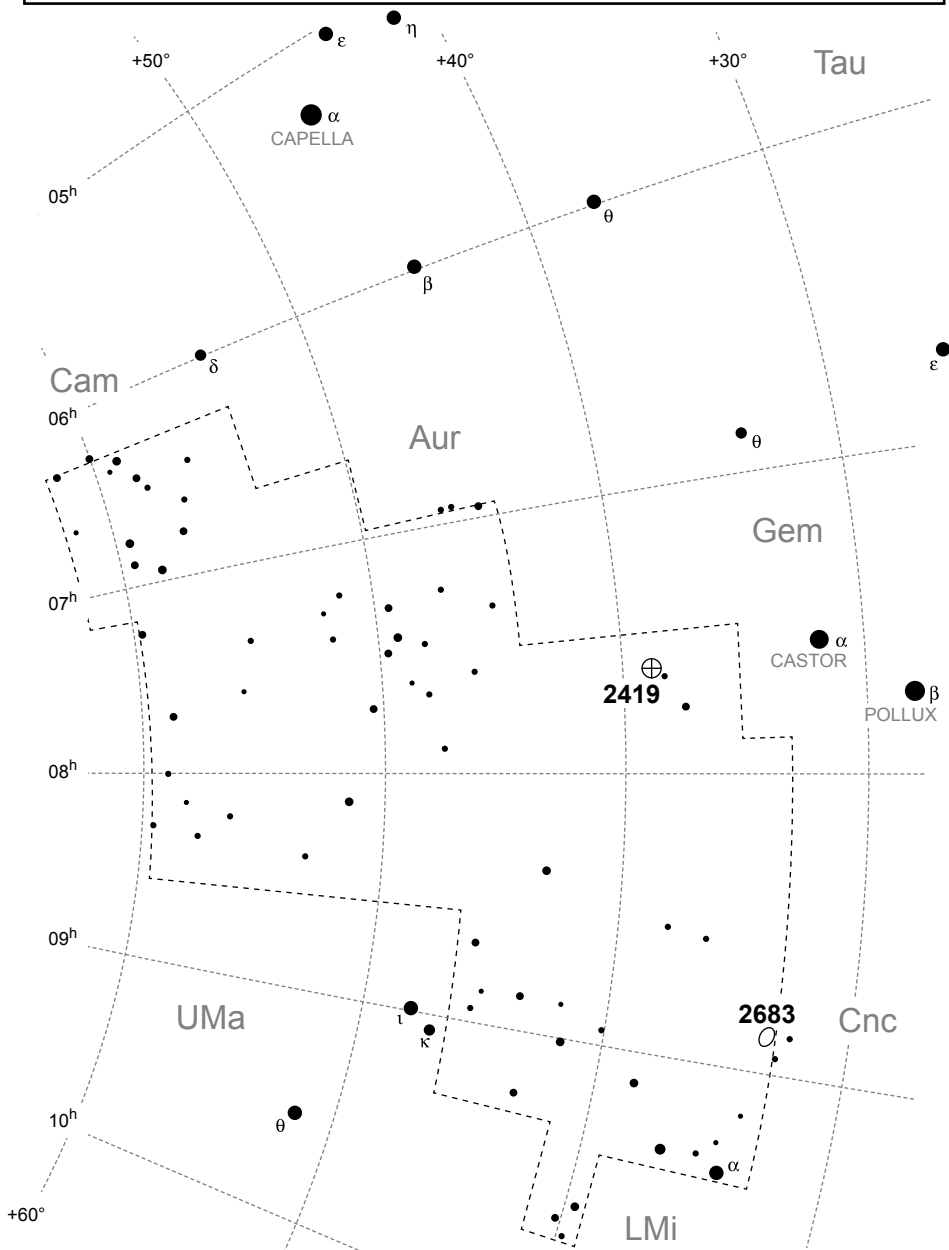


Visibility: Late November through late April  
Culmination: Mar 13 (21:00), Jan 27 (00:00), Dec 13 (03:00)



N★ 97

Origin: Johannes Hevelius (1690)



⊕ NGC 2419, C 25

07<sup>h</sup>38<sup>m</sup>09<sup>s</sup> +38°52'55"

○ NGC 2683

08<sup>h</sup>52<sup>m</sup>42<sup>s</sup> +33°25'10"



# Lyra

The Lyre

Lyr, Lyrae  
18<sup>h</sup>50<sup>m</sup>, +36°

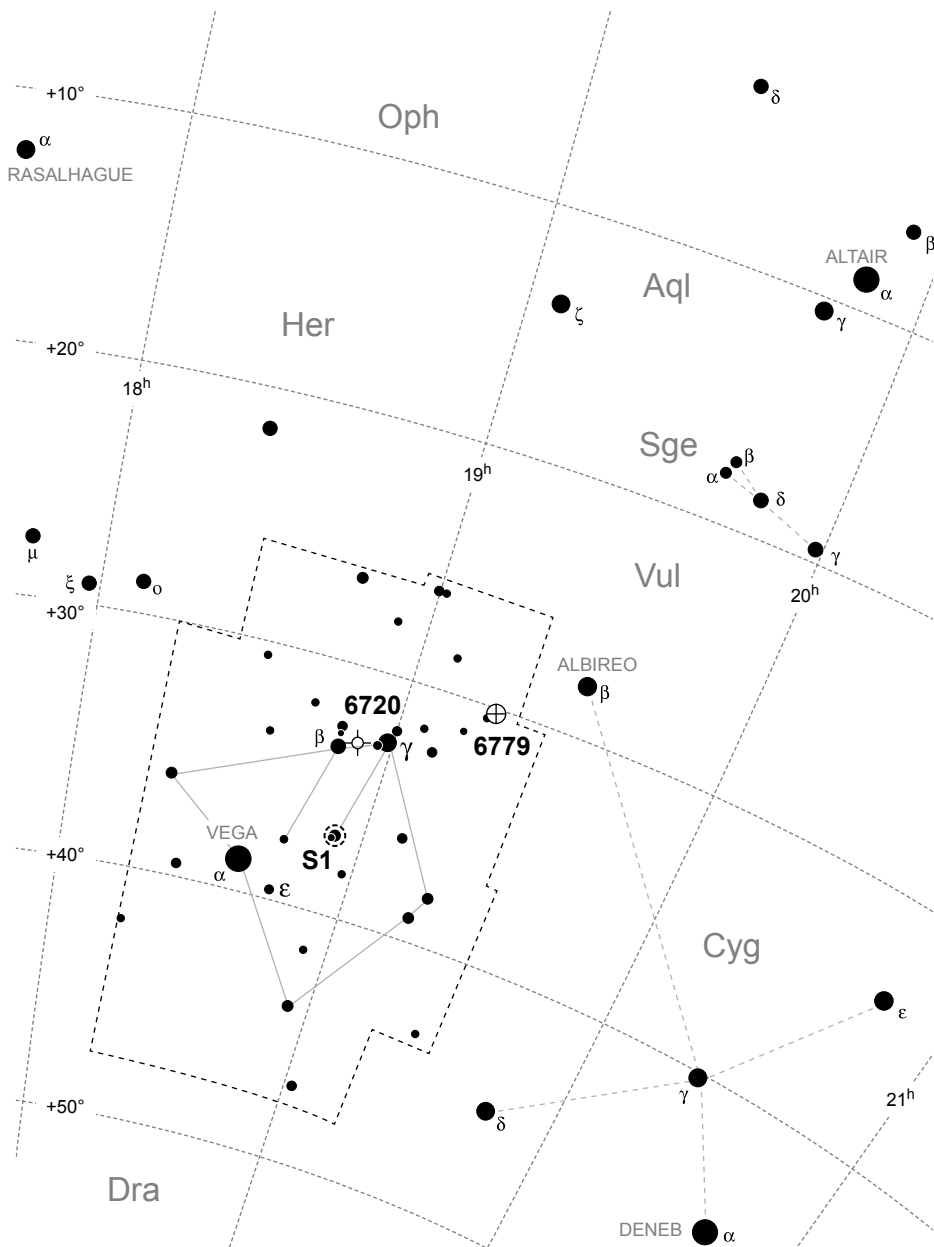


Visibility: mid-April through mid-October  
Culmination: Aug 29 (21:00), Jul 15 (00:00), May 30 (03:00)



N★ 73

Origin: Ancient Greek (Ptolemy)



✳ epsilon Lyrae	18 <sup>h</sup> 44 <sup>m</sup> 20 <sup>s</sup> +39°40'12"	⊕ NGC 6720, Ring Neb., M 57	18 <sup>h</sup> 53 <sup>m</sup> 35 <sup>s</sup> +33°01'45"
⊙ Stephenson 1	18 <sup>h</sup> 53 <sup>m</sup> 30 <sup>s</sup> +36 55'	⊕ NGC 6779, M 56	19 <sup>h</sup> 16 <sup>m</sup> 36 <sup>s</sup> +30°11'04"

# Mensa

Men, Mensae  
05°25', -79°

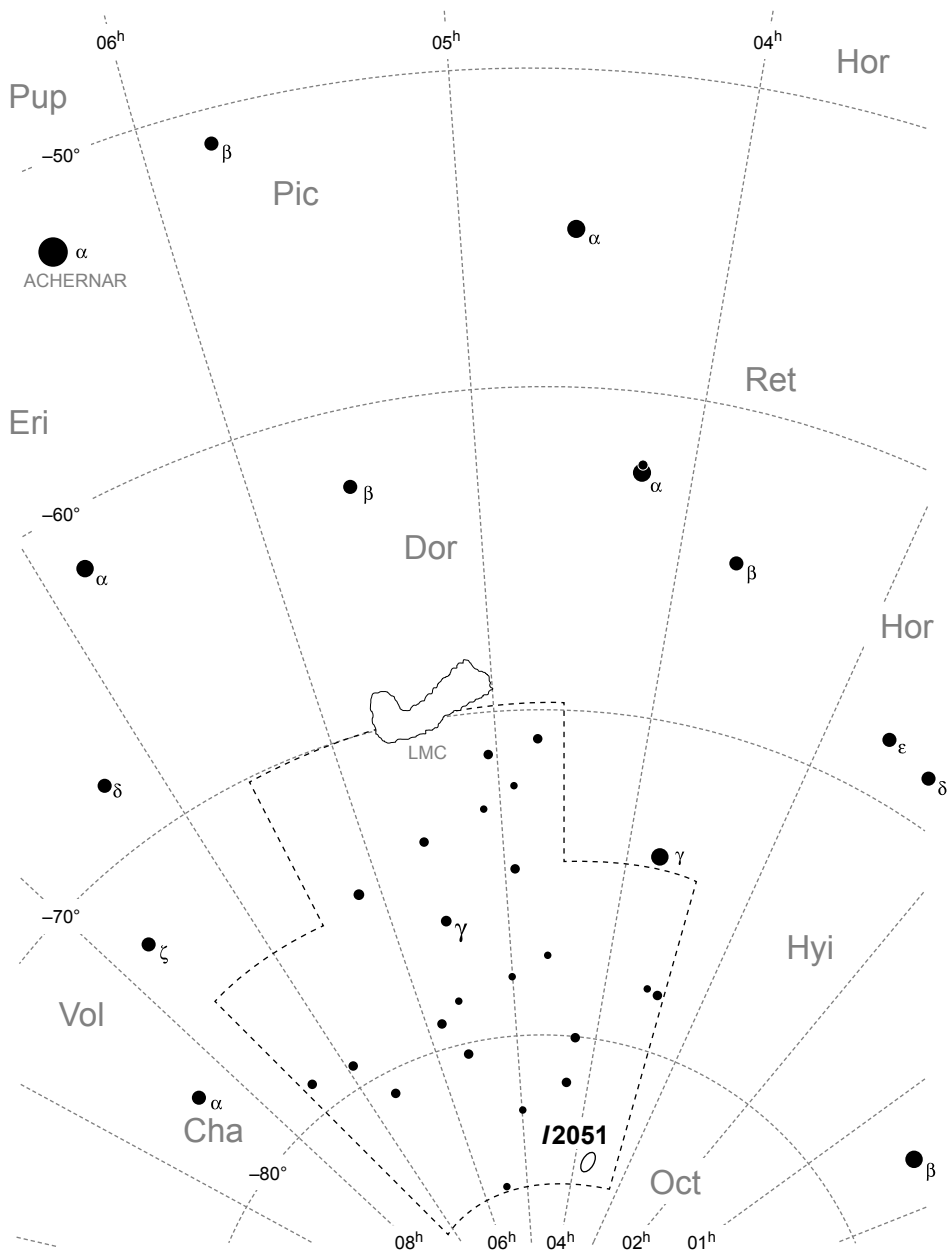
Visibility: Year-round; best October to late-March  
Culmination: Feb 06 (21:00), Dec 23 (00:00), Nov 08 (03:00)

Table Mountain (in Cape Town)



N★ 22

Origin: La Caille (1752)



IC 2051	03 <sup>h</sup> 52 <sup>m</sup> 02 <sup>s</sup> -83°49'56"	☆ gamma Men, HD 37763	05 <sup>h</sup> 31 <sup>m</sup> 53 <sup>s</sup> -76°20'30"

# Microscopium

The Microscope

Mic, Microscopii  
20<sup>h</sup>55<sup>m</sup>, -37°

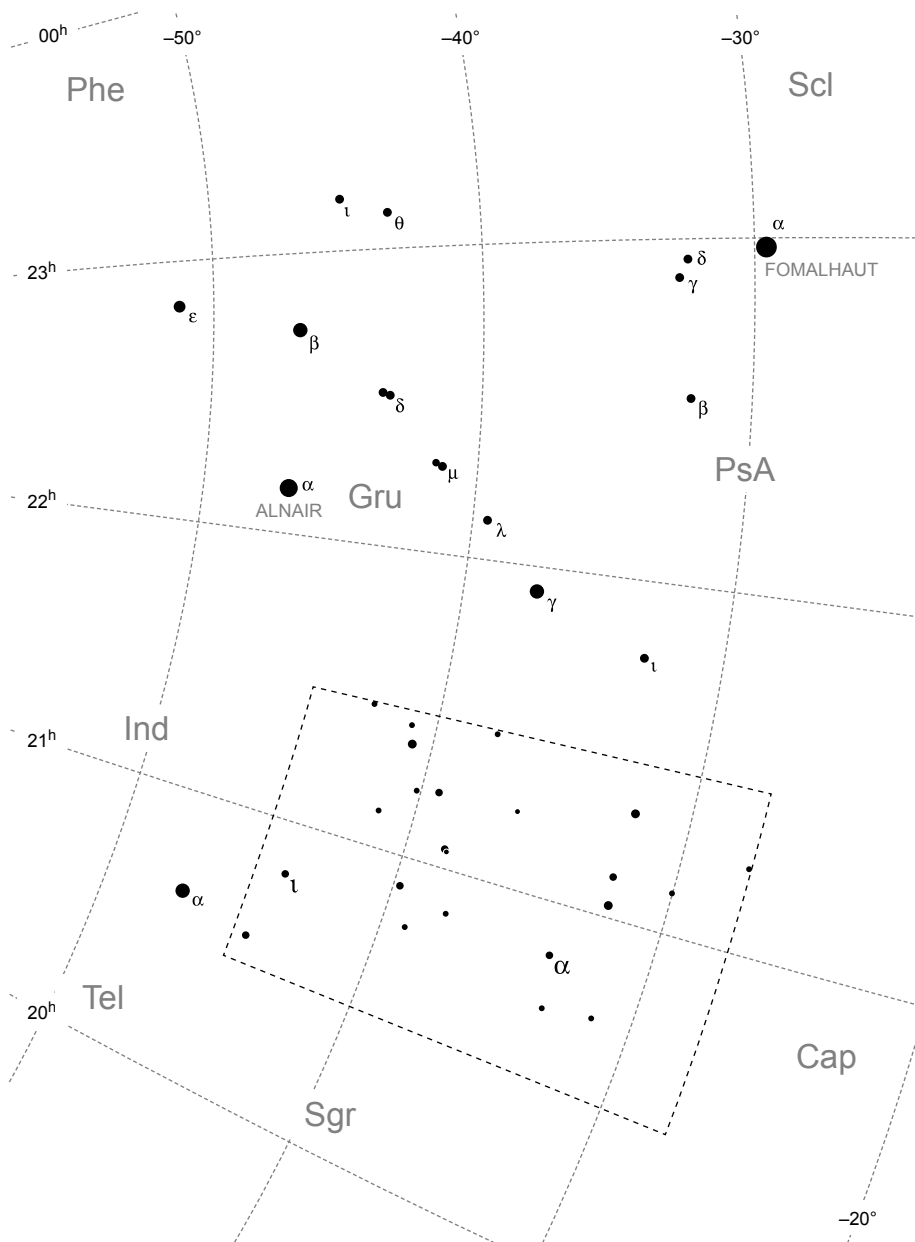


Visibility: Mid-Mar to mid-Jan (mid Jun to mid Oct)  
Culmination: Oct 01 (21:00), Aug 17 (00:00), Jul 02 (03:00)



N★ 43

Origin: La Caille (1752)



★ ★ iota Mic, SAO 230379	20 <sup>h</sup> 48 <sup>m</sup> 29 <sup>s</sup> -43°59'19"	★ ★ alpha Mic, SAO 212472	20 <sup>h</sup> 49 <sup>m</sup> 58 <sup>s</sup> -33°46'47"

# Monoceros

The Unicorn

Mon, Monocerotis  
06<sup>h</sup>50<sup>m</sup>, -03°

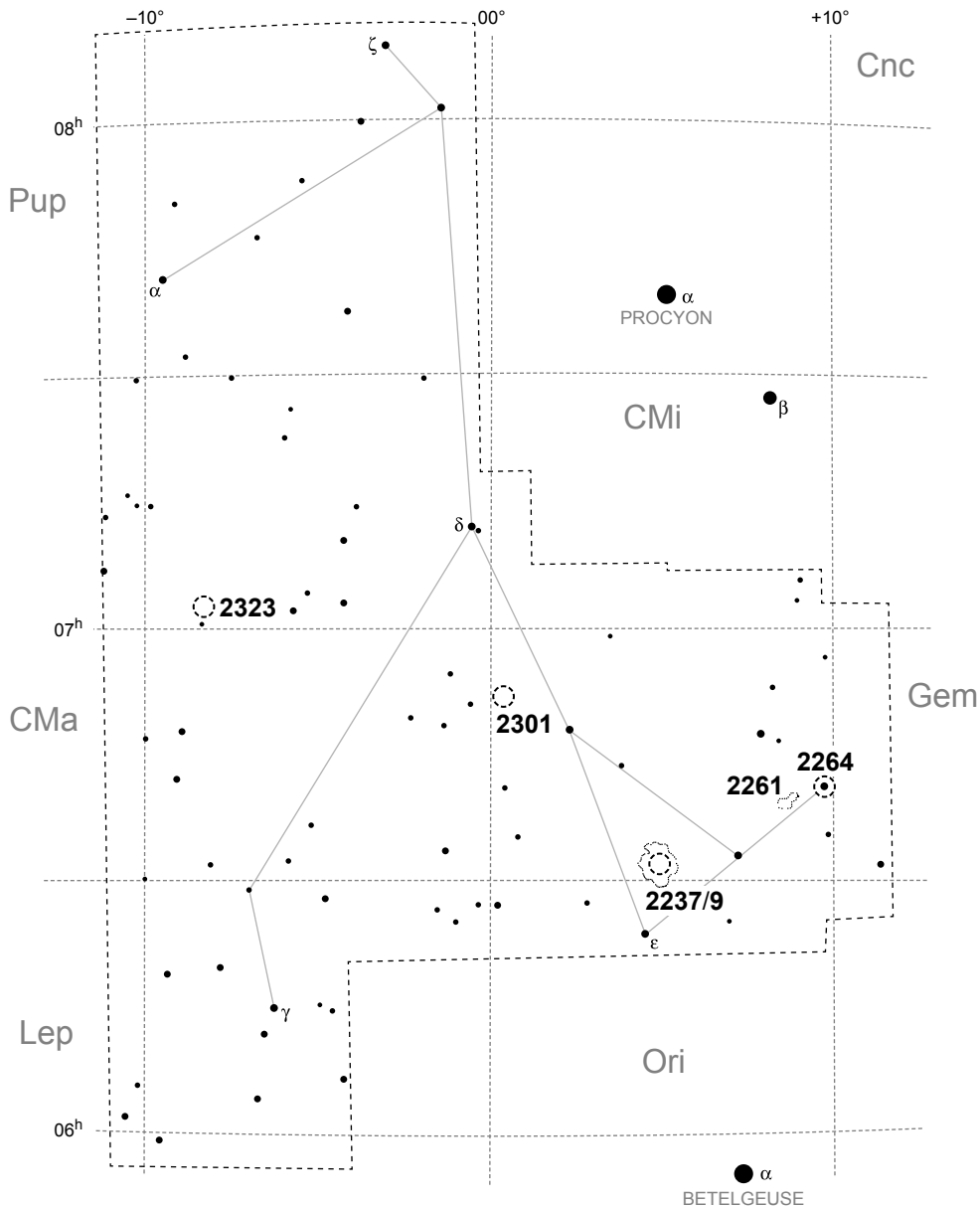


Visibility: September to late May (Nov to mid-Mar)  
Culmination: Feb 28 (21:00), Jan 14 (00:00), Nov 29 (03:00)



N★ 138

Origin: Petrus Plancius (1592)



NGC 2237, Rosette, C 49	06 <sup>h</sup> 30 <sup>m</sup> 55 <sup>s</sup> +05°02'57"	NGC 2264, Christmas Tree	06 <sup>h</sup> 41 <sup>m</sup> 00 <sup>s</sup> +09°53'00"
NCG 2239/2244, C 50	06 <sup>h</sup> 31 <sup>m</sup> 56 <sup>s</sup> +04°56'35"	NGC 2301, Great Bird Cl.	06 <sup>h</sup> 51 <sup>m</sup> 48 <sup>s</sup> +00°28'00"
NGC 2261, C 46	06 <sup>h</sup> 39 <sup>m</sup> 10 <sup>s</sup> +08°44'11"	NGC 2323, M 50	07 <sup>h</sup> 02 <sup>m</sup> 48 <sup>s</sup> -08°22'36"

# Musca

The Fly

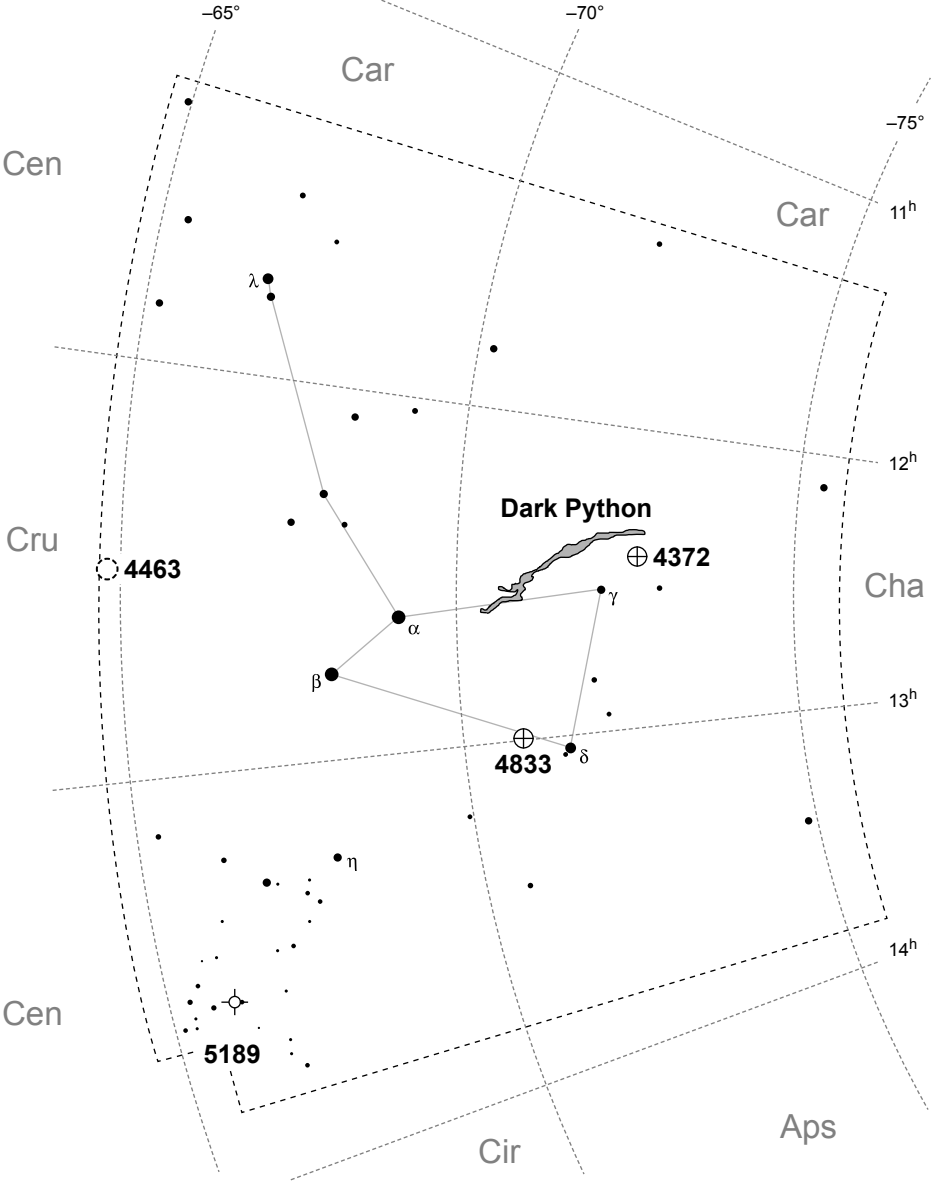
Mus, Muscae

12°30'N, -71°E

★
★
★
★
★

Visibility: Year-round; best January to mid-June  
 Culmination: May 25 (21:00), Apr 10 (00:00), Feb 23 (03:00)  
 N★ 62  
 Origin: Keyser & de Houtman (1597)

✋
✋
✋
✋
✋



⊕ NGC 4372, C 108, B 50	12 <sup>h</sup> 25 <sup>m</sup> 45 <sup>s</sup> -72°39'33"	⊕ NGC 4833, C 105, A 53	12 <sup>h</sup> 59 <sup>m</sup> 35 <sup>s</sup> -70°52'29"
🐍 Dark Python, A 49	12 <sup>h</sup> 27 <sup>m</sup> 31 <sup>s</sup> -71°25'12"	⊖ NGC 5189, B 62, A 57	13 <sup>h</sup> 33 <sup>m</sup> 33 <sup>s</sup> -65°58'27"
○ NGC 4463	12 <sup>h</sup> 30 <sup>m</sup> 00 <sup>s</sup> -64°47'00"		

# Norma

The Carpenter's Level & Square

Nor, Normae  
16°00′, −51°

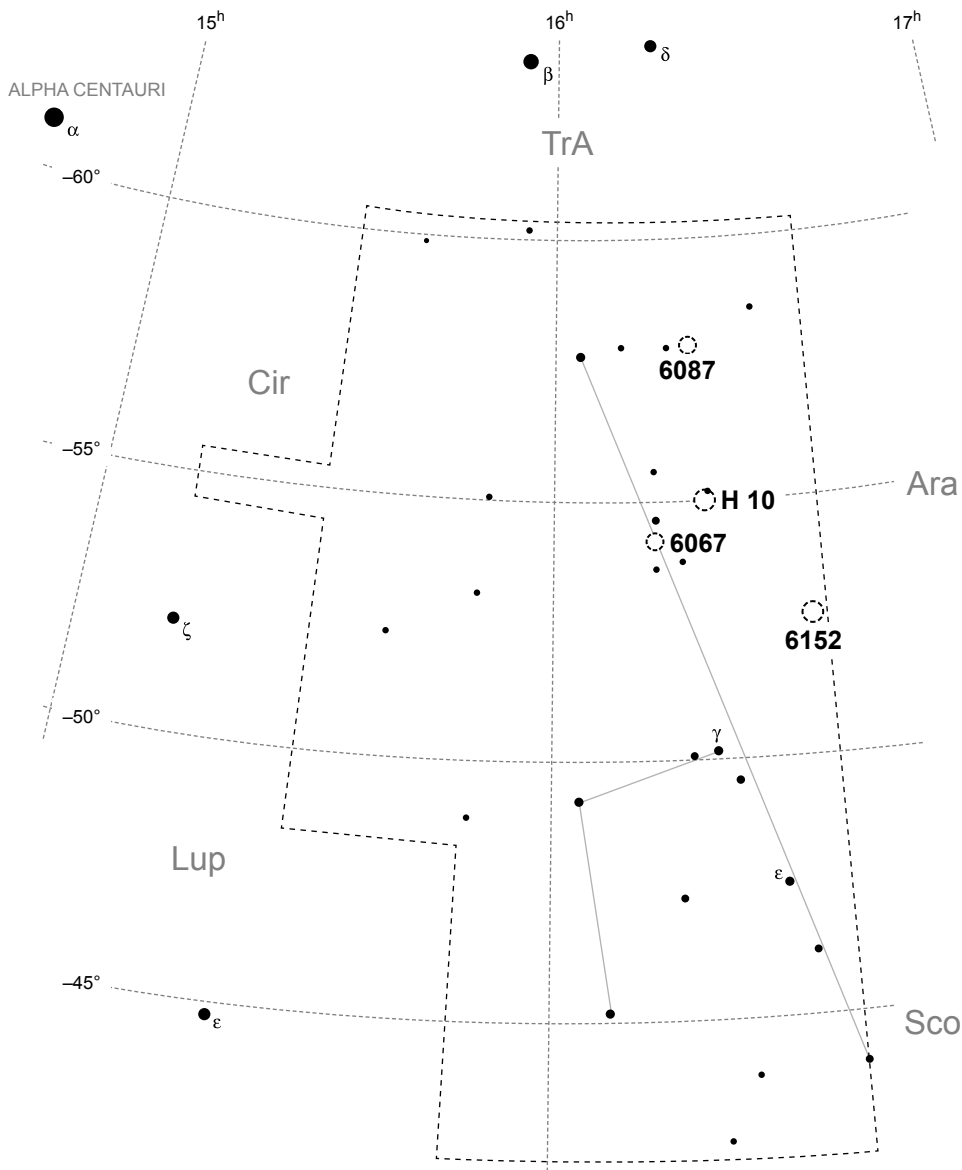


Visibility: Year-round; best mid-March to mid-August  
Culmination: Jul 18 (21:00), Jun 03 (00:00), Apr 19 (03:00)



N★ 44

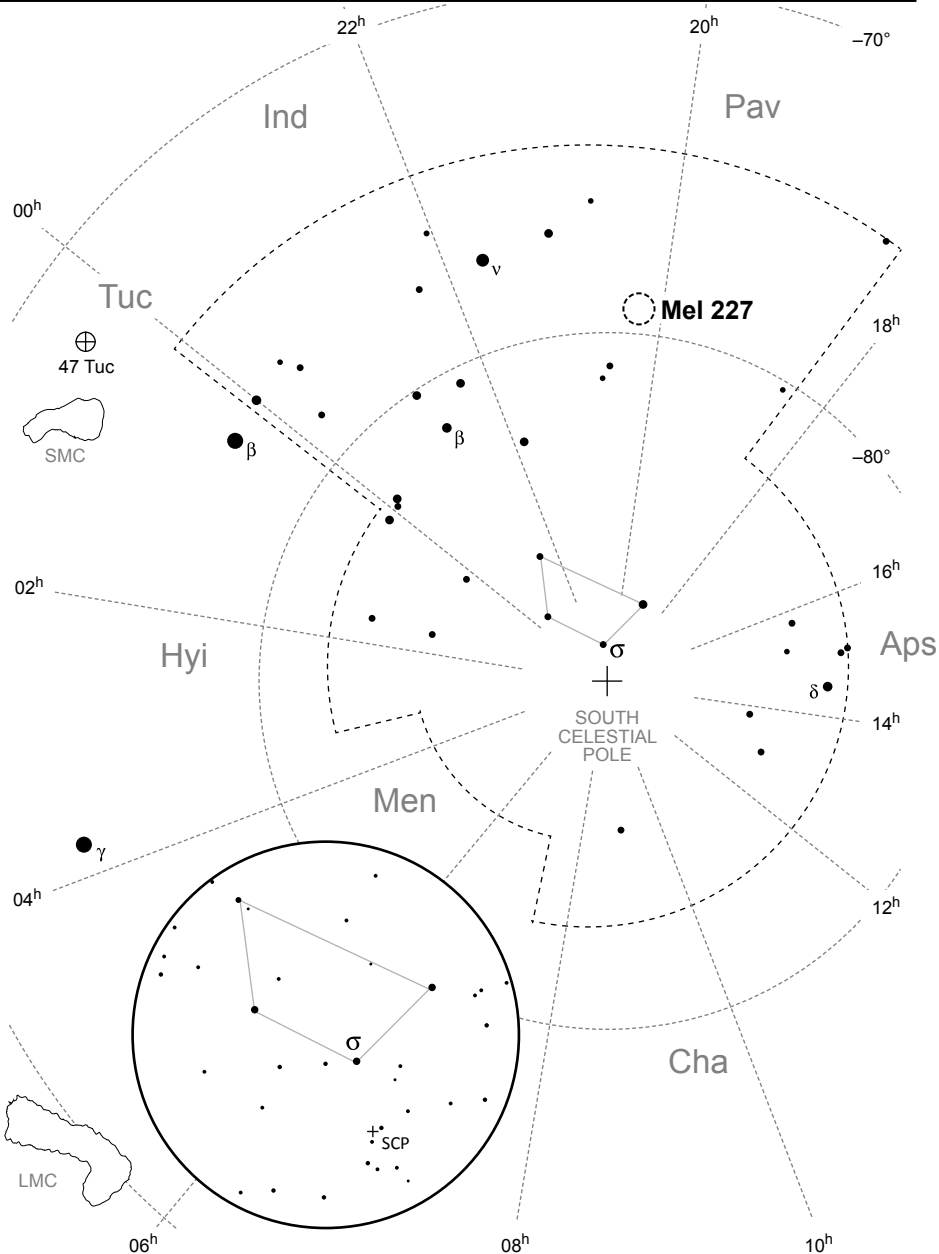
Origin: La Caille (1752)



○ NGC 6067, C 89, A 66	16 <sup>h</sup> 13 <sup>m</sup> 12 <sup>s</sup> −54°13′00″	○ NGC 6152	16 <sup>h</sup> 32 <sup>m</sup> 42 <sup>s</sup> −52°38′00″
○ NGC 6087, A 67	16 <sup>h</sup> 18 <sup>m</sup> 48 <sup>s</sup> −57°56′00″		
○ Harvard 10	16 <sup>h</sup> 18 <sup>m</sup> 48 <sup>s</sup> −54°56′00″		

## The Octant

N★ 60  
Origin: La Caille (1752)



☉ Melotte 227, A 97	20 <sup>h</sup> 12 <sup>m</sup> 06 <sup>s</sup> –79°19'	✳ sigma Oct, Polaris Australis	21 <sup>h</sup> 08 <sup>m</sup> 46 <sup>s</sup> –88°57'23"
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# Ophiuchus

The Serpent Bearer

Oph, Ophiuchi  
16<sup>h</sup>55<sup>m</sup>, -06°

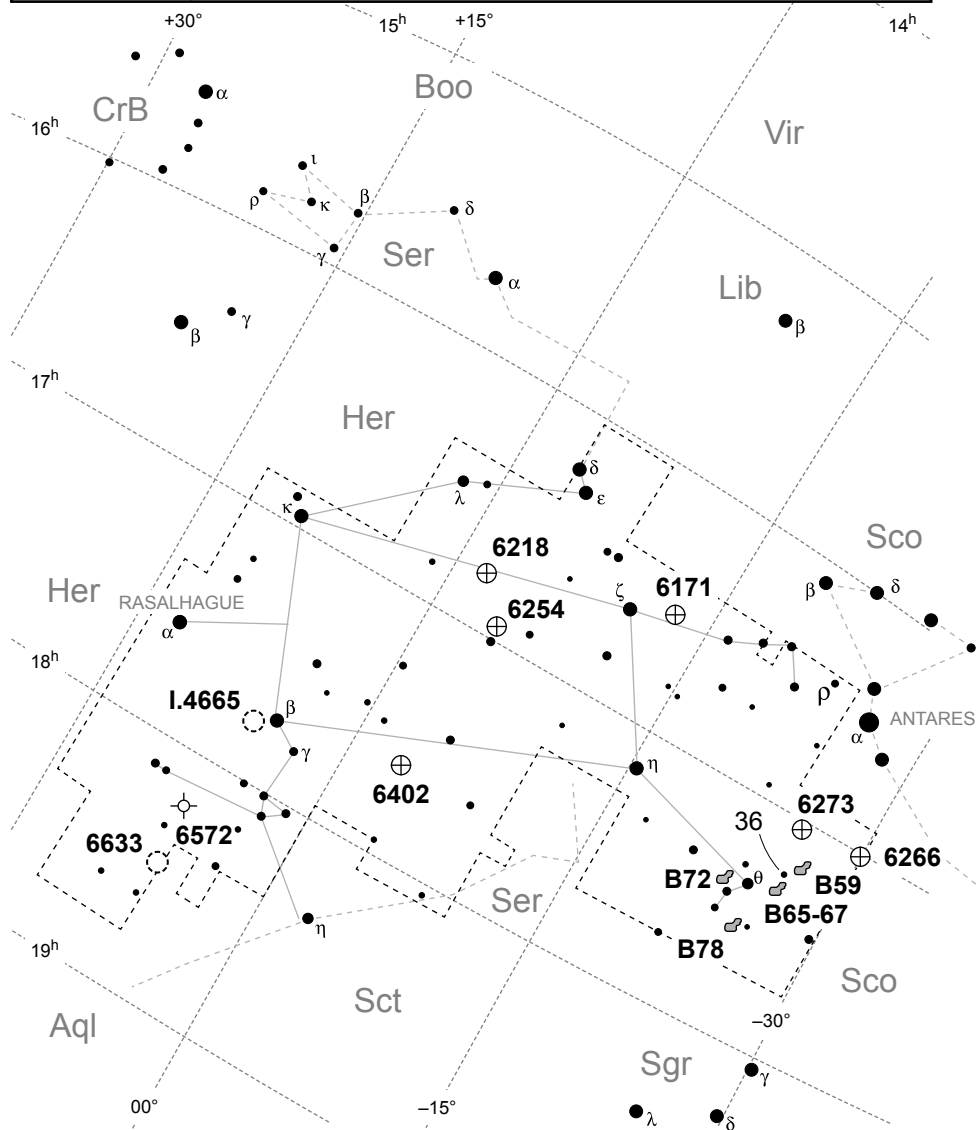


Visibility: Feb to mid-Nov (best early Apr to late Aug)  
Culmination: Jul 31 (21:00), Jun 17 (00:00), May 02 (03:00)



N★ 174

Origin: Ancient Greek (Ptolemy)



★ rho Oph	16 <sup>h</sup> 25 <sup>m</sup> 35 <sup>s</sup> -23°26'50"	♂ Barnard 59	17 <sup>h</sup> 11 <sup>m</sup> 06 <sup>s</sup> -27°24'	♂ Barnard 78	17 <sup>h</sup> 32 <sup>m</sup> 00 <sup>s</sup> -25°35'
⊕ NGC 6171	16 <sup>h</sup> 32 <sup>m</sup> 32 <sup>s</sup> -13°03'13"	★ 36 Oph	17 <sup>h</sup> 15 <sup>m</sup> 21 <sup>s</sup> -26°36'10"	⊕ NGC 6402	17 <sup>h</sup> 37 <sup>m</sup> 36 <sup>s</sup> -03°14'45"
⊕ NGC 6218	16 <sup>h</sup> 47 <sup>m</sup> 15 <sup>s</sup> -01°56'52"	♂ Barnard 65	17 <sup>h</sup> 19 <sup>m</sup> 48 <sup>s</sup> -26°38'	⊙ IC 4665	17 <sup>h</sup> 46 <sup>m</sup> 18 <sup>s</sup> +05°43'
⊕ NGC 6254	16 <sup>h</sup> 57 <sup>m</sup> 09 <sup>s</sup> -04°05'58"	♂ Barnard 66	17 <sup>h</sup> 20 <sup>m</sup> 06 <sup>s</sup> -26°52'	⊙ NGC 6572	18 <sup>h</sup> 12 <sup>m</sup> 06 <sup>s</sup> -26°16'05"
⊕ NGC 6266	17 <sup>h</sup> 01 <sup>m</sup> 13 <sup>s</sup> -30°06'45"	♂ Barnard 67	17 <sup>h</sup> 22 <sup>m</sup> 30 <sup>s</sup> -21°53'	⊙ NGC 6633	18 <sup>h</sup> 27 <sup>m</sup> 31 <sup>s</sup> +06°34'12"
⊕ NGC 6273	17 <sup>h</sup> 02 <sup>m</sup> 38 <sup>s</sup> -26°16'05"	♂ Barnard 72	17 <sup>h</sup> 23 <sup>m</sup> 35 <sup>s</sup> -23°37'		



# Orion

Orion the Hunter/Giant

Ori, Orionis  
05<sup>h</sup>35<sup>m</sup>, +03°

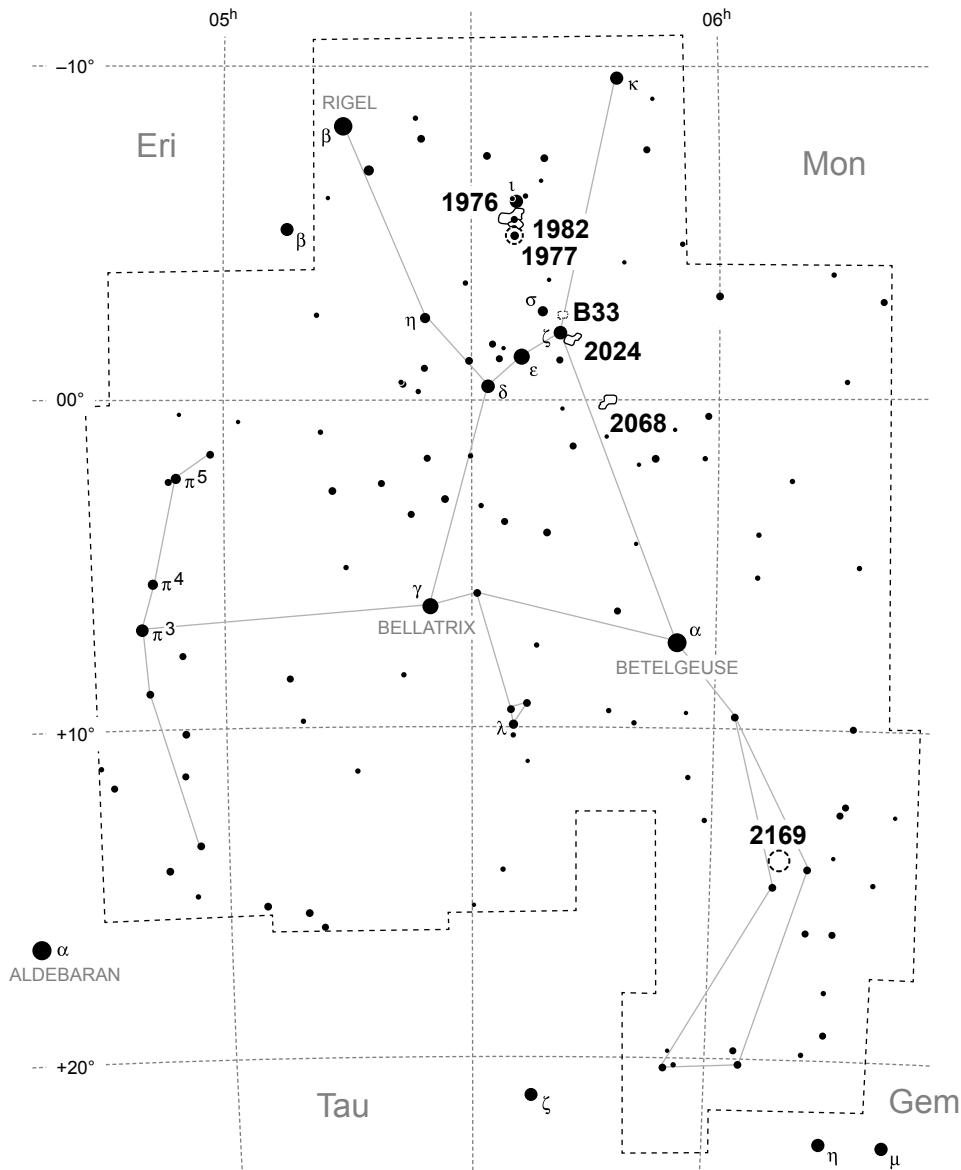


Visibility: Mid-August to late April (mid-Oct to mid-Mar)  
Culmination: Feb 09 (21:00), Dec 26 (00:00), Nov 11 (03:00)



N★ 204

Origin: Ancient Greek (Ptolemy)



NGC 1977, A 19	05 <sup>h</sup> 35 <sup>m</sup> 15 <sup>s</sup> -04°53'12"	NGC 2024, Flame Nebula	05 <sup>h</sup> 41 <sup>m</sup> 43 <sup>s</sup> -01°50'30"
NGC 1976, Orion Neb, M 42	05 <sup>h</sup> 35 <sup>m</sup> 17 <sup>s</sup> -05°23'28"	NGC 2068, M 78	05 <sup>h</sup> 46 <sup>m</sup> 45 <sup>s</sup> +00°03'43"
NGC 1982, M 43	05 <sup>h</sup> 35 <sup>m</sup> 31 <sup>s</sup> -05°16'12"	NGC 2169, "37" Cluster	06 <sup>h</sup> 08 <sup>m</sup> 33 <sup>s</sup> +13°57'57"
B 33, Horse Head Nebula	05 <sup>h</sup> 40 <sup>m</sup> 59 <sup>s</sup> -02°27'30"		

# Pavo

The Peacock

Pav, Pavonis  
19<sup>h</sup>20<sup>m</sup>, -66°

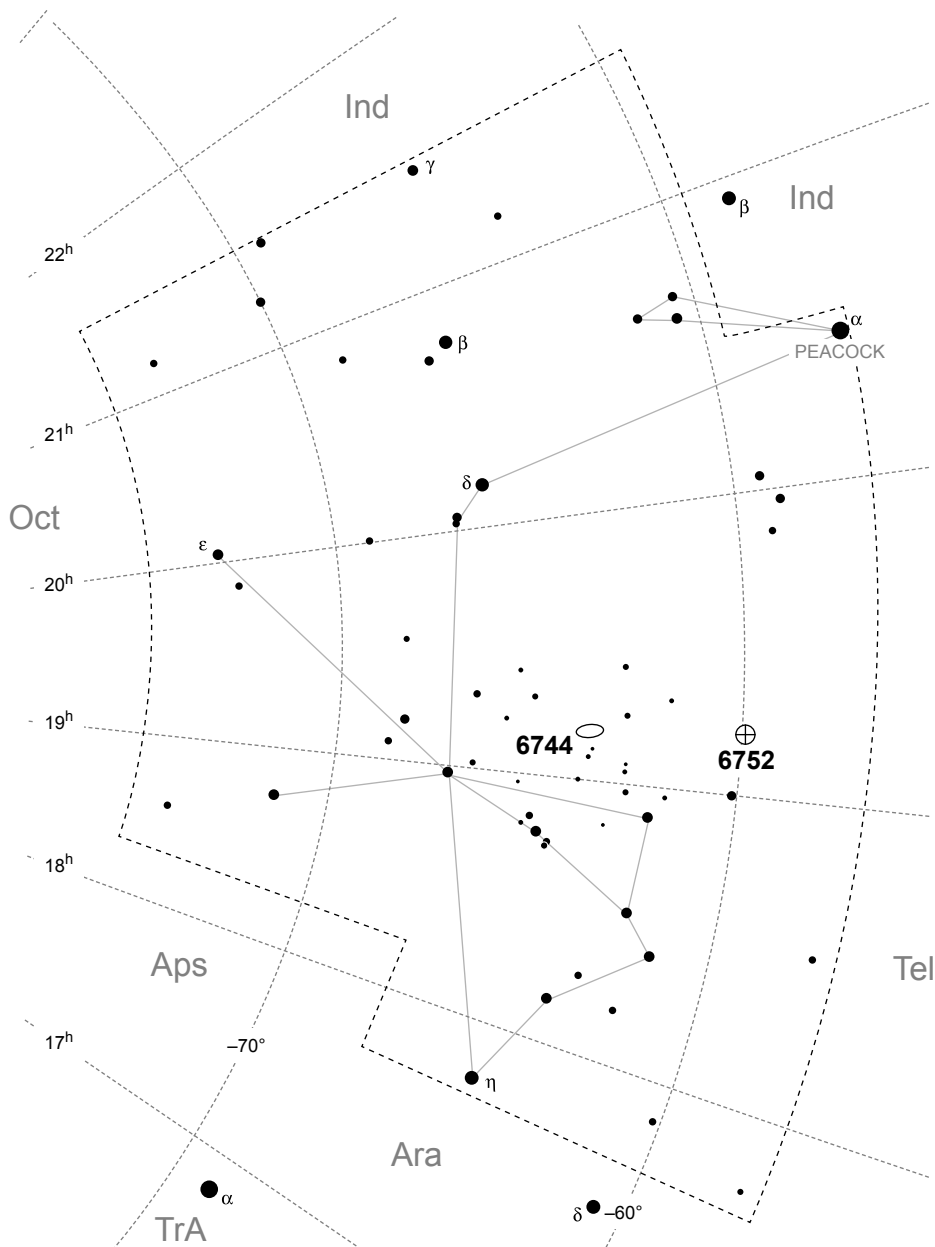



Visibility: Year-round; best May to mid-September  
Culmination: Sep 06 (21:00), Jul 23 (00:00), Jun 07 (03:00)




N★ 87

Origin: Keyser & de Houtman (1597)



 NGC 6744, C 101, A 94

19<sup>h</sup>09<sup>m</sup>45<sup>s</sup> -63°51'21"

 NGC 6752, C 93, A 95

19<sup>h</sup>10<sup>m</sup>52<sup>s</sup> -59°58'55"

# Pegasus

The Winged Horse

Peg, Pegasi  
22<sup>h</sup>30<sup>m</sup>, +19°

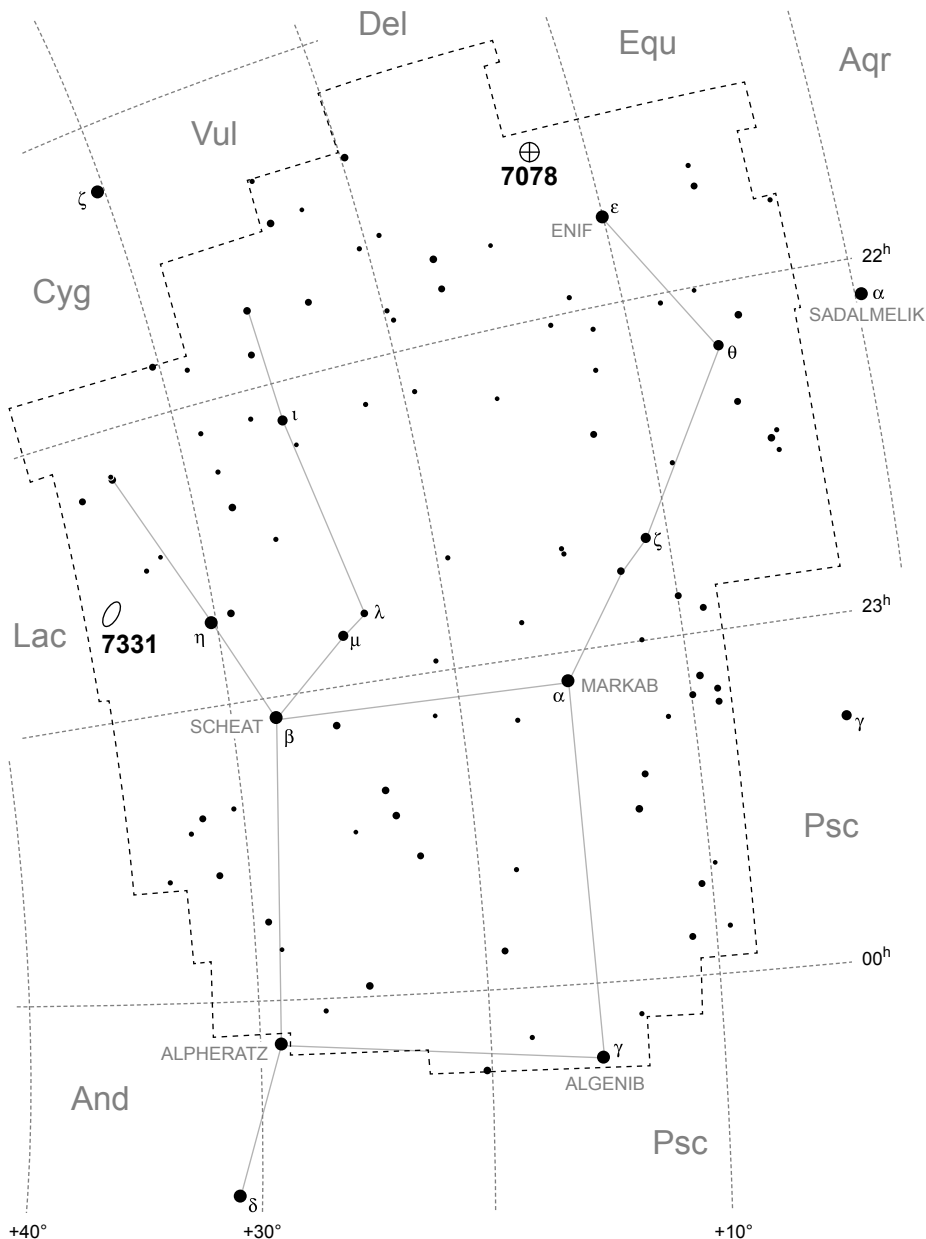


Visibility: Early May to late December  
Culmination: Oct 24 (21:00), Sep 09 (00:00), Jul 25 (03:00)



N ★ 177

Origin: Ancient Greek (Ptolemy)



⊕ NGC 7078, M 15	21 <sup>h</sup> 29 <sup>m</sup> 58 <sup>s</sup> +12°10'01"	○ NGC 7331, C 30	22 <sup>h</sup> 36 <sup>m</sup> 34 <sup>s</sup> +34°30'07"

# Perseus

Perseus the Hero, son of Zeus

Per, Persei  
03<sup>h</sup>30<sup>m</sup>, +44°

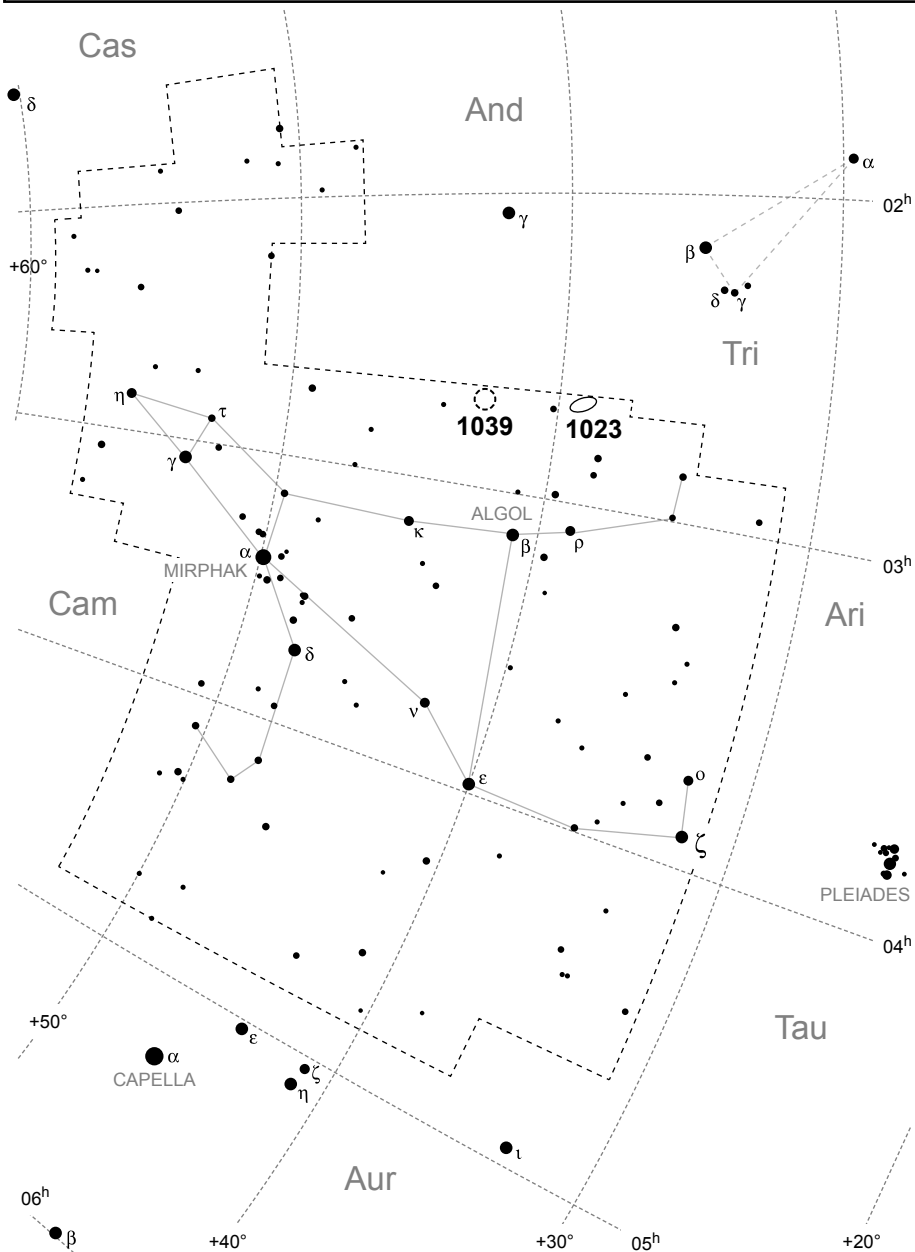


Visibility: Mid-September to mid-February  
Culmination: Jan 08 (21:00), Nov 25 (00:00), Oct 10 (03:00)



N ★ 158

Origin: Ancient Greek (Ptolemy)



NGC 1023	02 <sup>h</sup> 40 <sup>m</sup> 24 <sup>s</sup> +39°03'46"	zeta Per, HD 24398	03 <sup>h</sup> 54 <sup>m</sup> 08 <sup>s</sup> +31°53'01"
NGC 1039, M 34	02 <sup>h</sup> 42 <sup>m</sup> 05 <sup>s</sup> +42°45'00"		

# Phoenix

The Phoenix

Phe, Phoenicis  
00<sup>h</sup>55<sup>m</sup>, -47°

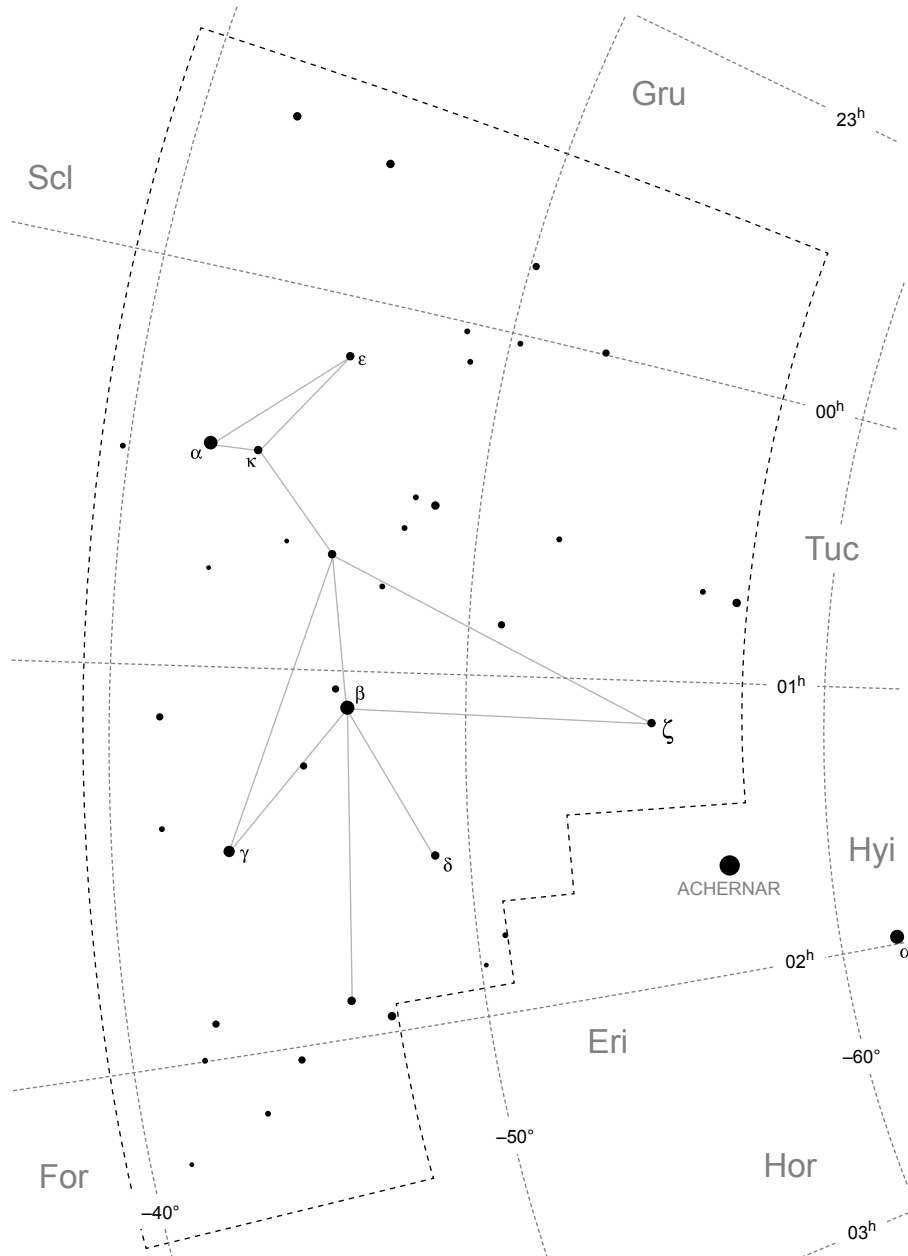


Visibility: Late May to March (early August to mid-Jan)  
Culmination: Nov 30 (21:00), Oct 16 (00:00), Aug 31 (03:00)



N★ 71

Origin: Keyser & de Houtman (1597)



☼☼ zeta Phe, HD 6882

01<sup>h</sup>08<sup>m</sup>23<sup>s</sup> -55°14'45"

# Pictor

The Painter's Easel

Pic, Pictoris  
05<sup>h</sup>35<sup>m</sup>, -53°



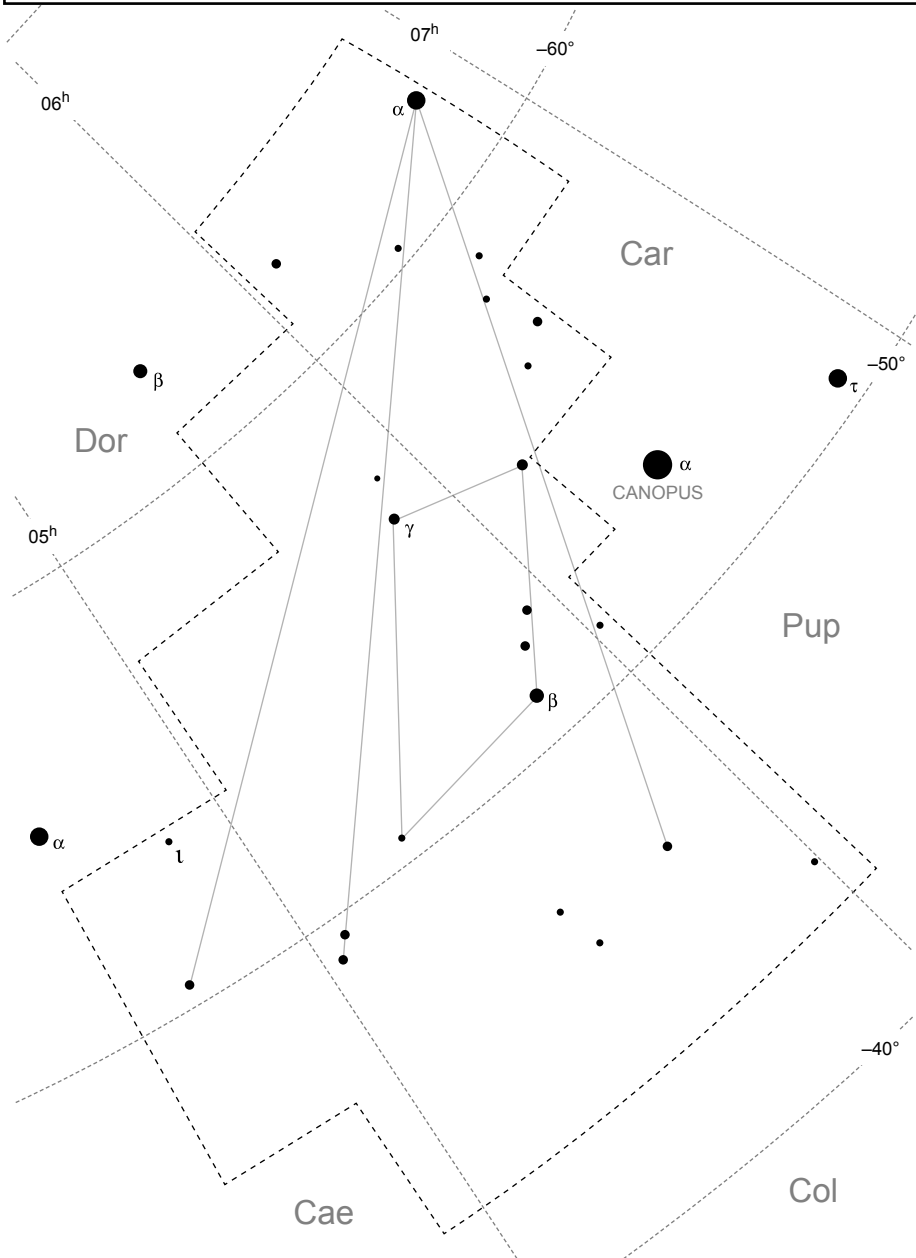
Visibility: Mid-October to mid-March


Culmination: Feb 09 (21:00), Dec 27 (00:00), Nov 11 (03:00)



N★ 49

Origin: La Caille (1752)



 iota Pic, HD 31203	04 <sup>h</sup> 50 <sup>m</sup> 55 <sup>s</sup> -53°27'41"	

# Pisces

The Fishes

Psc, Piscium  
00<sup>h</sup>40<sup>m</sup>, +11°

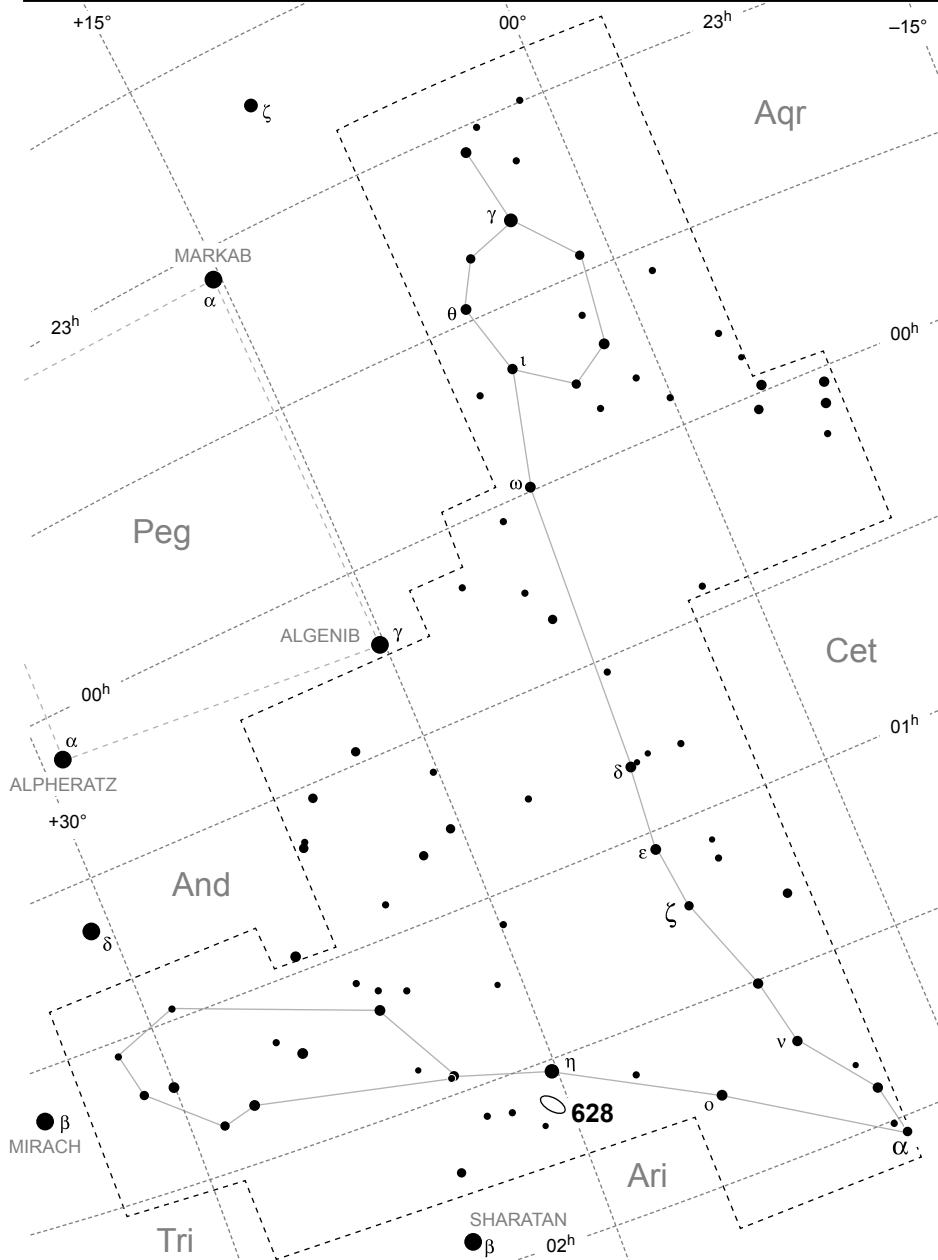


Visibility: Mid-June to mid-February  
Culmination: Nov 27 (21:00), Oct 13 (00:00), Aug 28 (03:00)



N★ 150

Origin: Ancient Greek (Ptolemy)



★ zeta Psc, SAO 109739	01 <sup>h</sup> 13 <sup>m</sup> 44 <sup>s</sup> +07°34'31"	★ alpha Psc, HD 12446	02 <sup>h</sup> 02 <sup>m</sup> 03 <sup>s</sup> +02°45'49"
○ NGC 628, M 74	01 <sup>h</sup> 36 <sup>m</sup> 42 <sup>s</sup> +15°47'00"		

# Piscis Austrinus

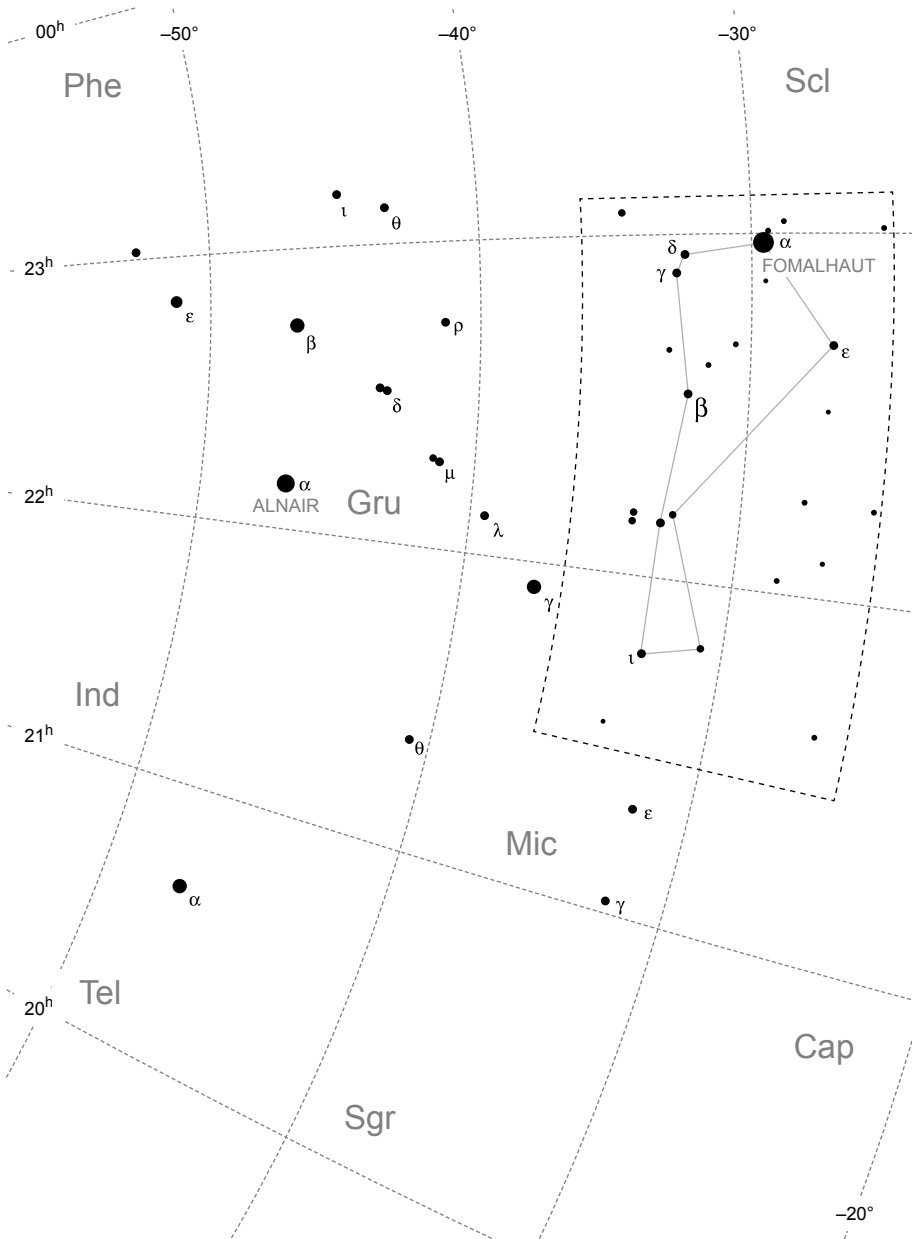
The Southern Fish

PsA, Piscis Austrini  
22<sup>h</sup>20<sup>m</sup>, -31°



Visibility: Mid-April to January (Jul to mid-Nov)  
Culmination: Oct 22 (21:00), Sep 07 (00:00), Jul 24 (03:00)

N★ 47  
Origin: Ancient Greek (Ptolemy)



★ ★ beta PsA, HD 213398	22 <sup>h</sup> 31 <sup>m</sup> 30 <sup>s</sup> -32°20'46"	



# Puppis

The Stern of the ship Argo

Pup, Puppis  
07<sup>h</sup>45<sup>m</sup>, -38°

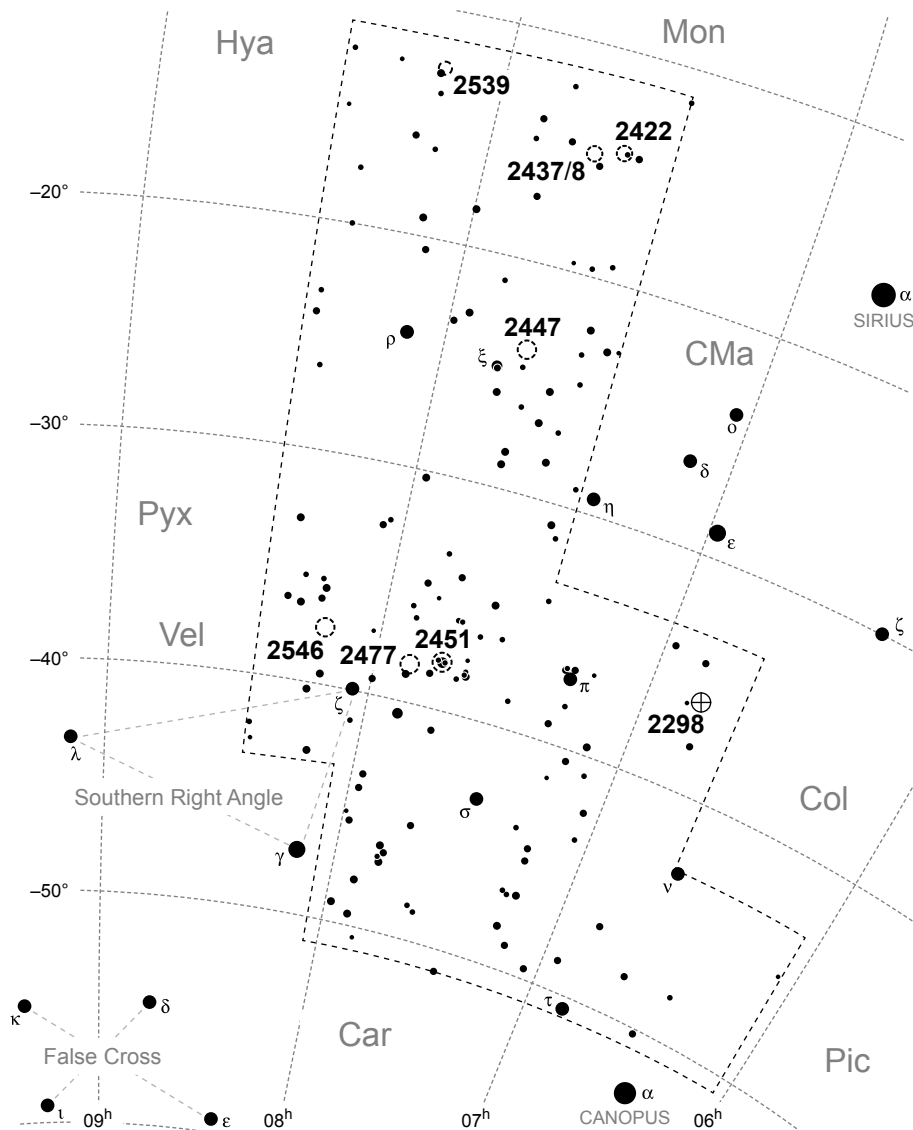


Visibility: Mid-August to late June (Nov to mid-Apr)  
Culmination: Mar 14 (21:00), Jan 28 (00:00), Dec 13 (03:00)



N ★ 237

Origin: Ancient Greek; La Caille (1752)



⊕ NGC 2298, B 37	06 <sup>h</sup> 48 <sup>m</sup> 59 <sup>s</sup> -36°00'19"	⊙ NGC 2451, A 25	07 <sup>h</sup> 45 <sup>m</sup> 24 <sup>s</sup> -37°58'00"
⊙ NGC 2422, M 47, A 23	07 <sup>h</sup> 36 <sup>m</sup> 35 <sup>s</sup> -14°28'57"	⊙ NGC 2477, C 71, A 27	07 <sup>h</sup> 52 <sup>m</sup> 06 <sup>s</sup> -38°32'00"
⊙ NGC 2437, M 46, A 24	07 <sup>h</sup> 41 <sup>m</sup> 42 <sup>s</sup> -14°49'00"	⊙ NGC 2539	08 <sup>h</sup> 10 <sup>m</sup> 42 <sup>s</sup> -12°50'00"
⊙ NGC 2438	07 <sup>h</sup> 41 <sup>m</sup> 51 <sup>s</sup> -14°43'55"	⊙ NGC 2546	08 <sup>h</sup> 11 <sup>m</sup> 54 <sup>s</sup> -37°37'00"
⊙ NGC 2447, M 93, A 26	07 <sup>h</sup> 44 <sup>m</sup> 30 <sup>s</sup> -23°51'12"		

# Pyxis

The Mariner's Compass

Pyx, Pyxidis

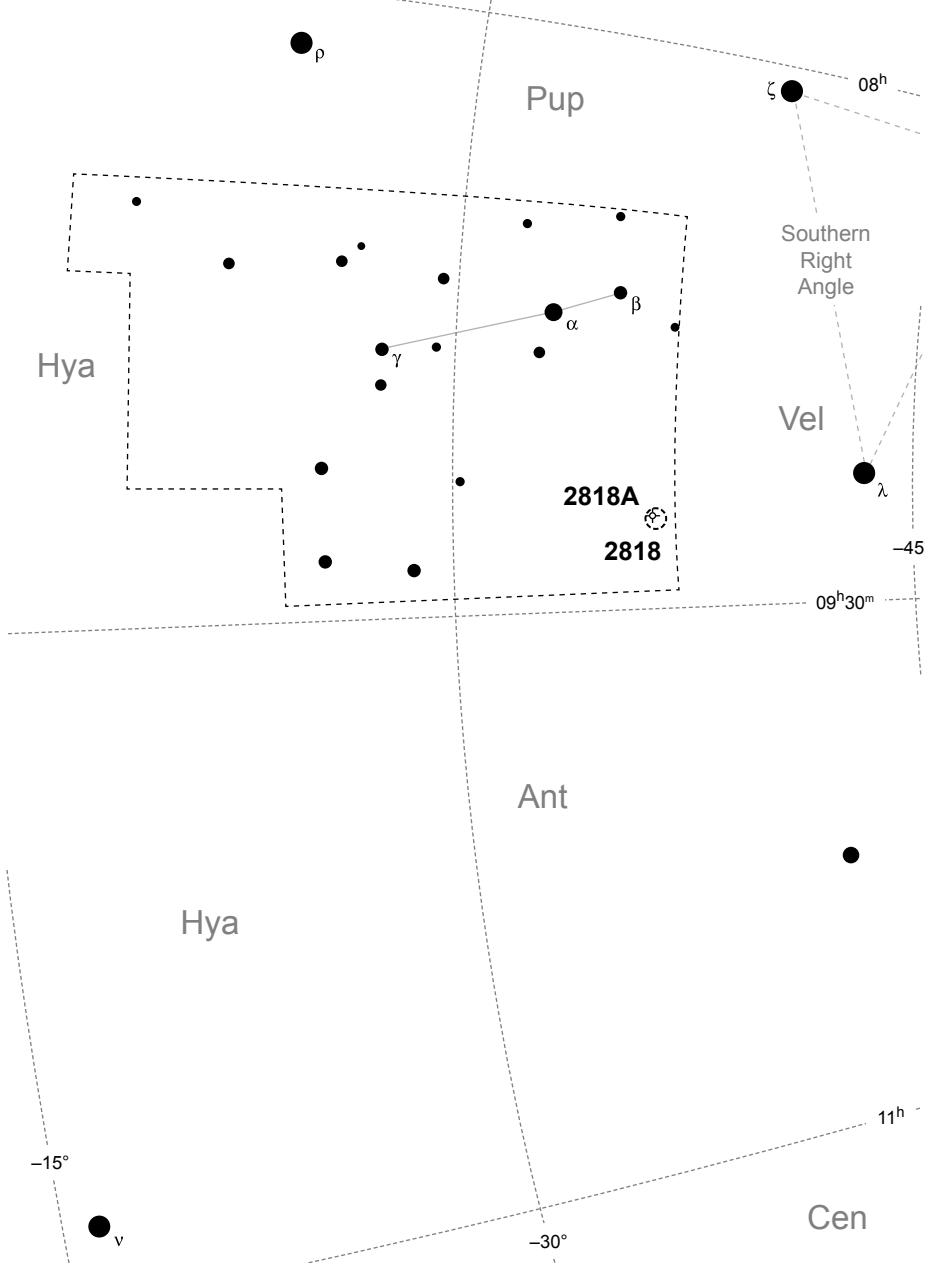
08<sup>h</sup>50<sup>m</sup>, -29°

Visibility: Late September to early July (mid-Dec to late Apr)

Culmination: Mar 31 (21:00), Feb 14 (00:00), Dec 30 (03:00)

N★ 41

Origin: La Caille (1752)



NGC 2818A, A 33	09 <sup>h</sup> 16 <sup>m</sup> 02 <sup>s</sup> -36°37'39"	NGC 2818, A 33	09 <sup>h</sup> 16 <sup>m</sup> 10 <sup>s</sup> -36°37'06"

# Reticulum

The Reticle

Ret, Reticuli  
03<sup>h</sup>50<sup>m</sup>, -61°

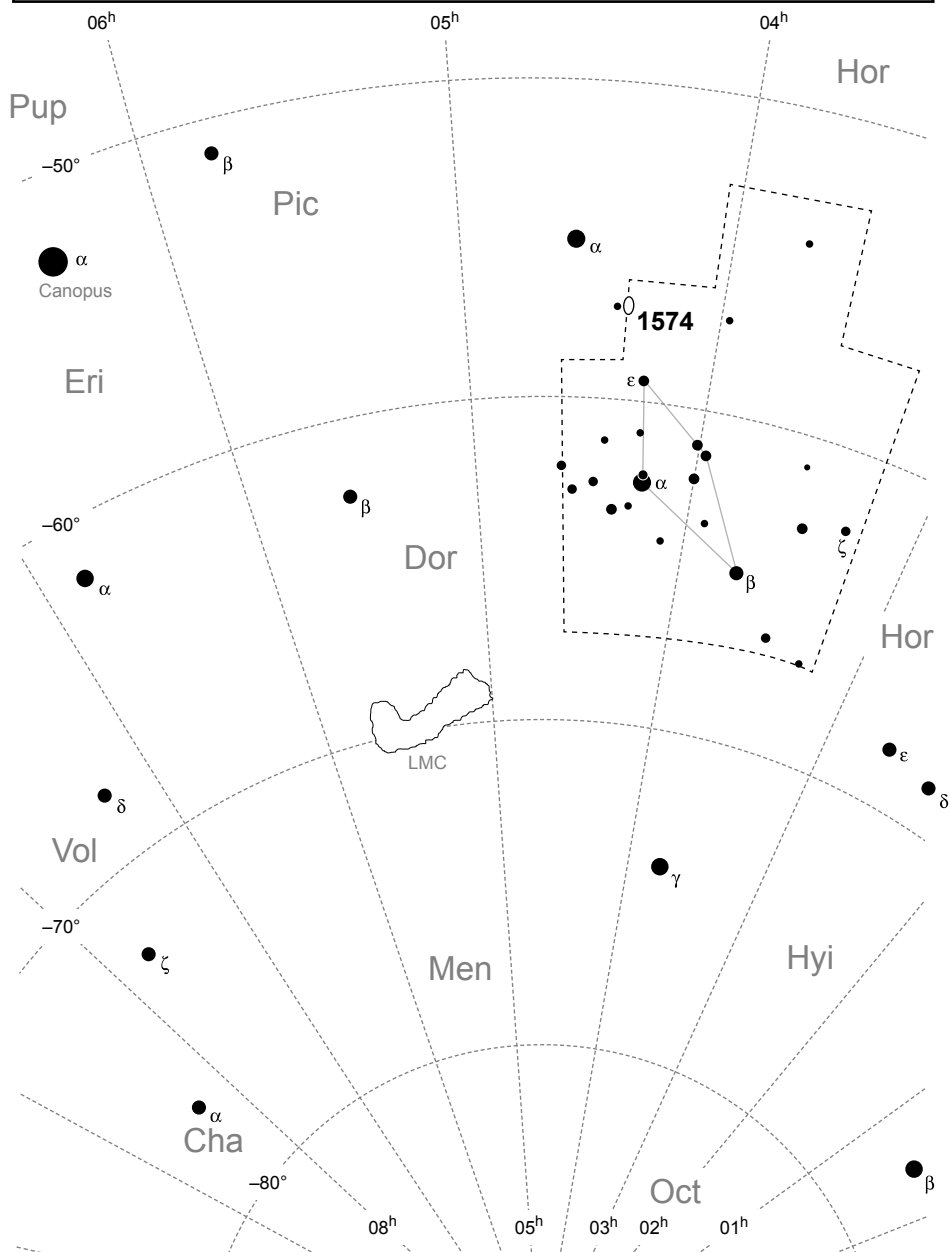


Visibility: Year-round; best early Sep through Feb  
Culmination: Jan 14 (21:00), Nov 30 (00:00), Oct 15 (03:00)



N★ 23

Origin: La Caille (1752)



★ zeta Ret, HD 20766

03<sup>h</sup>18<sup>m</sup>13<sup>s</sup> -62°30'23"

○ NGC 1574

04<sup>h</sup>21<sup>m</sup>59<sup>s</sup> -56°58'29"

# Sagitta

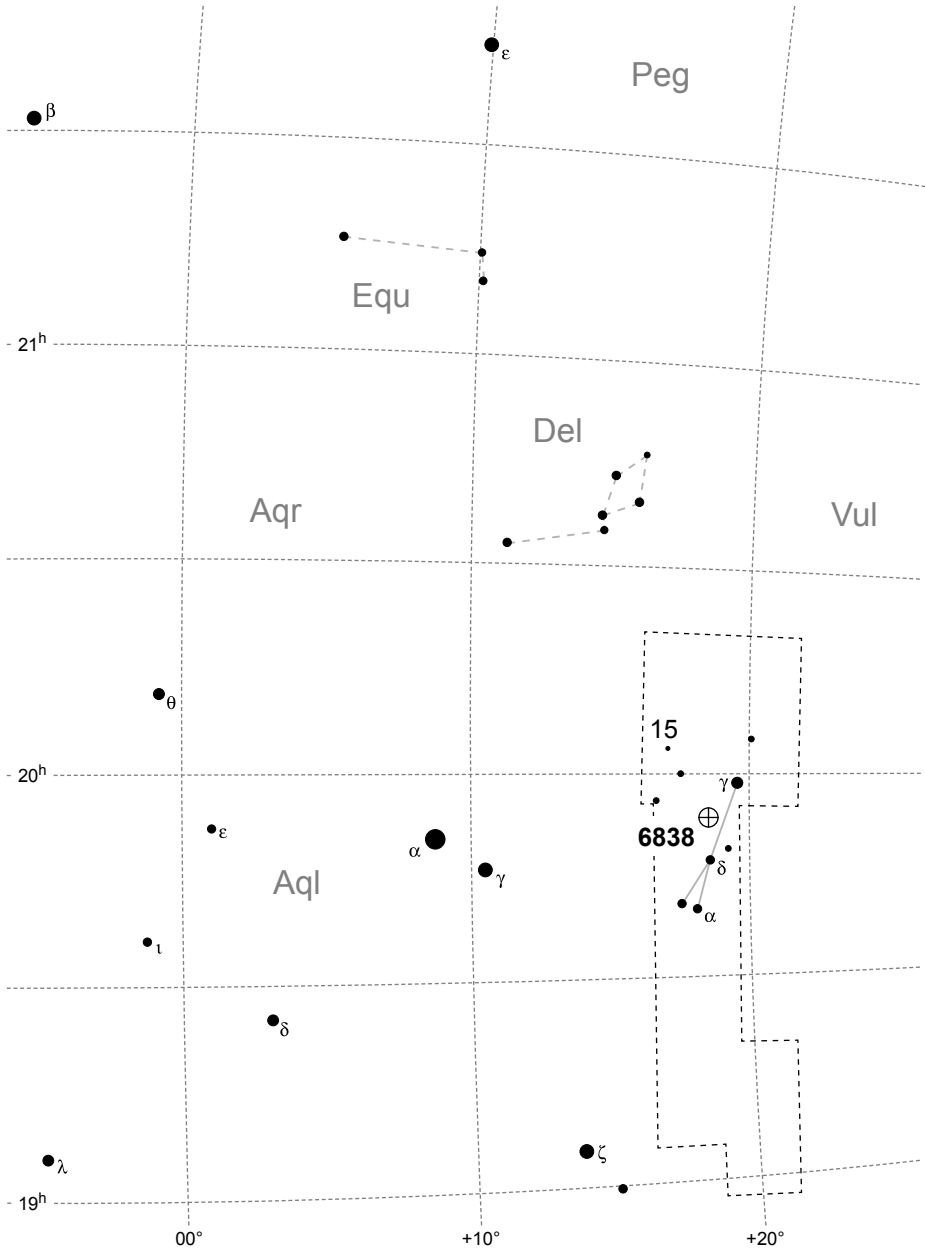
The Arrow

Sge, Sagittae  
19<sup>h</sup>40<sup>m</sup>, +18°

★ ★ ★ ☆ ☆

Visibility: Early April to mid-November  
Culmination: Sep 11 (21:00), Jul 28 (00:00), Jun 13 (03:00)  
N ★ 26  
Origin: Ancient Greek (Ptolemy)

✋ ✋ ✋ ✋ ✋



⊕ NGC 6838, M 71	19 <sup>h</sup> 53 <sup>m</sup> 46 <sup>s</sup> +18°46′42″	★ ★ 15 Sge, SAO 105635	20 <sup>h</sup> 04 <sup>m</sup> 07 <sup>s</sup> +17°04′16″

# Sagittarius

The Archer

Sgr, Sagittarii  
18<sup>h</sup>55<sup>m</sup>, -27°

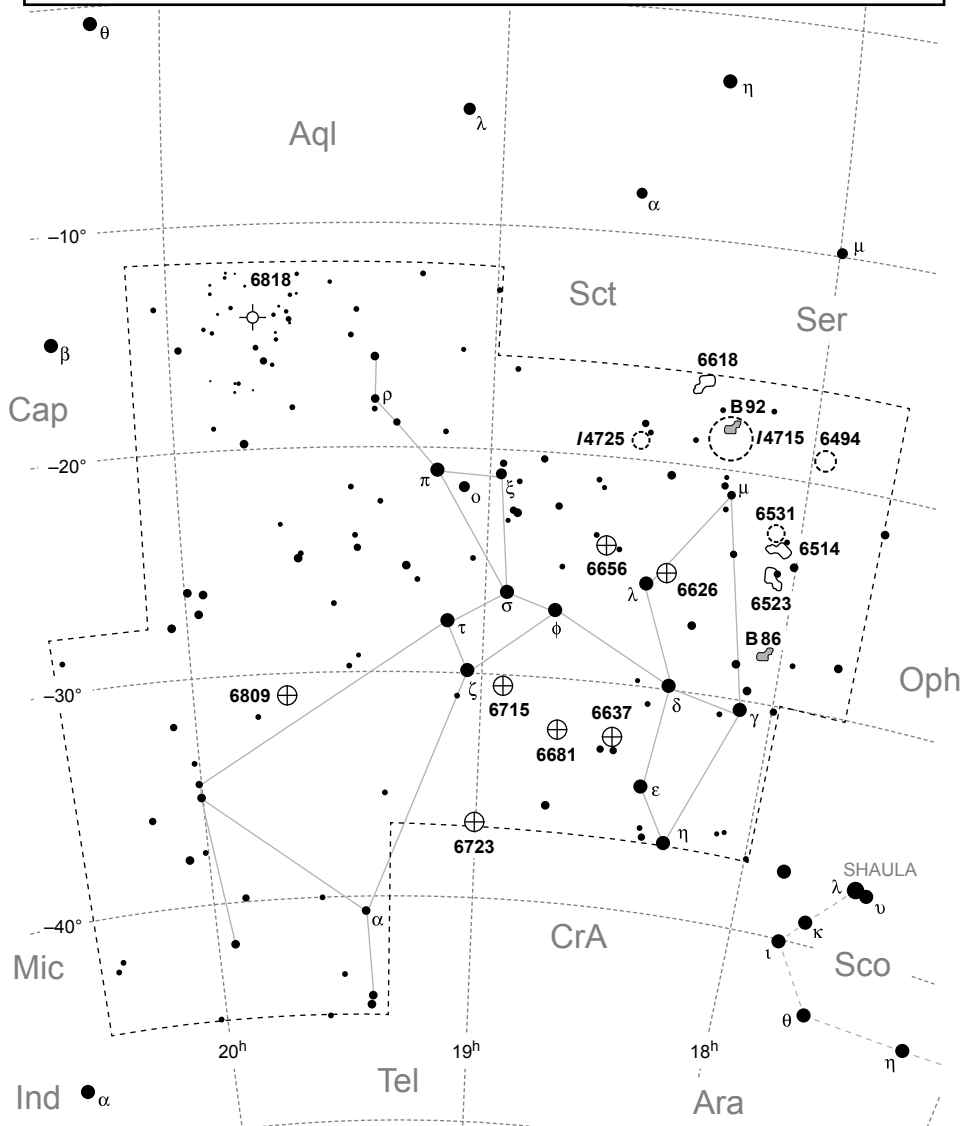


Visibility: March to December (late May to early Oct)  
Culmination: Aug 31 (21:00), Jul 17 (00:00), Jun 01 (03:00)



N★ 194

Origin: Ancient Greek (Ptolemy)



NGC 6494	17 <sup>h</sup> 56 <sup>m</sup> 56 <sup>s</sup> -19°00'42"	IC 4715	18 <sup>h</sup> 16 <sup>m</sup> -18°50'	NGC 6681	18 <sup>h</sup> 43 <sup>m</sup> 13 <sup>s</sup> -32°17'31"
NGC 6514	18 <sup>h</sup> 02 <sup>m</sup> 23 <sup>s</sup> -23°01'48"	NGC 6618	18 <sup>h</sup> 20 <sup>m</sup> 47 <sup>s</sup> -16°10'18"	NGC 6715	18 <sup>h</sup> 55 <sup>m</sup> 03 <sup>s</sup> -30°28'43"
Barnard 86	18 <sup>h</sup> 02 <sup>m</sup> 58 <sup>s</sup> -27°52'06"	NGC 6626	18 <sup>h</sup> 24 <sup>m</sup> 33 <sup>s</sup> -24°52'11"	NGC 6723	18 <sup>h</sup> 59 <sup>m</sup> 33 <sup>s</sup> -36°37'53"
NGC 6523	18 <sup>h</sup> 03 <sup>m</sup> 12 <sup>s</sup> -24°23'00"	NGC 6637	18 <sup>h</sup> 31 <sup>m</sup> 23 <sup>s</sup> -32°20'53"	NGC 6809	19 <sup>h</sup> 39 <sup>m</sup> 59 <sup>s</sup> -30°57'44"
NGC 6531	18 <sup>h</sup> 04 <sup>m</sup> 12 <sup>s</sup> -22°29'00"	IC 4725	18 <sup>h</sup> 31 <sup>m</sup> 42 <sup>s</sup> -19°07'00"	NGC 6818	19 <sup>h</sup> 43 <sup>m</sup> 58 <sup>s</sup> -14°09'12"
Barnard 92	18 <sup>h</sup> 15 <sup>m</sup> 30 <sup>s</sup> -18°11'00"	NGC 6656	18 <sup>h</sup> 36 <sup>m</sup> 24 <sup>s</sup> -23°54'12"		

# Scorpius

The Scorpion

Sco, Scorp  
16°40'N, -33°E

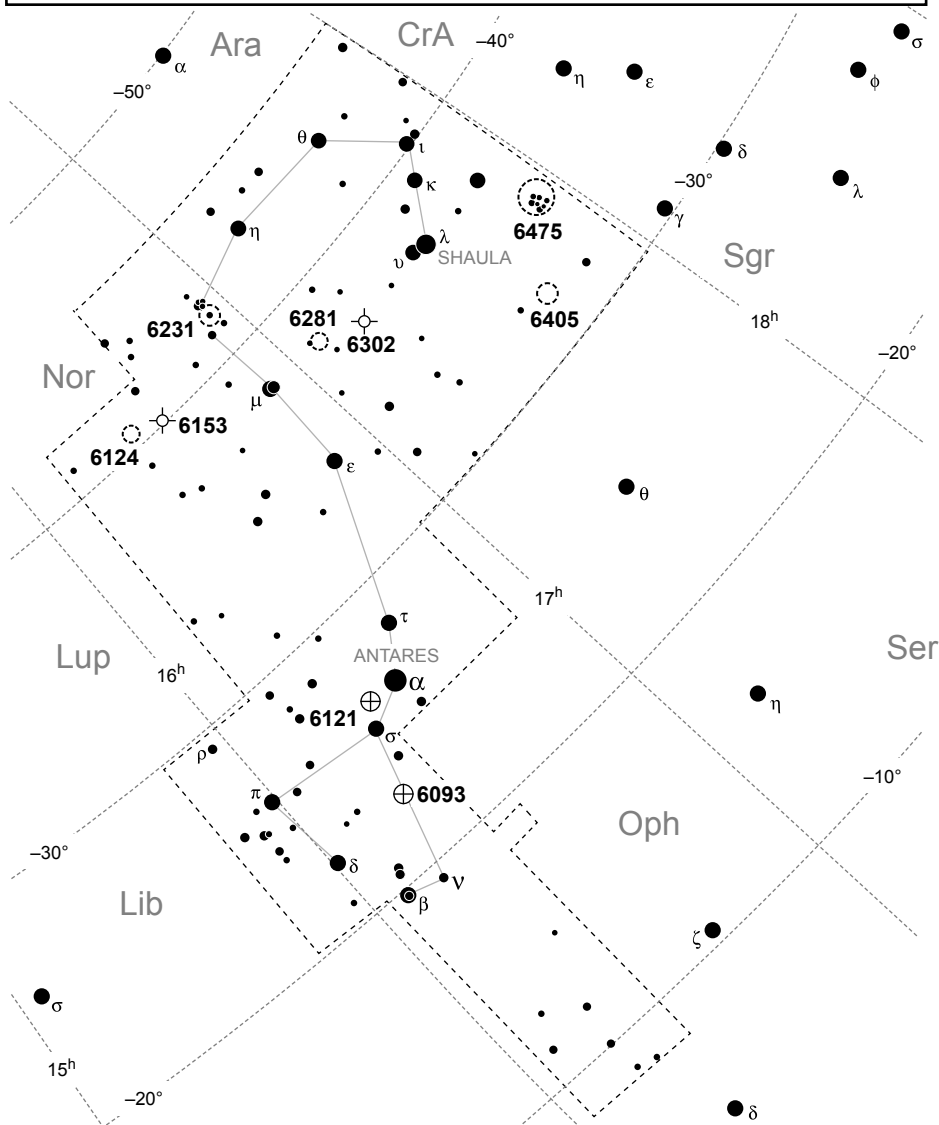


Visibility: Late Jan to late Nov (mid-April to late-August)  
Culmination: Jul 27 (21:00), Jun 12 (00:00), Apr 27 (03:00)



N★ 167

Origin: Ancient Greek (Ptolemy)



★ nu Scorpii, HD 145502	16 <sup>h</sup> 12 <sup>m</sup> 00 <sup>s</sup> –19°27'38"	★ mu Scorpii, HD 151890	16 <sup>h</sup> 51 <sup>m</sup> 52 <sup>s</sup> –38°02'51"
⊕ NGC 6093, M 80, B 73	16 <sup>h</sup> 17 <sup>m</sup> 03 <sup>s</sup> –22°58'30"	★ NGC 6231, C 76, A 72	16 <sup>h</sup> 54 <sup>m</sup> 09 <sup>s</sup> –41°49'36"
⊕ NGC 6121, M 4, B 75, A 68	16 <sup>h</sup> 23 <sup>m</sup> 35 <sup>s</sup> –26°31'32"	○ NGC 6281, A 76	17 <sup>h</sup> 04 <sup>m</sup> 42 <sup>s</sup> –37°59'00"
○ NGC 6124, C 75, A 69	16 <sup>h</sup> 25 <sup>m</sup> 18 <sup>s</sup> –40°39'00"	⊖ NGC 6302, Bug Neb., C 69	17 <sup>h</sup> 13 <sup>m</sup> 44 <sup>s</sup> –37°06'16"
★ alpha Sco, Antares	16 <sup>h</sup> 29 <sup>m</sup> 24 <sup>s</sup> –26°25'55"	○ NGC 6405, M 6, A 78	17 <sup>h</sup> 40 <sup>m</sup> 18 <sup>s</sup> –32°12'00"
⊖ NGC 6153	16 <sup>h</sup> 31 <sup>m</sup> 31 <sup>s</sup> –40°15'14"	○ NGC 6475, M 7, A 80	17 <sup>h</sup> 53 <sup>m</sup> 48 <sup>s</sup> –34°47'00"

# Sculptor

The Sculptor's Workshop

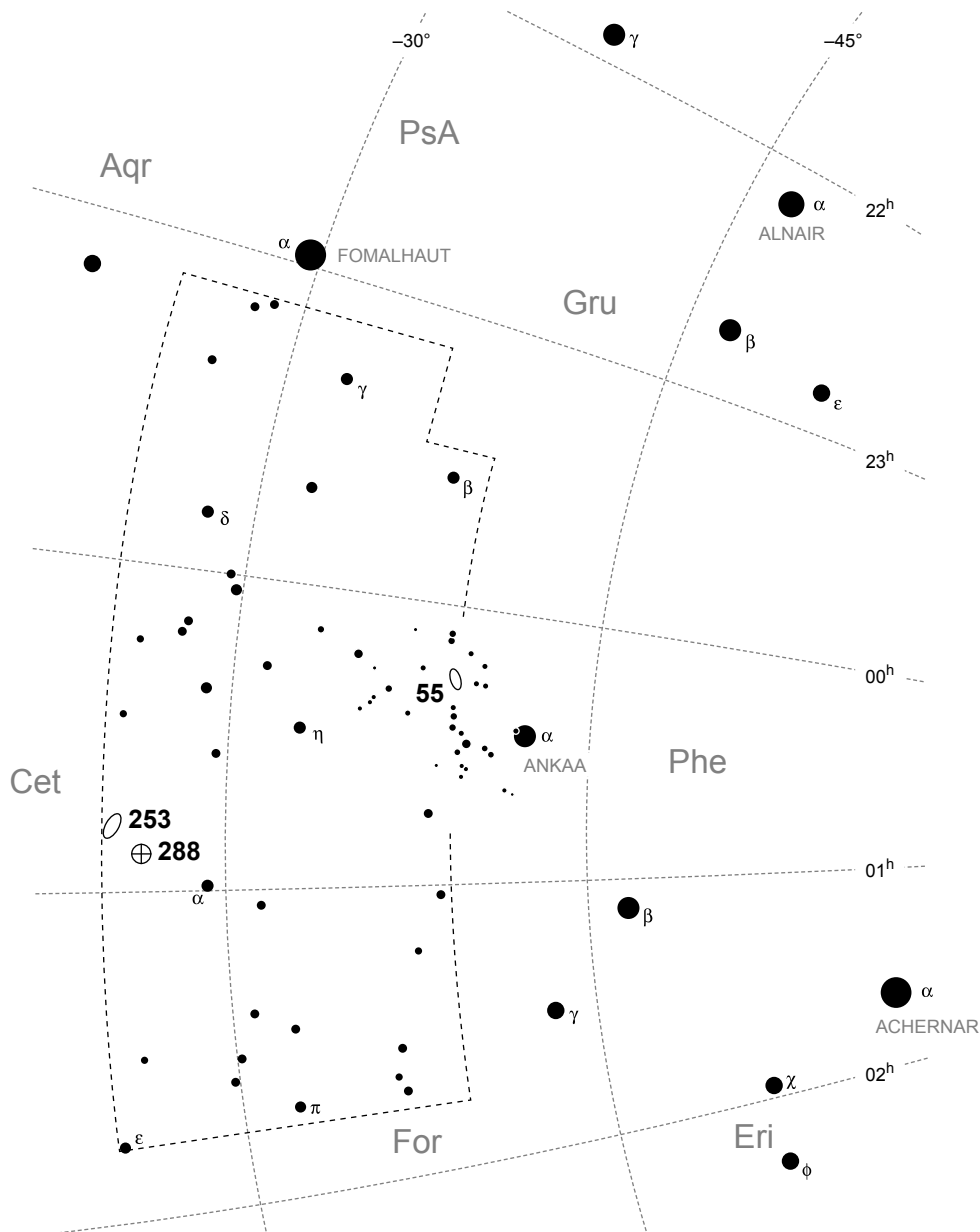
Scl, Sculptoris  
00°20′, −32°



Visibility: May to late February (late Jul to late Nov)  
Culmination: Nov 21 (21:00), Oct 07 (00:00), Aug 22 (03:00)



N★ 52  
Origin: La Caille (1752)



○ NGC 55, B 1, C 72, A 1	00 <sup>h</sup> 14 <sup>m</sup> 54 <sup>s</sup> −39°11′55″	⊕ NGC 288, B 5, A 6	00 <sup>h</sup> 52 <sup>m</sup> 45 <sup>s</sup> −26°34′51″
○ NGC 253, C 65, A 5	00 <sup>h</sup> 47 <sup>m</sup> 33 <sup>s</sup> −25°17′18″		

# Scutum

The Shield

Sct, Scuti  
18<sup>h</sup>40<sup>m</sup>, -10°

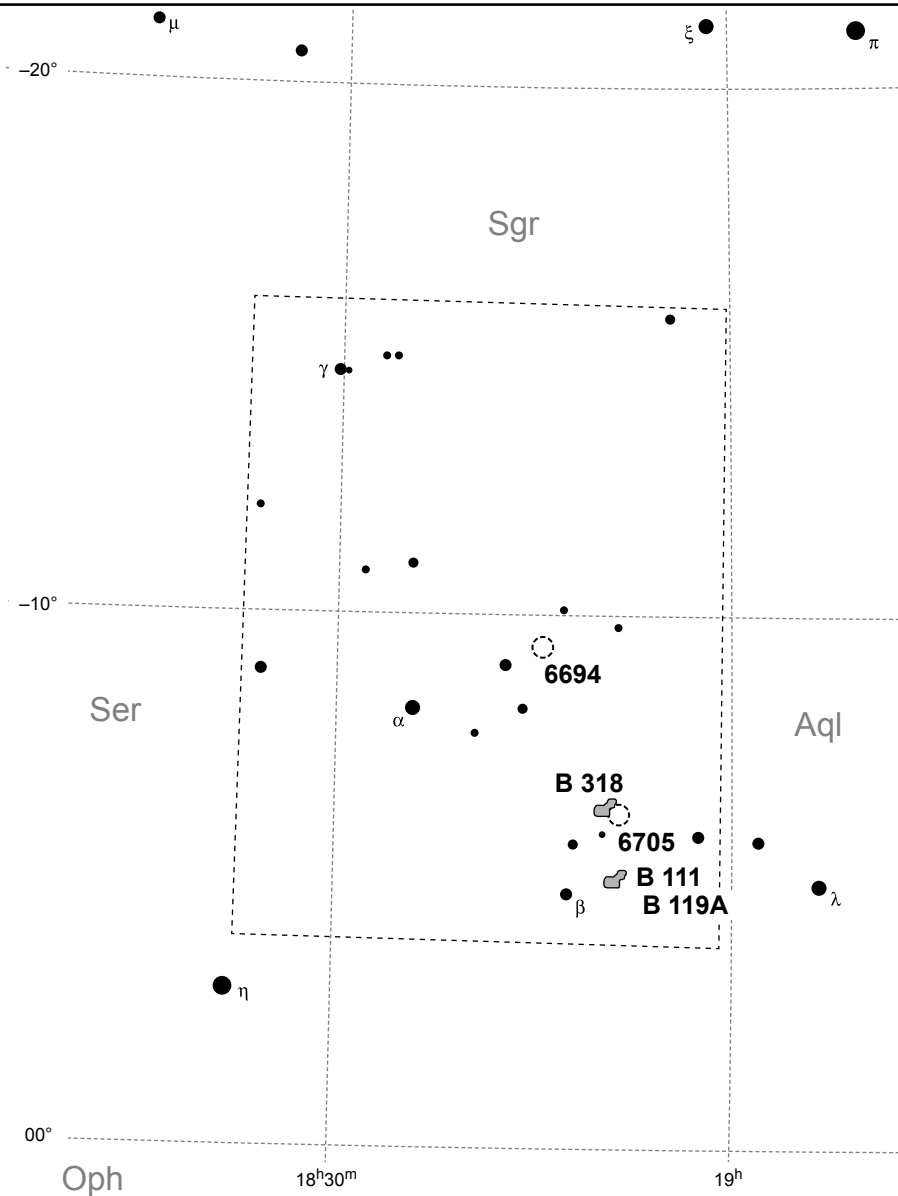


Visibility: March to mid-November (early May to mid-Sep)  
Culmination: Aug 27 (21:00), Jul 13 (00:00), May 28 (03:00)



N ★ 29

Origin: Johannes Hevelius (1690)



NGC 6694, M 26	18 <sup>h</sup> 45 <sup>m</sup> 18 <sup>s</sup> -09°23'00"	NGC 6705, Wild Duck, M 11	18 <sup>h</sup> 51 <sup>m</sup> 00 <sup>s</sup> -06°16'00"
Barnard 318	18 <sup>h</sup> 49 <sup>m</sup> 42 <sup>s</sup> -06°23'00"	Barnard 119A	18 <sup>h</sup> 54 <sup>m</sup> 39 <sup>s</sup> -05°10'00"
Barnard 111	18 <sup>h</sup> 50 <sup>m</sup> 00 <sup>s</sup> -04°57'00"		



# Serpens (Caput)

15<sup>h</sup>40<sup>m</sup>, +11°

Visibility: Feb to mid-Sep (mid-Mar to early Aug)  
Culmination: Jul 12 (21:00), May 28 (00:00), Apr 12 (03:00)

The Serpent (Head)

# Serpens (Cauda)

18<sup>h</sup>10<sup>m</sup>, -07°

Visibility: Mar to early Nov (May to early Sep)  
Culmination: Aug 20 (21:00), Jul 06 (00:00), May 21 (03:00)

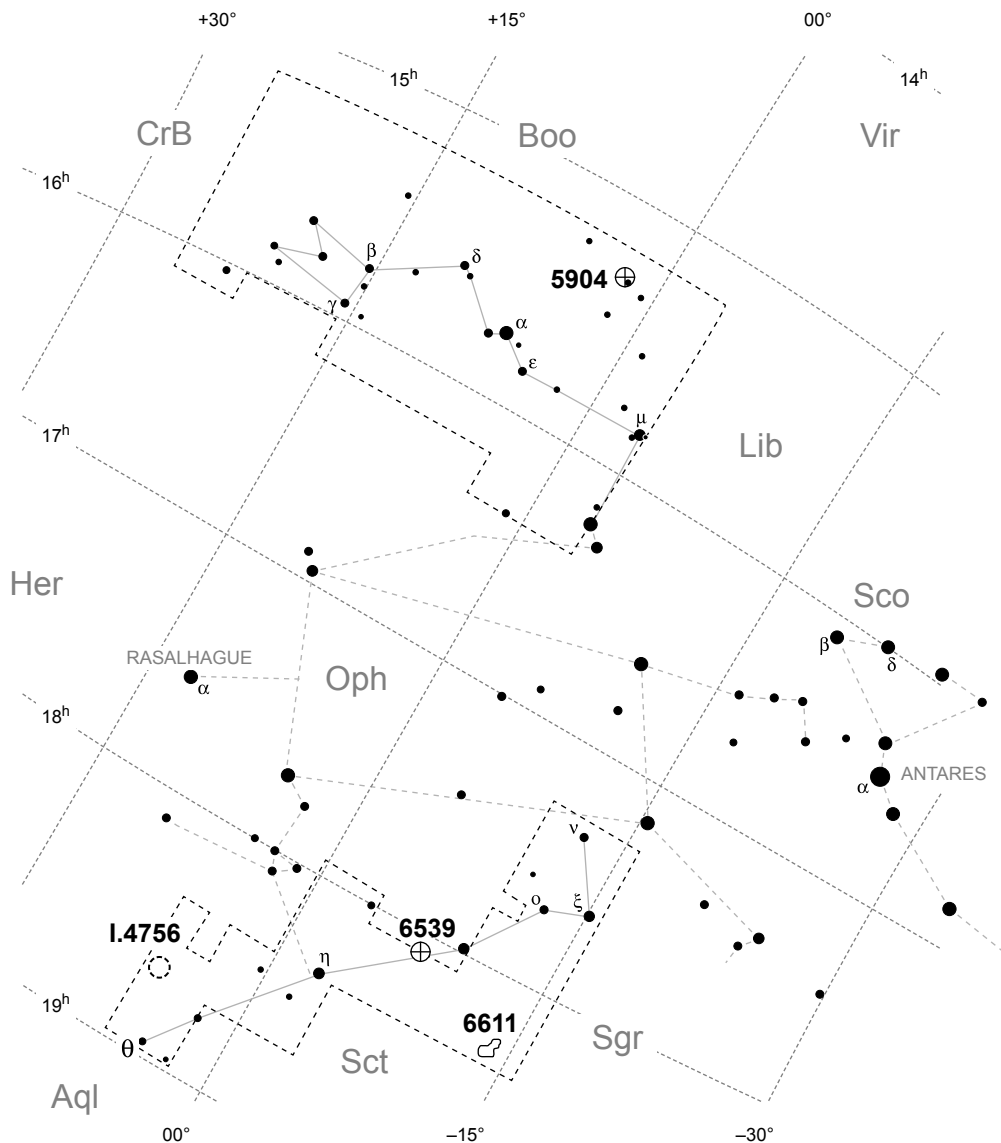
The Serpent (Tail)

Ser, Serpentis



N ★ 108

Origin: Ancient Greek (Ptolemy)



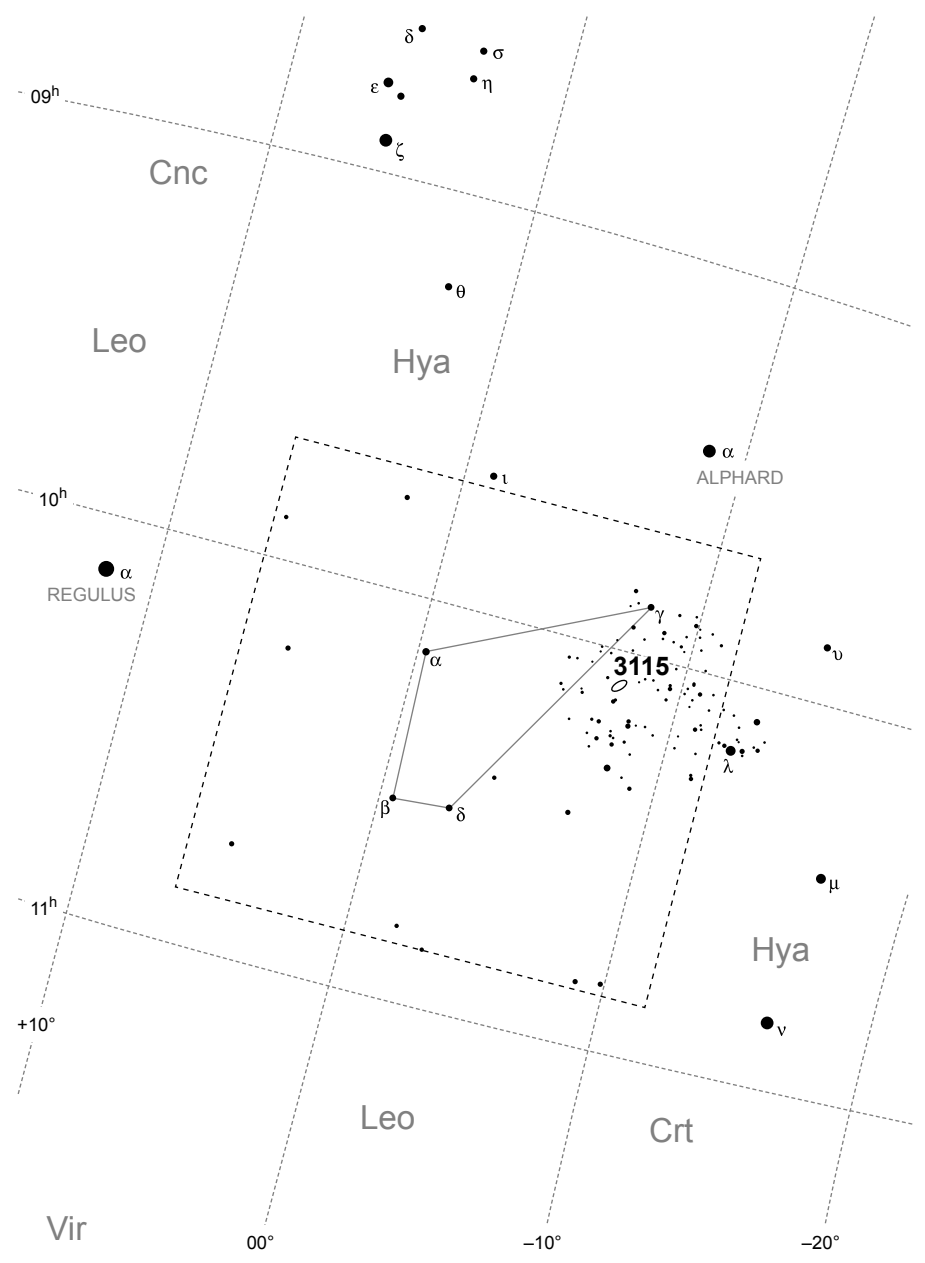
⊕ NGC 5904, M 5	15 <sup>h</sup> 18 <sup>m</sup> 34 <sup>s</sup> +02°04'58"	🦅 NGC 6611, Eagle, M 16	18 <sup>h</sup> 18 <sup>m</sup> 48 <sup>s</sup> -13°48'26"
⊕ NGC 6539	18 <sup>h</sup> 04 <sup>m</sup> 50 <sup>s</sup> -07°35'09"	🌀 IC 4756	18 <sup>h</sup> 38 <sup>m</sup> 31 <sup>s</sup> +05°29'24"

# Sextans

The Sextant

Sex, Sextantis  
10<sup>h</sup>15<sup>m</sup>, -03°

Visibility: November to early-July (Jan to mid-May)  
 Culmination: Apr 21 (21:00), Mar 07 (00:00), Jan 20 (03:00)  
 N★ 38  
 Origin: Johannes Hevelius (1690)



NGC 3115, B 42, C 53, A 36	10 <sup>h</sup> 05 <sup>m</sup> 14 <sup>s</sup> -07°43'08"	

# Taurus

The Bull

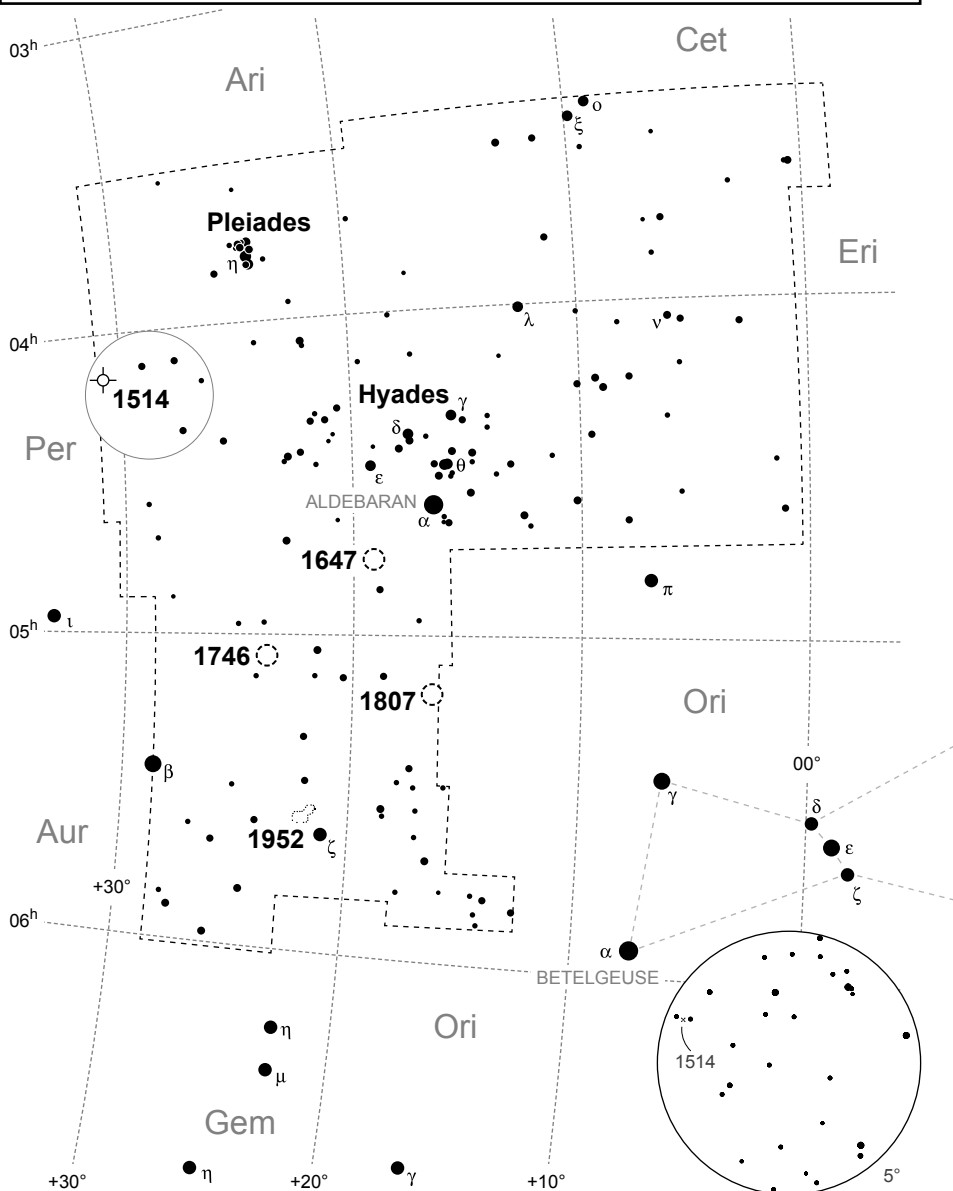
Tau, Tauri  
04<sup>h</sup>15<sup>m</sup>, +15°



Visibility: Early Aug to Mar (late-Sep to mid-Feb)  
Culmination: Jan 19 (21:00), Dec 06 (00:00), Oct 21 (03:00)



N★ 223  
Origin: Ancient Greek (Ptolemy)



Pleiades, M 45	03 <sup>h</sup> 47 <sup>m</sup> 29 <sup>s</sup> +24°06'18"	NGC 1746	05 <sup>h</sup> 03 <sup>m</sup> 50 <sup>s</sup> +23°46'12"
NGC 1514	04 <sup>h</sup> 09 <sup>m</sup> 17 <sup>s</sup> +30°46'33"	NGC 1807	05 <sup>h</sup> 10 <sup>m</sup> 47 <sup>s</sup> +16°31'00"
Hyades, C 41	04 <sup>h</sup> 26 <sup>m</sup> 54 <sup>s</sup> +15°52'00"	NGC 1952, Crab Neb., M 1	05 <sup>h</sup> 34 <sup>m</sup> 32 <sup>s</sup> +22°00'52"
NGC 1647	04 <sup>h</sup> 45 <sup>m</sup> 54 <sup>s</sup> +19°07'00"		

# Telescopium

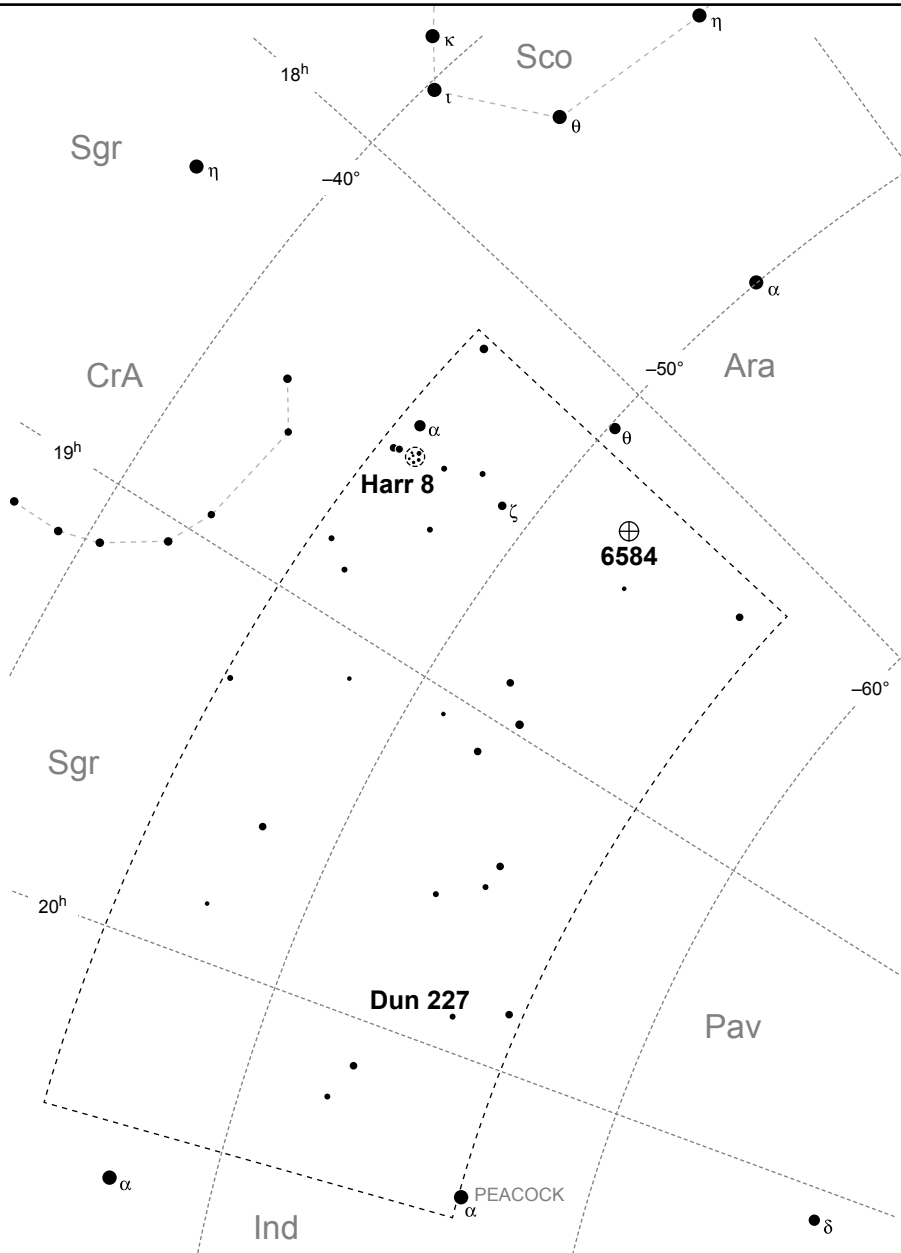
The Telescope

Tel, Telescopii  
19<sup>h</sup>10<sup>m</sup>, -51°



Visibility: Mid-Feb to mid-Jan (late-May to mid-Oct)  
Culmination: Sep 04 (21:00), Jul 21 (00:00), Jun 06 (03:00)

N★ 57  
Origin: La Caille (1752)



⊕ NGC 6584, B 107, A 86	18 <sup>h</sup> 18 <sup>m</sup> 38 <sup>s</sup> -52°12'55"	★ ★ Dunlop 227, SAO 246311	19 <sup>h</sup> 52 <sup>m</sup> 38 <sup>s</sup> -54°58'16"
☉ Harrington 8	18 <sup>h</sup> 30 <sup>m</sup> 30 <sup>s</sup> -46°08'		

# Triangulum

The Triangle

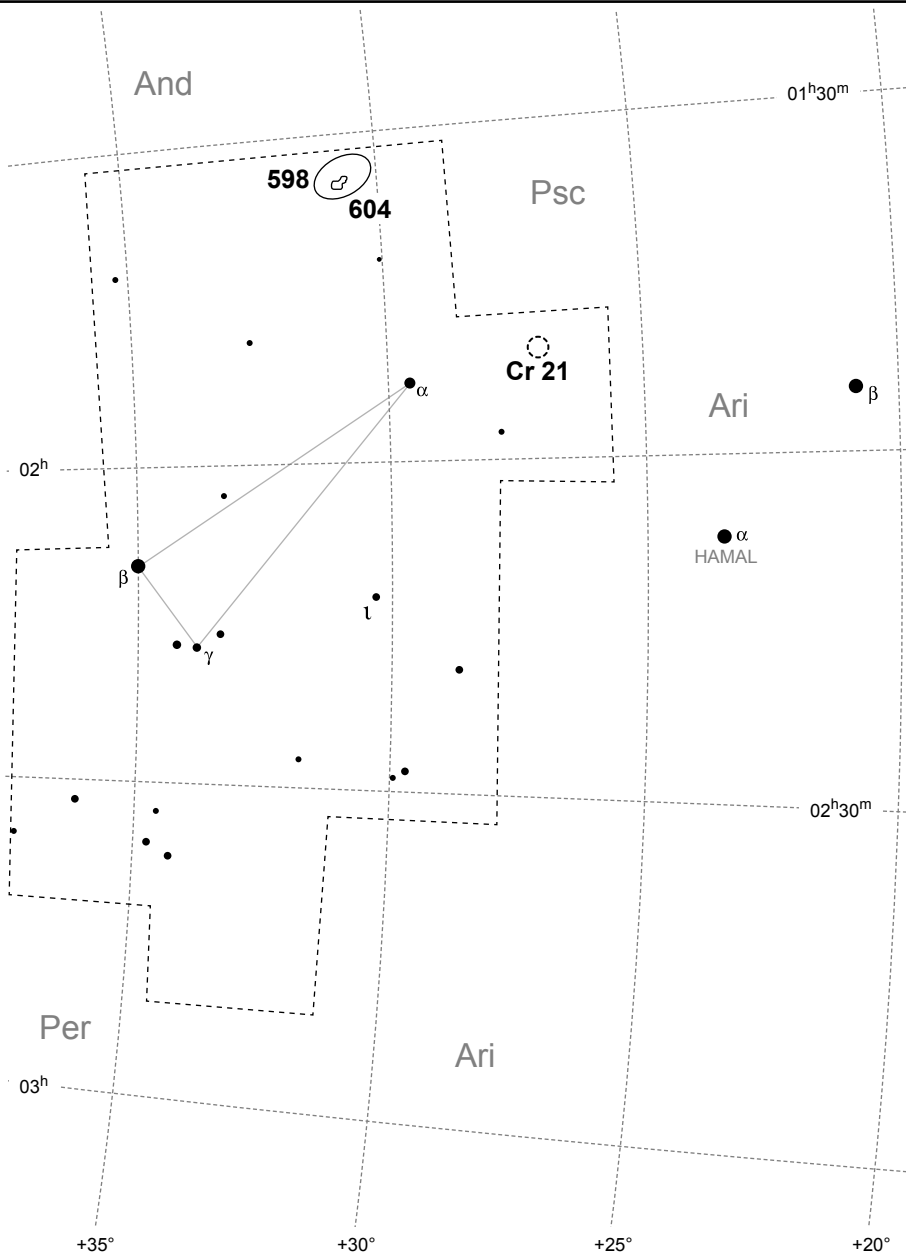
Tri, Trianguli  
02<sup>h</sup>05<sup>m</sup>, +32°







Visibility: August through early February  
Culmination: Dec 18 (21:00), Nov 03 (00:00), Sep 18 (03:00)

N ★ 25

Origin: Ancient Greek (Ptolemy)



 NGC 598, M 33	01 <sup>h</sup> 33 <sup>m</sup> 51 <sup>s</sup> +30°39'37"	 Collinder 21	01 <sup>h</sup> 50 <sup>m</sup> 12 <sup>s</sup> +27°04'48"
 NGC 604	01 <sup>h</sup> 34 <sup>m</sup> 33 <sup>s</sup> +30°47'06"	 iota Tri, HD 13480	02 <sup>h</sup> 12 <sup>m</sup> 22 <sup>s</sup> +30°18'11"

# Triangulum Australe

The Southern Triangle, TrA

Trianguli Australis  
15<sup>h</sup>55<sup>m</sup>, -66°

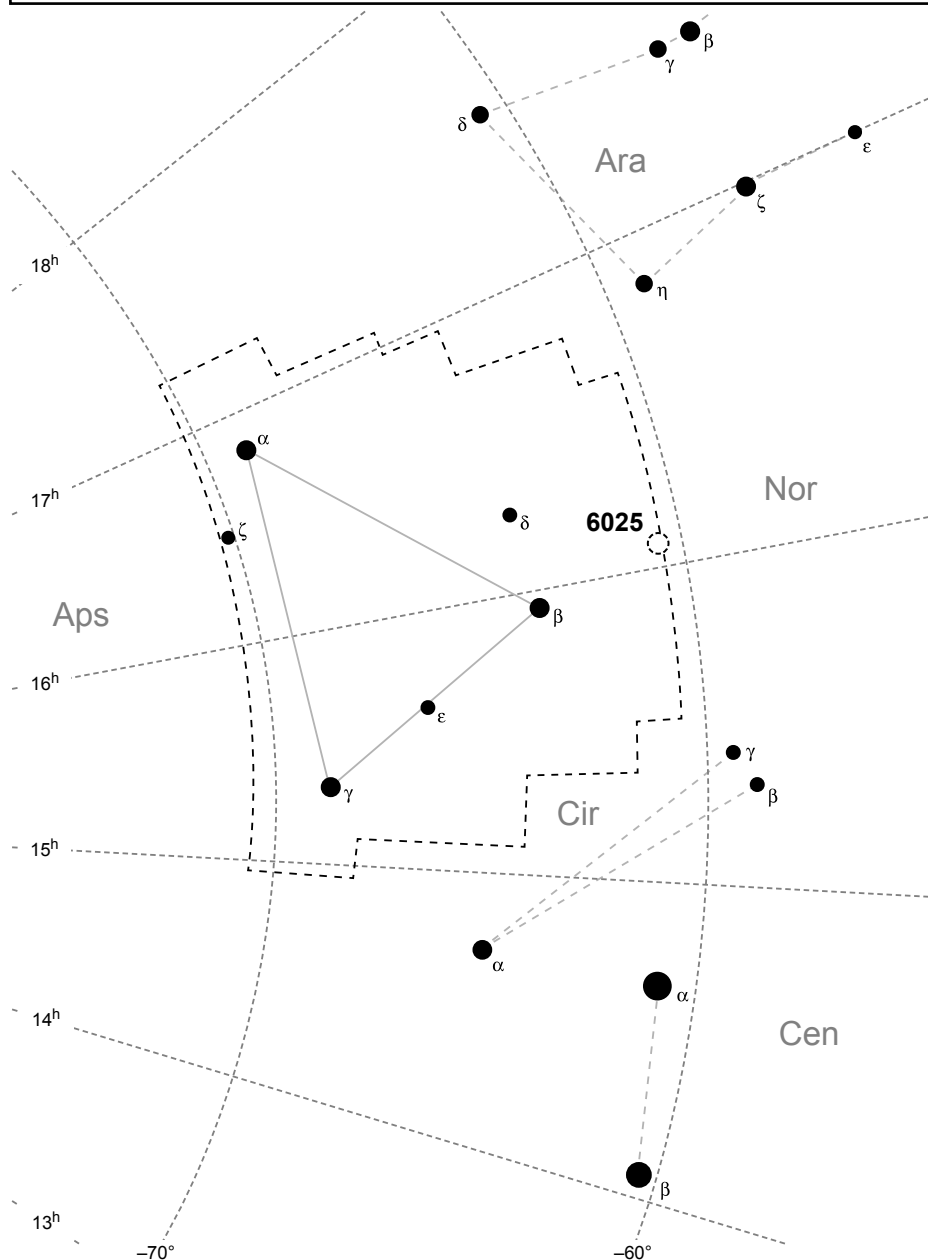


Visibility: Year-round; best mid-March through August  
Culmination: Jul 17 (21:00), Jun 02 (00:00), Apr 17 (03:00)



N★ 35

Origin: Keyser & de Houtman (1597)



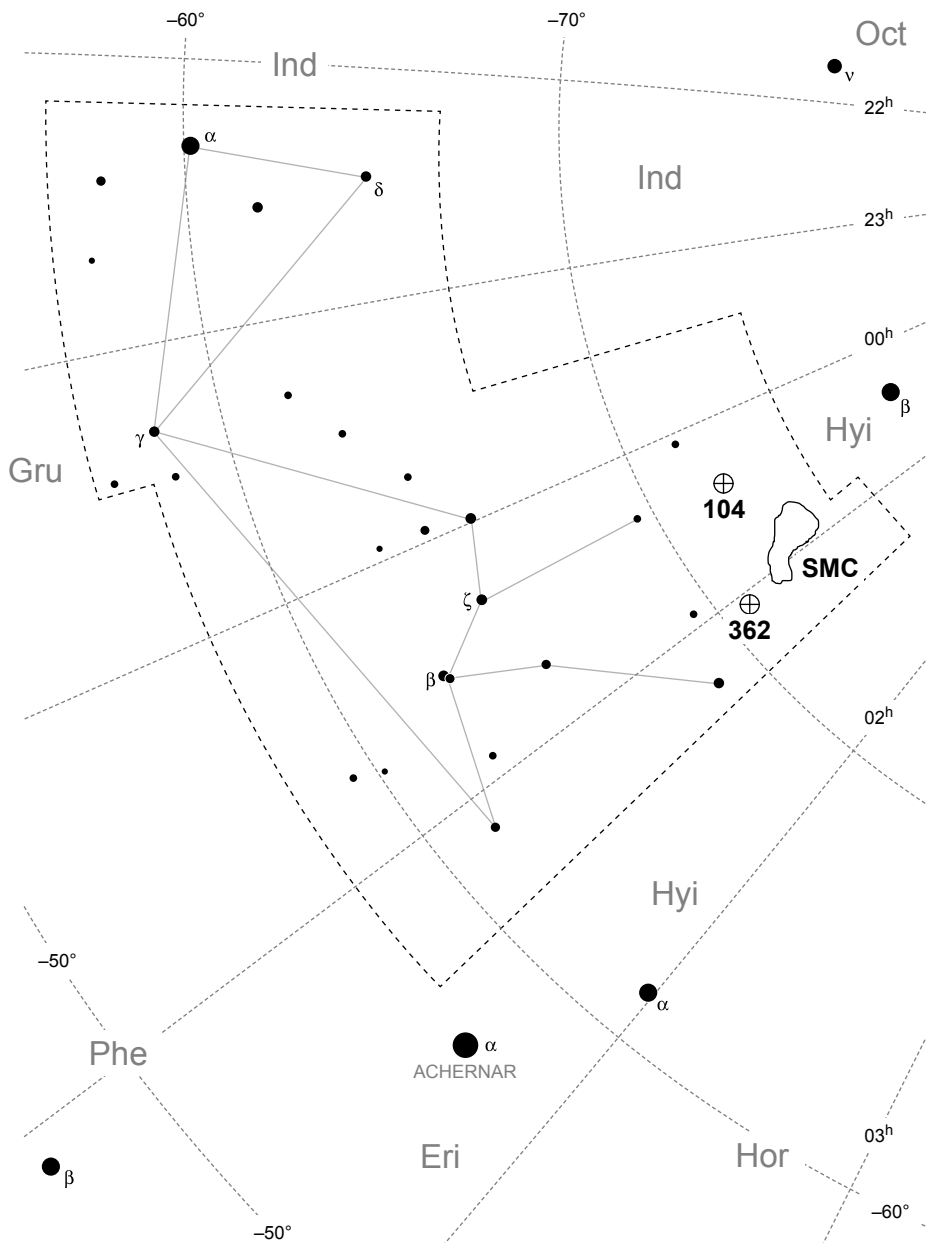
○ NGC 6025, C 95, A 65

16<sup>h</sup>03<sup>m</sup>18<sup>s</sup> -60°26'

## The Toucan

N★ 45

Origin: Keyser & de Houtman (1597)



$\oplus$ NGC 104, 47 Tuc, C 106, A 2	00 <sup>h</sup> 24 <sup>m</sup> 06 <sup>s</sup> -72°04'53"	$\oplus$ NGC 362, B 7, C 104, A 8	01 <sup>h</sup> 03 <sup>m</sup> 14 <sup>s</sup> -70°50'54"
$\emptyset$ SMC, A 7, (NGC 292)	00 <sup>h</sup> 52 <sup>m</sup> 38 <sup>s</sup> -72°48'01"		

# Ursa Major

The Great Bear

UMa, Ursae Majoris

10<sup>h</sup>20<sup>m</sup>, +47°



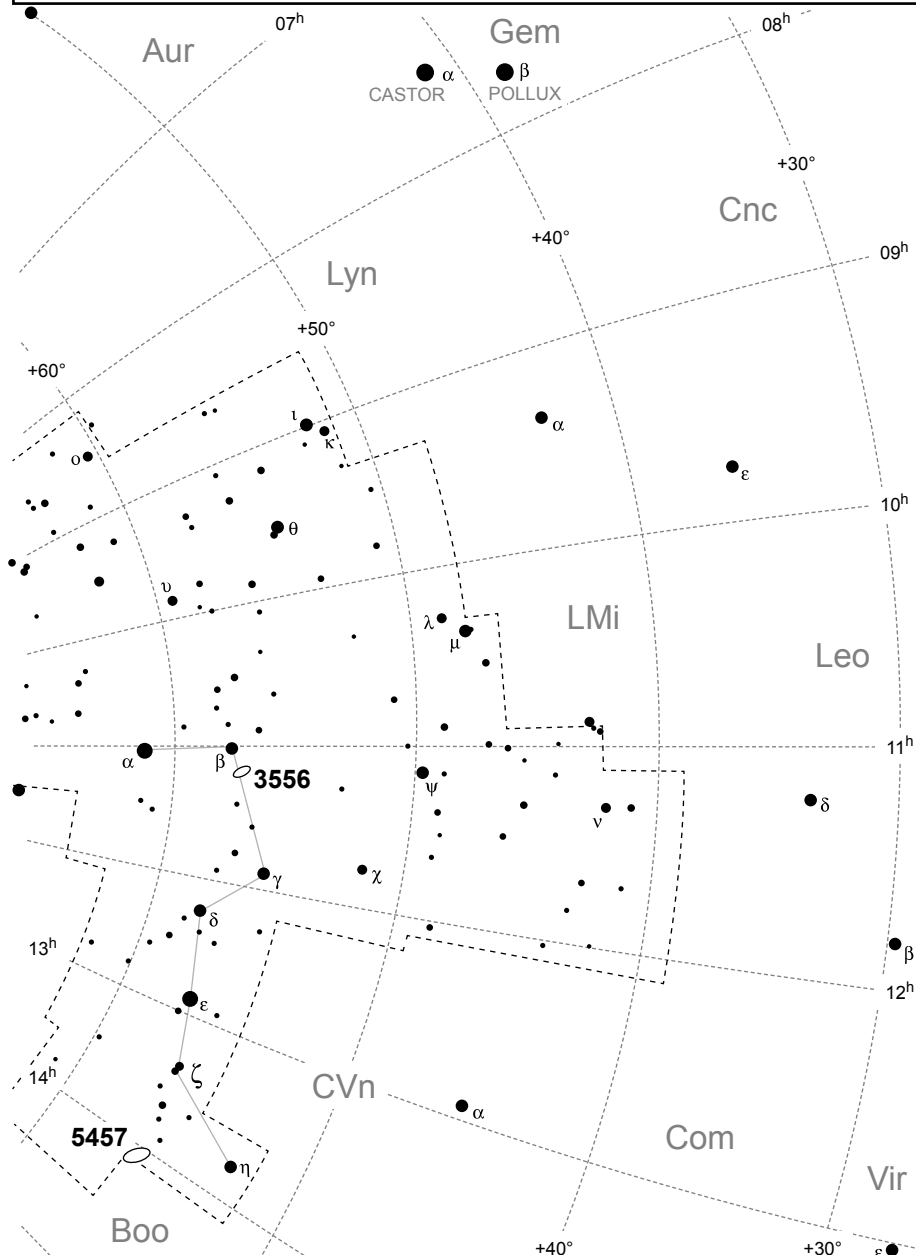
Visibility: Early January through late May

Culmination: Apr 22 (21:00), Mar 08 (00:00), Jan 21 (03:00)



N★ 209

Origin: Ancient Greek (Ptolemy)



NGC 3556, M 108	11 <sup>h</sup> 11 <sup>m</sup> 31 <sup>s</sup> +55°40'31"	NGC 5457, M 101	14 <sup>h</sup> 03 <sup>m</sup> 13 <sup>s</sup> +54°20'53"
zeta UMa, HD 116656	13 <sup>h</sup> 23 <sup>m</sup> 56 <sup>s</sup> +54°55'31"		



# Vela

The Sails of the ship Argo

Vel, Velorum  
09<sup>h</sup>25<sup>m</sup>, -49°

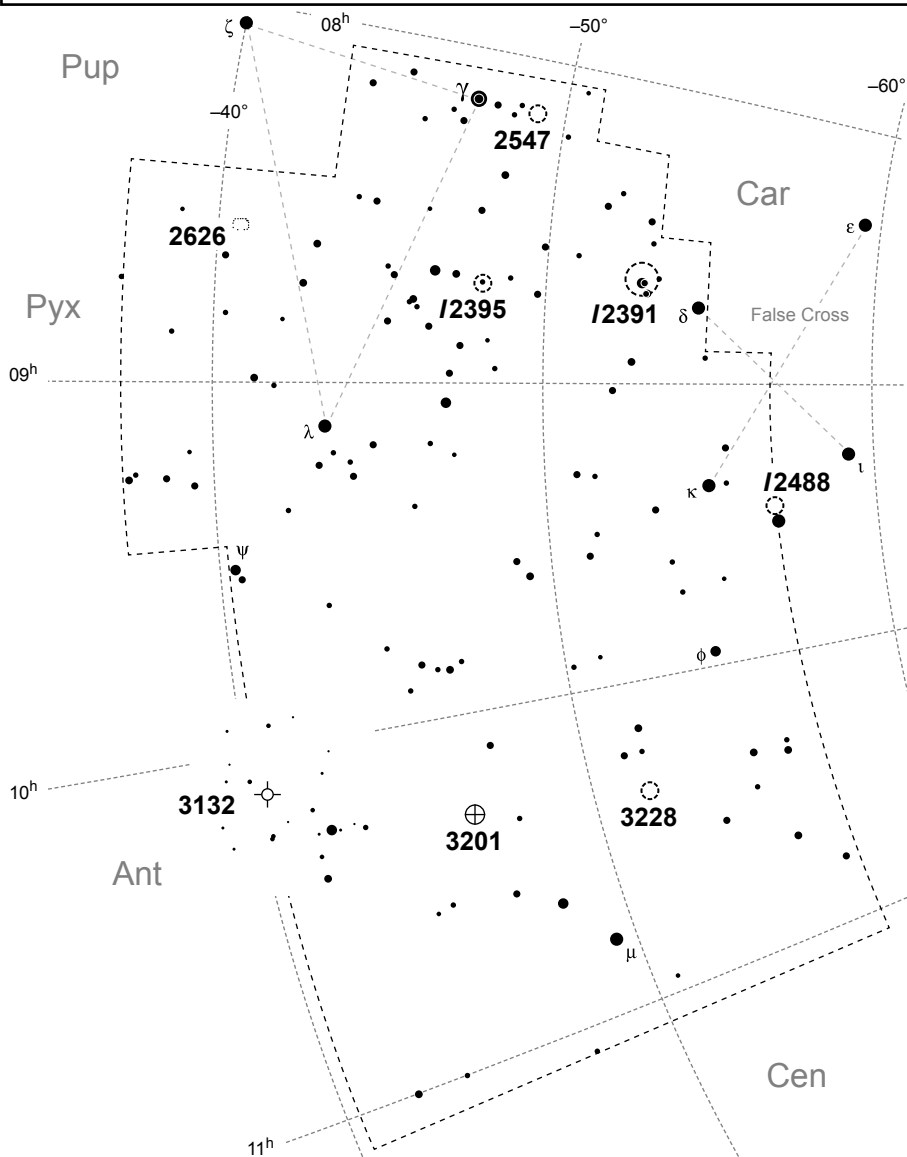


Visibility: September to July (December to late April)  
Culmination: Apr 08 (21:00), Feb 22 (00:00), Jan 07 (03:00)



N ★ 214

Origin: Ancient Greek; La Caille (1752)



★ gamma Vel, SAO 219504	08 <sup>h</sup> 09 <sup>m</sup> 32 <sup>s</sup> -47°20'12"	⊙ IC 2488, A 34	09 <sup>h</sup> 27 <sup>m</sup> 36 <sup>s</sup> -57°00'00"
⊙ NGC 2547, A 29	08 <sup>h</sup> 10 <sup>m</sup> 26 <sup>s</sup> -49°10'03"	⊙ NGC 3132, C 74, A 37	10 <sup>h</sup> 07 <sup>m</sup> 02 <sup>s</sup> -40°26'11"
⊙ NGC 2626	08 <sup>h</sup> 35 <sup>m</sup> 32 <sup>s</sup> -40°40'18"	⊕ NGC 3201, B 44, C 79	10 <sup>h</sup> 17 <sup>m</sup> 37 <sup>s</sup> -46°24'40"
⊙ IC 2391, C 85, A 31	08 <sup>h</sup> 40 <sup>m</sup> 36 <sup>s</sup> -53°02'00"	⊙ NGC 3228	10 <sup>h</sup> 21 <sup>m</sup> 24 <sup>s</sup> -51°44'00"
⊙ IC 2395	08 <sup>h</sup> 42 <sup>m</sup> 37 <sup>s</sup> -48°06'48"		

# Virgo

The Maiden

Vir, Virginis  
13<sup>h</sup>20<sup>m</sup>, -04°

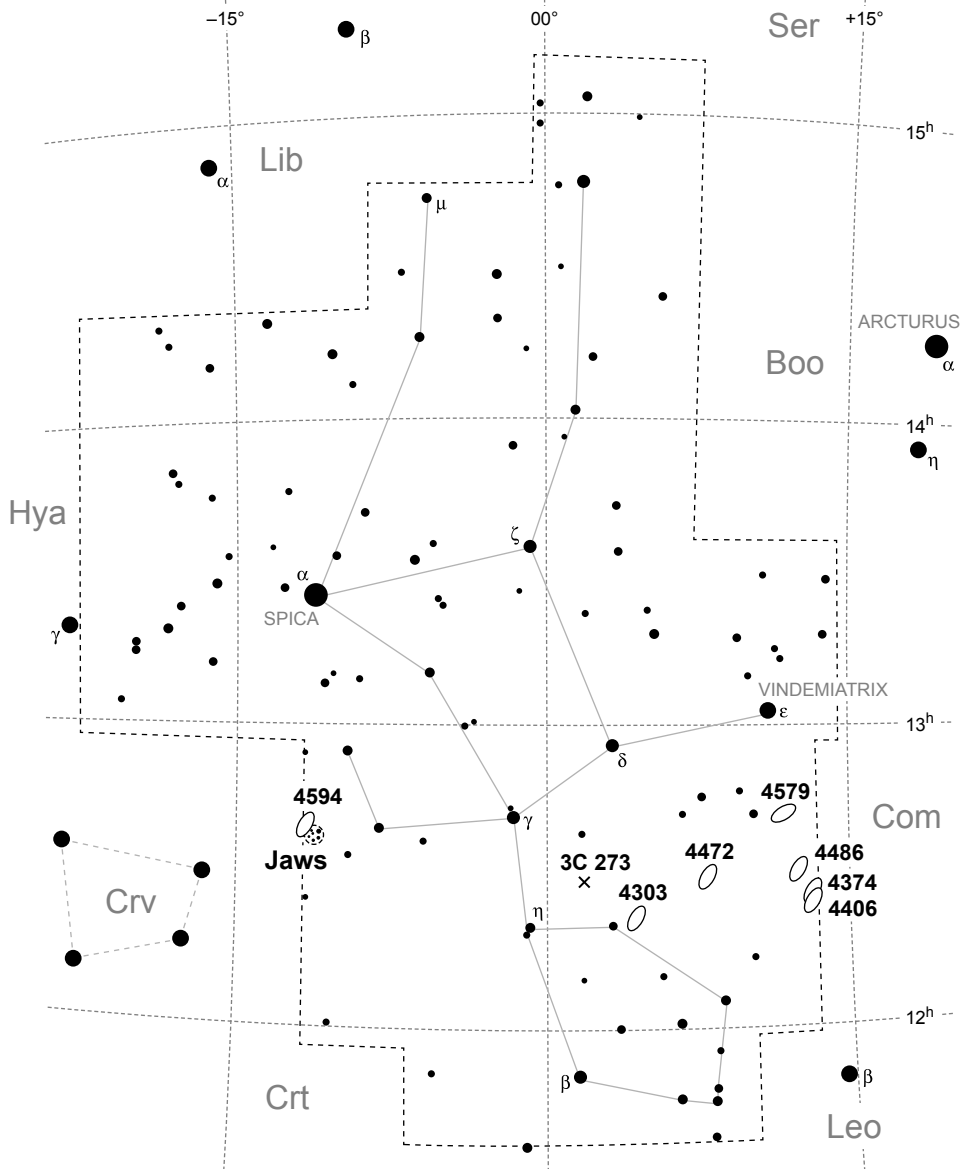


Visibility: Mid-December to August (mid-Feb to late-Jun)  
Culmination: Jun 06 (21:00), Apr 23 (00:00), Mar 08 (03:00)



N★ 169

Origin: Ancient Greek (Ptolemy)



○ NGC 4303, M 61	12 <sup>h</sup> 21 <sup>m</sup> 55 <sup>s</sup> +04°28'29"	○ NGC 4486, M 87	12 <sup>h</sup> 30 <sup>m</sup> 49 <sup>s</sup> +12°23'28"
○ NGC 4374, M 84	12 <sup>h</sup> 25 <sup>m</sup> 04 <sup>s</sup> +12°53'13"	○ NGC 4579, M 58	12 <sup>h</sup> 37 <sup>m</sup> 43 <sup>s</sup> +11°49'04"
○ NGC 4406, M 86	12 <sup>h</sup> 26 <sup>m</sup> 12 <sup>s</sup> +12°56'45"	☉ Jaws Asterism	12 <sup>h</sup> 38 <sup>m</sup> +11°32'
○ NGC 4472, M 49	12 <sup>h</sup> 29 <sup>m</sup> 47 <sup>s</sup> +08°00'00"	○ NGC 4594, Sombrero, M104	12 <sup>h</sup> 39 <sup>m</sup> 59 <sup>s</sup> -11°37'23"

# Volans

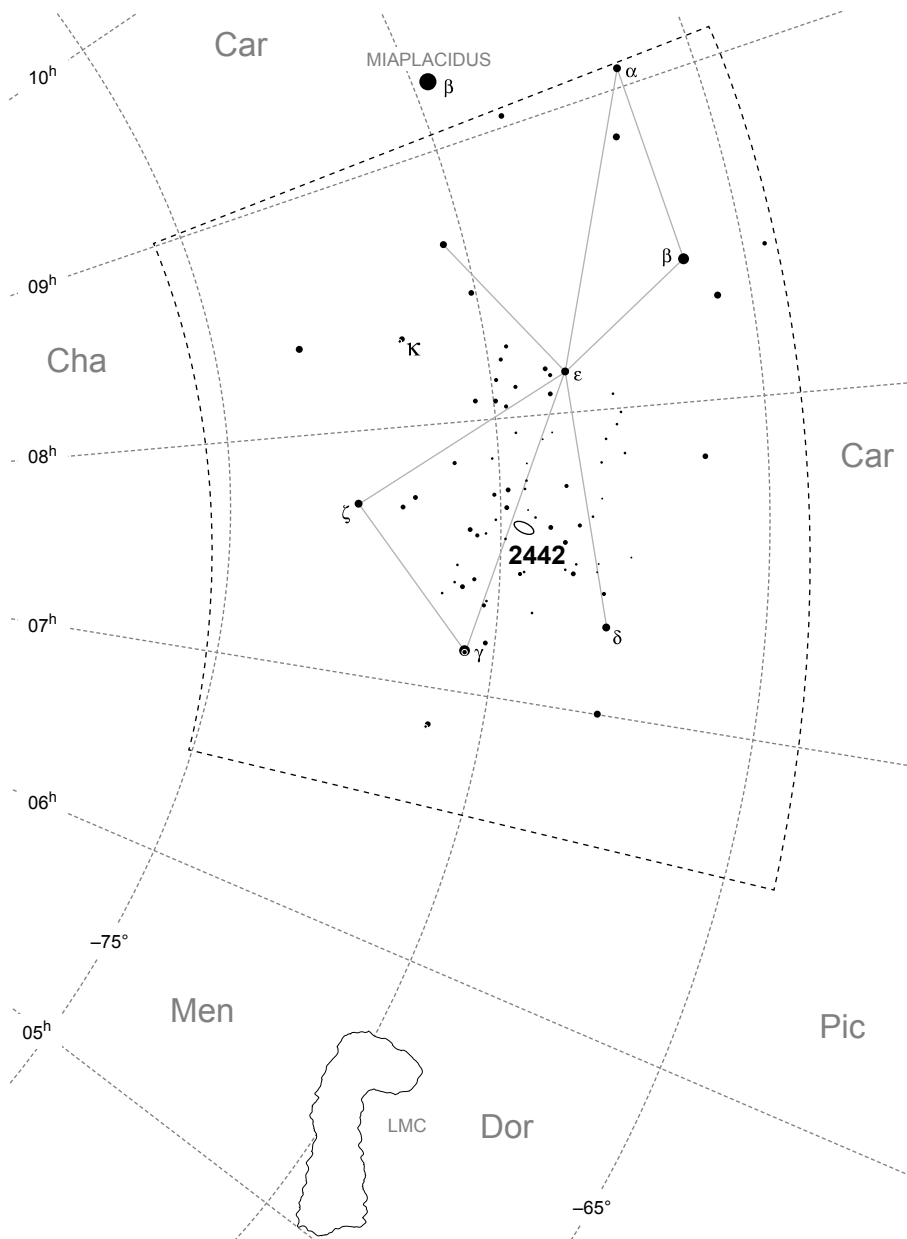
The Flying Fish

Vol, Volantis  
07<sup>h</sup>40<sup>m</sup>, -70°



Visibility: Year-round; best mid-November to mid-April  
Culmination: Mar 13 (21:00), Jan 27 (00:00), Dec 13 (03:00)

N★ 31  
Origin: Keyser & de Houtman (1597)



NGC 2442	07 <sup>h</sup> 36 <sup>m</sup> 24 <sup>s</sup> -69°31'47"	★ ★ kappa Vol, SAO 256497	08 <sup>h</sup> 19 <sup>m</sup> 49 <sup>s</sup> -71°30'54"
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# Vulpecula

The Little Fox

Vul, Vulpeculae  
20<sup>h</sup>20<sup>m</sup>, +25°

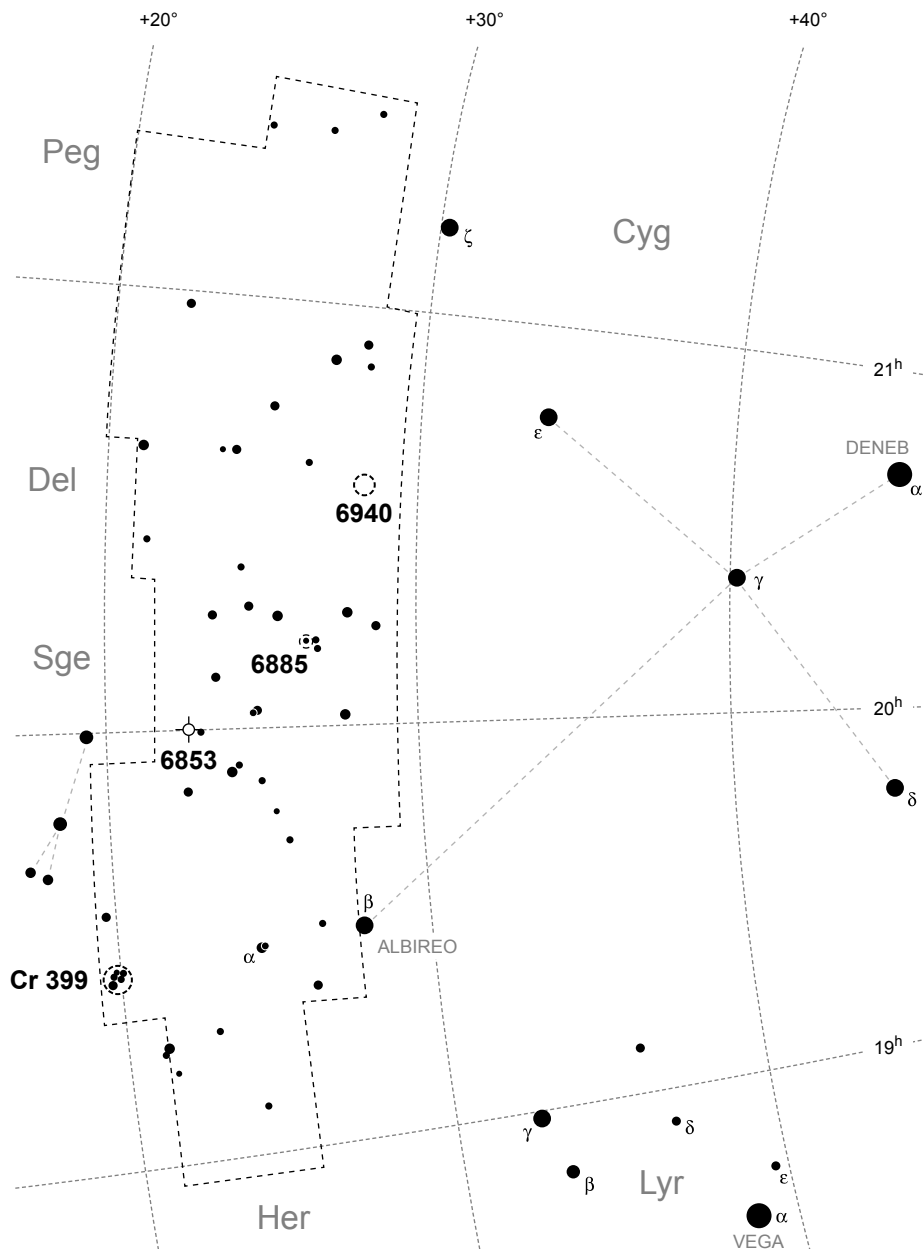


Visibility: Mid-April through early November  
Culmination: Sep 22 (21:00), Aug 08 (00:00), Jun 23 (03:00)



N★ 68

Origin: Johannes Hevelius (1690)

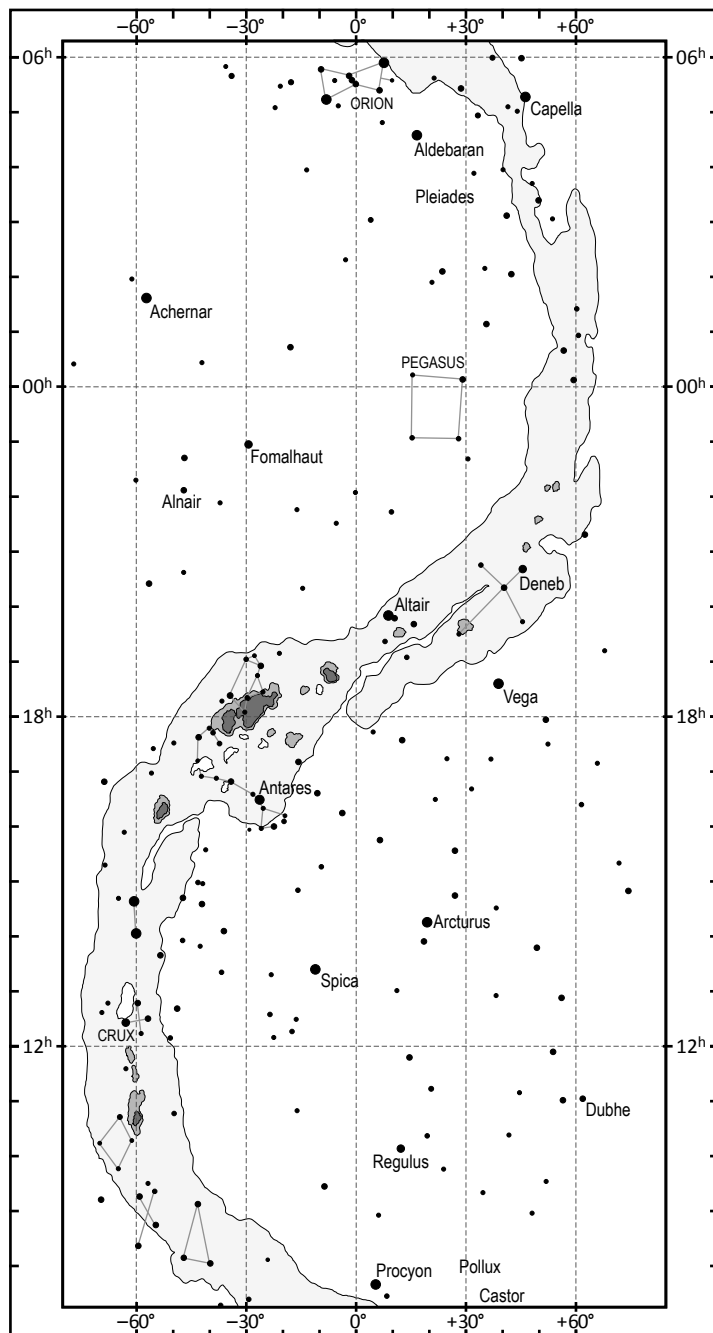


Collinder 399, Coathanger	19 <sup>h</sup> 26 <sup>m</sup> 12 <sup>s</sup> +20°05'33"	NGC 6885, C 37	20 <sup>h</sup> 12 <sup>m</sup> +26°29'
NGC 6853, M27, Dumb-Bell	19 <sup>h</sup> 59 <sup>m</sup> 36 <sup>s</sup> +22°43'16"	NGC 6940	20 <sup>h</sup> 34 <sup>m</sup> 24 <sup>s</sup> +28°17'

# The Milky Way

Galactic centre: RA 17<sup>h</sup> 46<sup>m</sup>, Dec -29° 00'

Galactic anticentre: RA 05<sup>h</sup> 46<sup>m</sup>, Dec +29° 00'



The outline of the Milky Way is shown in the accompanying diagram, at three brightness contours. The faintest (outer) contour shows the Milky Way as it may appear at a true-dark site to a perfectly dark-adapted observer.

The innermost contour shows the brightest portions of the Milky Way. These are the Great Sagittarius Star Cloud [18<sup>h</sup>, -30°], the Scutum Star Cloud [18<sup>h</sup>45<sup>m</sup>, -07°], the Norma Star Cloud [16<sup>h</sup>15<sup>m</sup>, -54°], and the region around eta Carinae [10<sup>h</sup>45<sup>m</sup>, -60°].

An intermediate contour level shows the next-brightest regions, mostly surrounding the star clouds just mentioned, with noticeable zones in Cygnus, Aquila, Ophiuchus and Centaurus.

The most indistinct portion of the Milky Way is around the Anti-centre, 180° away from Sagittarius, along the Taurus-Auriga border.

Noticeable dark patches include the Coal Sack near Crux and the Pipe Nebula in Ophiuchus [17<sup>h</sup>30<sup>m</sup>, -26°].

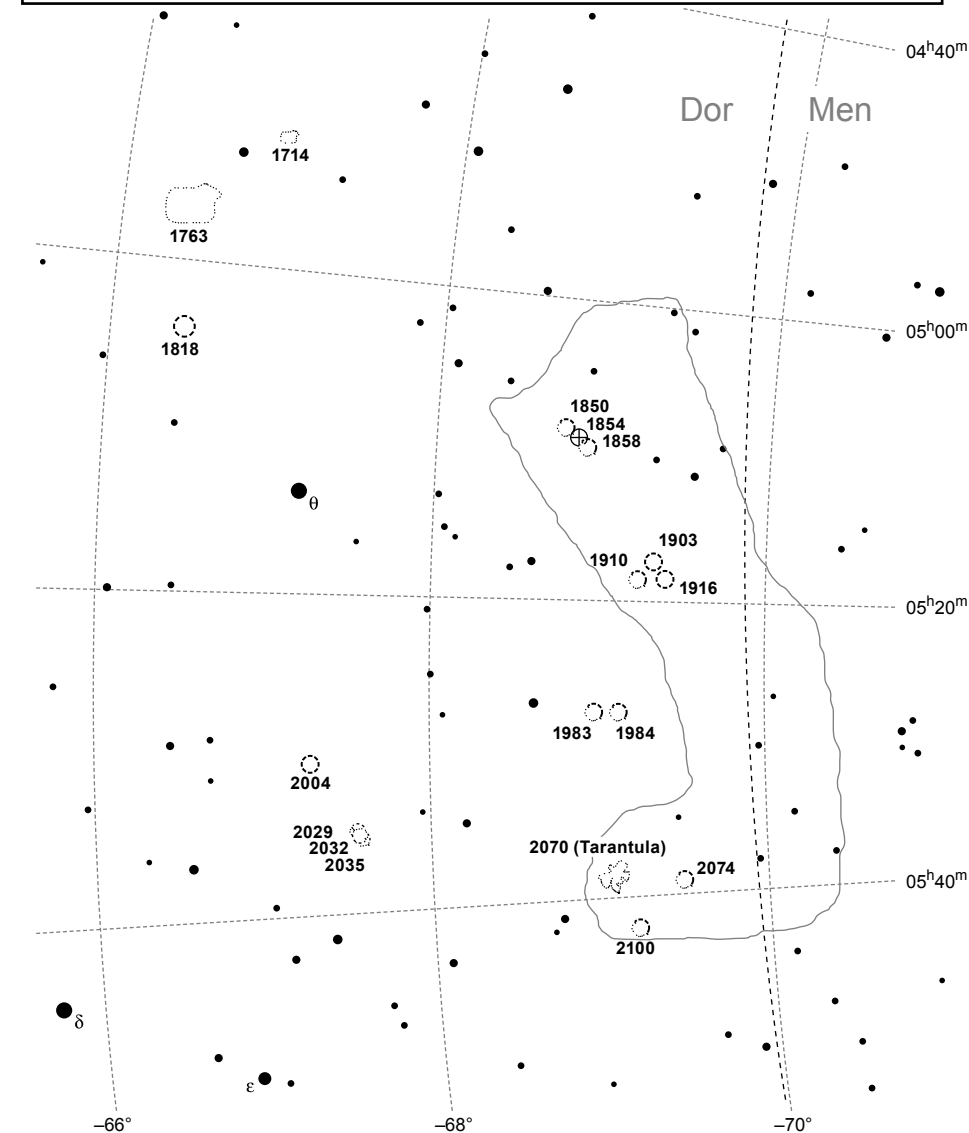
Extensive dark regions include the Great Rift (stretching from Sagittarius past Altair towards Deneb) and the Great Llama (from epsilon Scorpii towards the Coal Sack, with alpha and beta Centauri seen as the Eyes of the Llama). The Great Llama is known as the Dark Emu to certain Aboriginal peoples.

# Large Magellanic Cloud

LMC 05<sup>h</sup>25<sup>m</sup>, -70°

Visibility: Year-round; best early October to mid-March  
Culmination: Feb 06 (21:00), Dec 23 (00:00), Nov 08 (03:00)

★★★★★

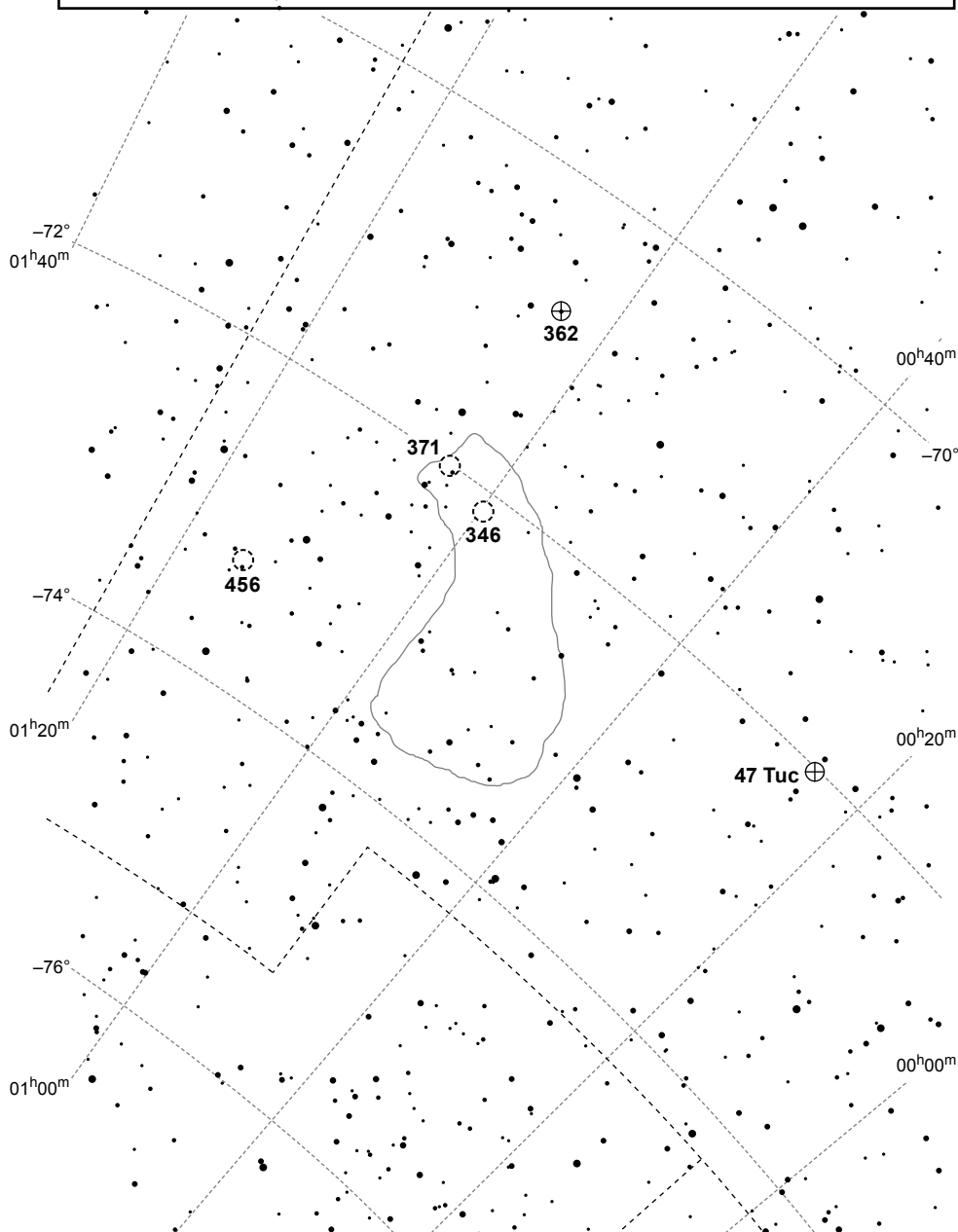


☉ NGC 1714	04 <sup>h</sup> 52 <sup>m</sup> 08 <sup>s</sup> -66°55'23"	☉ NGC 1903	05 <sup>h</sup> 17 <sup>m</sup> 22 <sup>s</sup> -69°20'16"	☉ NGC 2032	05 <sup>h</sup> 35 <sup>m</sup> 24 <sup>s</sup> -67°35'01"
☉ NGC 1763	04 <sup>h</sup> 56 <sup>m</sup> 52 <sup>s</sup> -66°24'25"	☉ NGC 1916	05 <sup>h</sup> 18 <sup>m</sup> 38 <sup>s</sup> -69°24'23"	☉ NGC 2029	05 <sup>h</sup> 35 <sup>m</sup> 29 <sup>s</sup> -67°34'06"
☉ NGC 1818	05 <sup>h</sup> 04 <sup>m</sup> 14 <sup>s</sup> -66°26'02"	☉ NGC 1910	05 <sup>h</sup> 18 <sup>m</sup> 43 <sup>s</sup> -69°14'12"	☉ NGC 2035	05 <sup>h</sup> 35 <sup>m</sup> 32 <sup>s</sup> -67°35'06"
☉ NGC 1850	05 <sup>h</sup> 08 <sup>m</sup> 46 <sup>s</sup> -68°45'39"	☉ NGC 1984	05 <sup>h</sup> 27 <sup>m</sup> 41 <sup>s</sup> -69°08'05"	☉ NGC 2070	05 <sup>h</sup> 38 <sup>m</sup> 42 <sup>s</sup> -69°06'00"
⊕ NGC 1854	05 <sup>h</sup> 09 <sup>m</sup> 20 <sup>s</sup> -68°50'53"	☉ NGC 1983	05 <sup>h</sup> 27 <sup>m</sup> 48 <sup>s</sup> -68°59'12"	☉ NGC 2074	05 <sup>h</sup> 39 <sup>m</sup> 03 <sup>s</sup> -69°29'54"
☉ NGC 1858	05 <sup>h</sup> 09 <sup>m</sup> 56 <sup>s</sup> -68°54'06"	☉ NGC 2004	05 <sup>h</sup> 30 <sup>m</sup> 40 <sup>s</sup> -67°17'14"	☉ NGC 2100	05 <sup>h</sup> 42 <sup>m</sup> 09 <sup>s</sup> -69°12'44"

# Small Magellanic Cloud

SMC 00<sup>h</sup>55<sup>m</sup>, -73°

Visibility: Year-round; best mid-July to mid-January  
Culmination: Nov 30 (21:00), Oct 16 (00:00), Aug 31 (03:00)



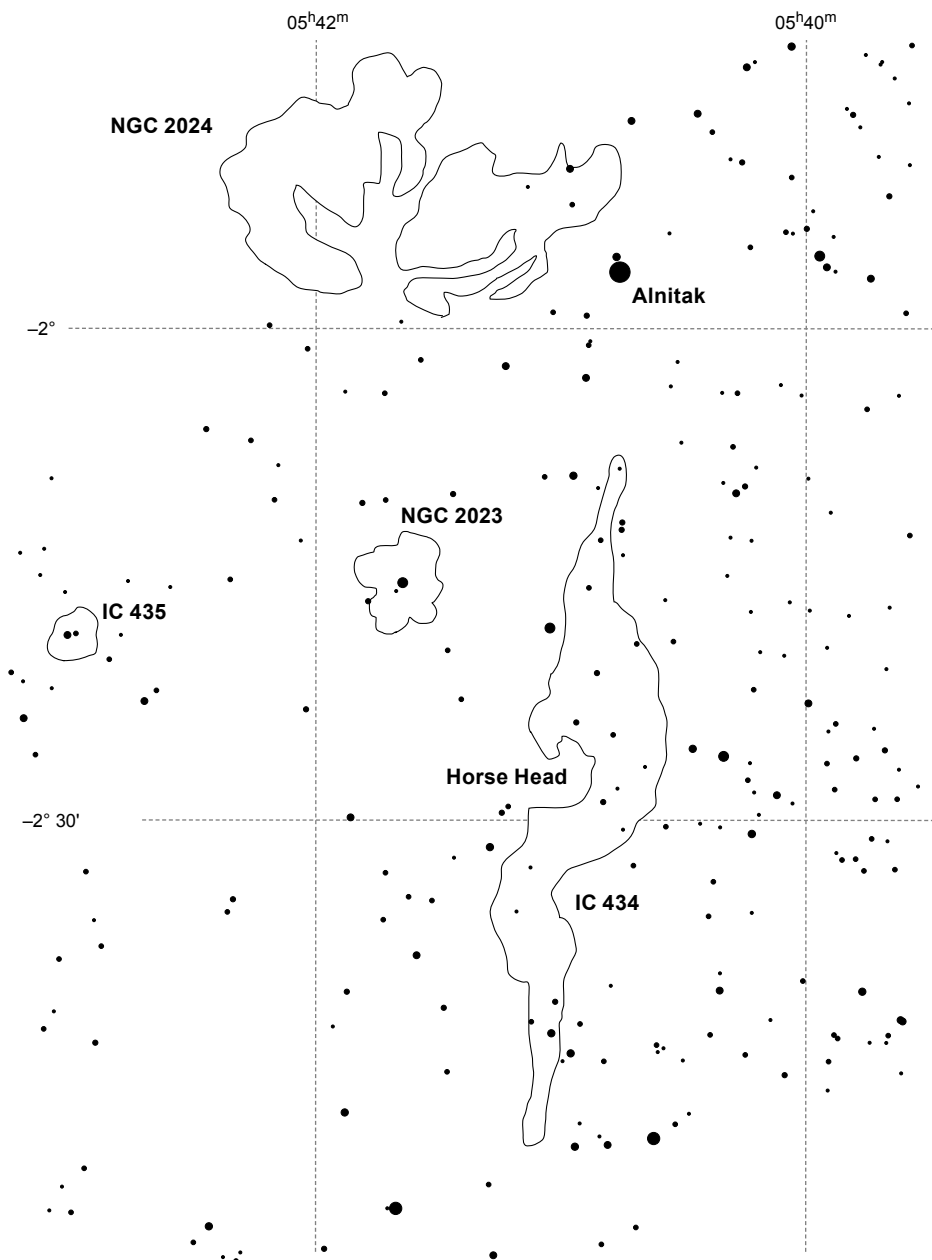
NGC 346	00 <sup>h</sup> 59 <sup>m</sup> 04 <sup>s</sup> -72°10'42"	NGC 456	01 <sup>h</sup> 13 <sup>m</sup> 42 <sup>s</sup> -73°17'30"
NGC 371	01 <sup>h</sup> 03 <sup>m</sup> 30 <sup>s</sup> -72°03'18"		

# Horse Head Nebula

Barnard 33 05<sup>h</sup>40<sup>m</sup>59<sup>s</sup>, -02°27.5'

Visibility: Late August to late-April

Culmination: Feb 06 (21:00), Dec 26 (00:00), Nov 08 (03:00)



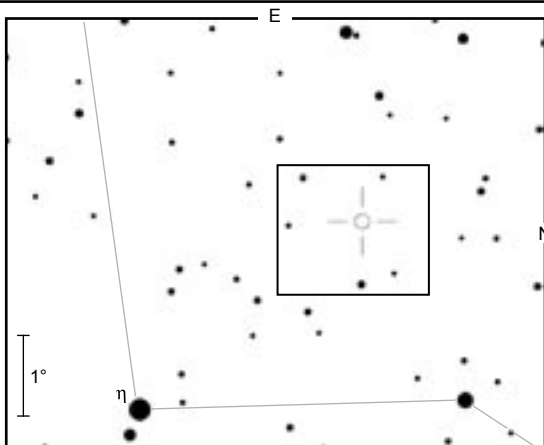
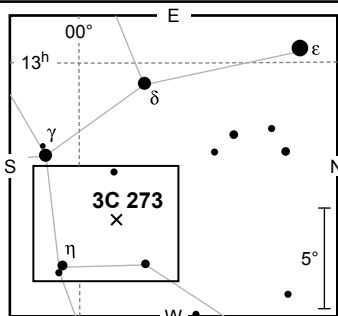


# 3C 273

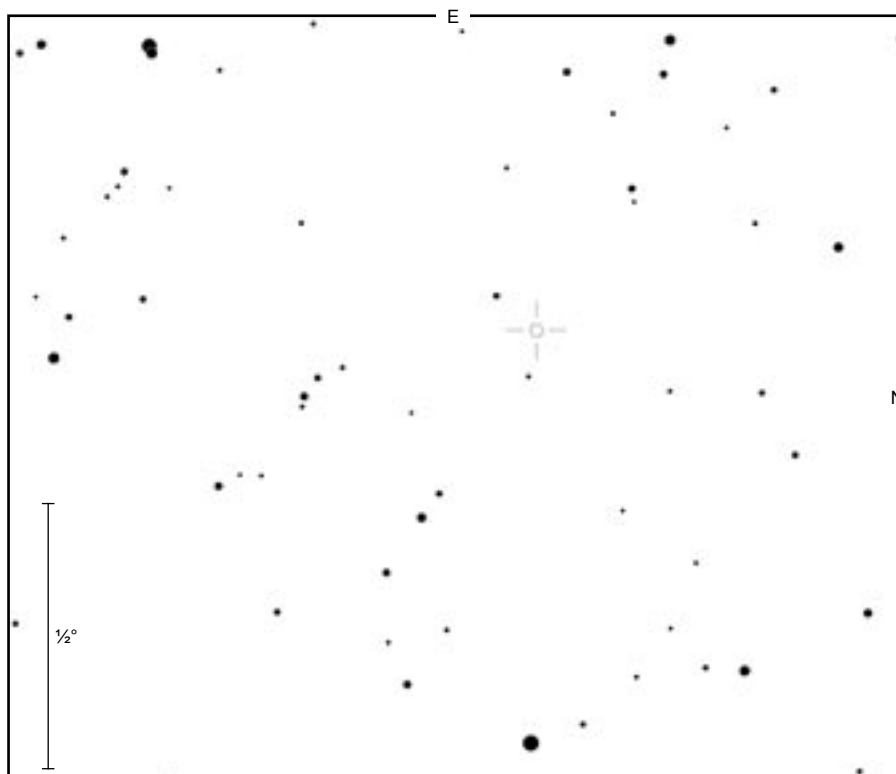
12<sup>h</sup> 29<sup>m</sup> 07<sup>s</sup>, +02° 03' 09"

Visibility: February to late-June

Culmination: May 25 (21:00), Apr 17 (00:00), Feb 18 (03:00)



3C 273, discovered in 1959, is the brightest ( $V=12.9$ ) quasar known and one of the closest. It lies 2.4 Giga-light years away and is 4 trillion times brighter than the Sun. It lies at the centre of a giant elliptical galaxy and is classified as an AGN (active galactic nucleus). Its energy source is presumably a massive black hole interacting with a surrounding accretion disk. 3C 273 is the zero-point for the International Celestial Reference System (ICRS).



# Proxima Centauri

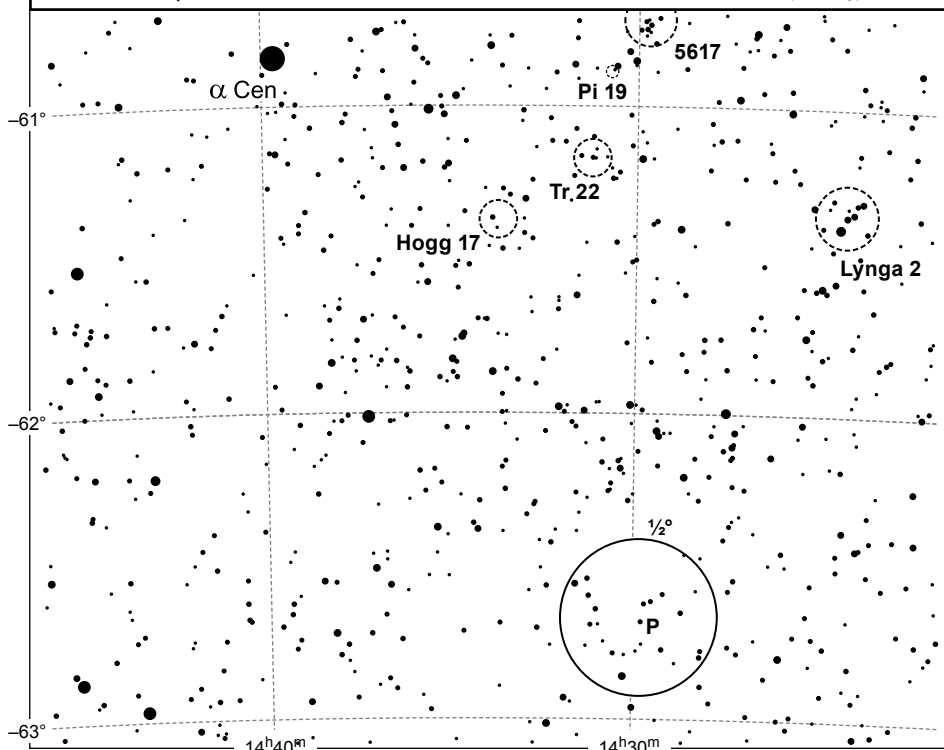
14<sup>h</sup> 29<sup>m</sup> 43<sup>s</sup>, -62° 40' 46"

Visibility: Year-round; best mid-Feb to early Aug

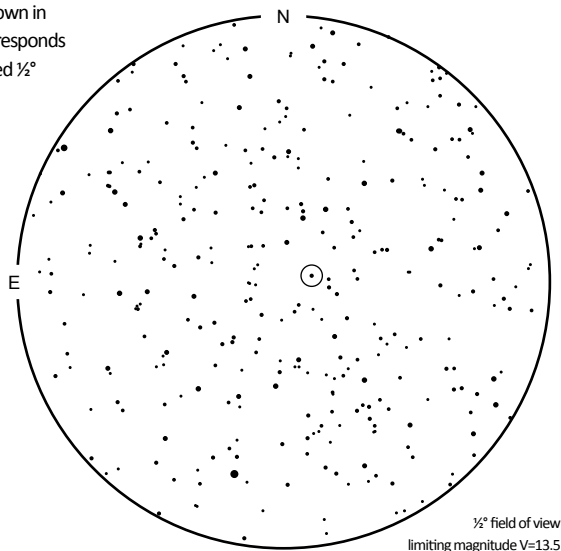
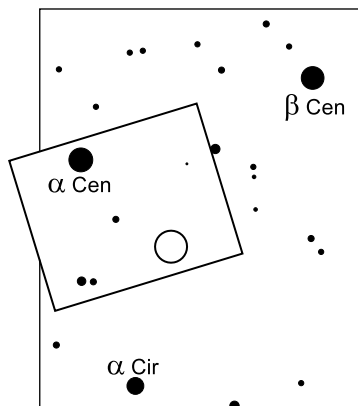
Culmination: Jun 29 (21:00), May 12 (00:00), Mar 25 (03:00)

V645 Cen, TYC 9010-04949-1, LDS 494

V=11.5, B-V=+1.97 spectral type M6Ve V



The general location of Proxima Centauri is shown in the diagram below, in which the rectangle corresponds to the chart above, and the circle to the detailed 1/2° field-of-view to the right.



## Deep-Sky objects plotted on the ConCards

Object ID	Cross-identifications	RA (J.2000) Dec	Type	Notes
<b>Andromeda</b>				
NGC 7662	Copeland's Blue Snowball, C 22, PN G106.5-17.6	23 <sup>h</sup> 25 <sup>m</sup> 54 <sup>s</sup> +42° 32' 06"	pn	V=12.0, d=31" x 27"
NGC 224	Andromeda Galaxy, M 31, LEDA 2557	00 42 44 +41 16 09	gx	V=4.3, d=186' x 62'
NGC 221	M 32, Arp 168, LEDA 2555	00 42 42 +40 51 57	gx	V=9.2, d=9.1' x 6.6'
NGC 752	C 28, Cr 23, Mel 12	01 57 35 +37 50	oc	V=5.7, d=75'
<b>Antlia</b>				
NGC 2997	B 41b, ESO 434-35, LEDA 27978	09 45 39 -31 11 25	gx	V=9.4, d=9.5' x 6.8'
<b>Apus</b>				
delta Apodis	BSO 22, HD 145366 & HD 145388	16 20 27 -78 40 02	m*	V=4.68 & 5.27
NGC 6101	D 68, B 74, C 107, GCI 40	16 25 48 -72 12 06	gc	V=10.2, d=5'
<b>Aquarius</b>				
NGC 6981	M 72, B 125, GCI 118	20 53 28 -12 32 13	gc	V=9.3, d=6.6'
NGC 7009	Saturn Nebula, B 126, C 55, PN G037.7-34.5	21 04 11 -11 21 48	pn	V=12.8
NGC 7293	Helix Nebula, B 129, C 63, PN G036.1-57.1, A 100	22 29 39 -20 50 14	pn	V=13.5, d=15' x 12'
NGC 7089	M 2, B 127, GCI 121, A 98	01 33 27 -00 49 24	gc	V=6.3, d=16'
<b>Aquila</b>				
NGC 6709	Cr 392	18 51 18 +10 19	oc	V=6.7, d=14'
NGC 6738	Cr 396	19 01 18 +11 37	oc	V=8.3, d=15'
Barnard 133	LDN 531	19 06 10 -06 53 45	dn	d=10' x 5'
NGC 6781	PN G041.8-02.9	19 18 28 +06 32 19	pn	V=12, d=1.5'
Barnard 142	LDN 688	19 39 41 +10 31	dn	d=40'
Barnard 143	LDN 694	19 40 42 +10 57	dn	d=30'
<b>Ara</b>				
NGC 6193	D 413, C 82, Cr 310, vdBH 195, A 70	16 41 24 -48 46 09	oc	V=5.2, d=14'
NGC 6208	D 364, Cr 313, vdBH 198	16 49 28 -53 43 42	oc	V=7.2, d=18'
IC 4651	Cr 327, Mel 169, vdBH 224	17 24 52 -49 56 36	oc	V=6.9, d=10'
NGC 6397	L III.11, D 366, B 98, C 86, GCI 74, A 79	17 40 41 -53 40 25	gc	V=6.7, d=31'
<b>Aries</b>				
gamma Arietis	Mesarthim, S Ari, HD 11502 & HD 11503	01 53 32 +19 17 37	m*	V=4.83 & 4.75
30 Arietis	HD 16232 & HD 16246	02 37 01 +24 38 51	m*	V=7.09 & 6.50
<b>Auriga</b>				
NGC 1912	M 38, Cr 67	05 28 43 +35 51 18	oc	V=6.4, d=20'
NGC 1960	M 36, Cr 71	05 36 12 +34 08 24	oc	V=6.0, d=10'
NGC 2099	Auriga Salt-and-Pepper, M 37, Cr 75	05 52 19 +32 33 12	oc	V=5.6, d=14'
<b>Boötis</b>				
NGC 5466	GCI 27, Mel 124	14 05 27 +28 32 04	gc	V=9.0, d=9'
epsilon Boötis	36 Boo, HD 129988 & 9, Izar, Mirac, Pulcherrima	14 44 59 +27 04 30	m*	V=5.12 & 2.70
mu Boötis	51 Boo, SAO 64686 & 7, Alkalurops, Venabulum	15 24 29 +37 22 38	m*	V=4.31 & 6.50
<b>Caelum</b>				
NGC 1679	AGC 23772, ESO 422-1, LEDA 16120	04 49 56 -31 58 02	gx	d=2.8' x 1.6'
gamma Caeli	HD 32831 & HD 32846, JC 9	05 04 24 -35 29 00	m*	V=4.55 & V=6.34
<b>Cancer</b>				
NGC 2632	Praesepe, Beehive, Manger, M 44, Cr 189, Mel 88	08 40 24 +19 41 00	oc	V=3.1, d=70'
NGC 2682	M 67, Cr 204	08 51 18 +11 48 00	oc	V=6.9, d=25'

Object ID	Cross-identifications	RA (J.2000) Dec	Type	Notes
<b>Canes Venatici</b>				
NGC 4736	M 94, LEDA 43495	12 <sup>h</sup> 50 <sup>m</sup> 53 <sup>s</sup> +41° 07' 09"	gx	d=12.6' x 11.0'
NGC 5272	M 3, GCl 25	13 42 11 +28 22 32	gc	V=6.2, d=18'
<b>Canis Major</b>				
NGC 2287	M 41, Cr 118, A 21	06 46 00 -20 46 00	oc	V=4.5, d=39'
NGC 2362	Tau CMa, Northern Jewel Box, C 64, Cr 136, A 22	07 18 36 -24 59 00	oc	V=4.1, d=5'
<b>Canis Minor</b>				
eta Canis Minoris	5 CMi, HD 58923, SAO 115477	07 28 02 +06 56 32	m*	V=5.2 & 10.4, 4"
Dolidze 26		07 30 06 +11 54 00	oc	d=23'
<b>Capricornus</b>				
alpha Cap	5 & 6 Cap, HD 192876 & 192947, Algedi	20 17 39 -12 30 30	m*	V=4.2 & 3.6
NGC 7099	M 30, B 128, GCl 122, A 99	21 40 22 -23 10 45	gc	V=7.7, d=12'
<b>Carina</b>				
NGC 2516	Southern Beehive, L II.3, C 96, Cr 172, A 28	07 58 06 -60 45 00	oc	V=3.8, d=30'
NGC 2808	D 265, B 41, GCl 13, A 32	09 12 03 -64 51 46	gc	V=6.9, d=14'
NGC 2867	C 90, ESO 126-8, PN G278.1-05.9	09 21 25 -58 18 41	pn	V=9.7, d=10"
NGC 3114	D 297, Cr 215, vdBH 86, A 35	10 02 00 -60 06 00	oc	V=4.2, d=35'
IC 2581	Cr 222, vdBH 97, A 40	10 27 30 -57 38 00	oc	V=4.3, d=5'
NGC 3293	Gem Cluster, L II.8, Cr 224, Gum 30, RCW 51, A 41	10 35 49 -58 13 00	oc	V=4.7, d=6'
NGC 3324	Cr 225, A 42	10 37 19 -58 39 36	oc	V=6.7, d=12'
IC 2602	Southern Pleiades, L II.9, C 102, A 43	10 43 12 -64 24 00	oc	V=1.5, d=100'
NGC 3372	eta Carinae Nebula, L III.5 / III.6, D 309, C 92, A 44	10 44 19 -59 53 21	bn	V=5.0, d=120'
NGC 3532	Pincushion Cluster, L II.10, D 323, C 91, A 45	11 05 33 -58 43 48	oc	V=3.0, d=50'
<b>Centaurus</b>				
NGC 3766	L III.7, D 289, C 97, Cr 248, A 46	11 36 13 -61 36 55	oc	V=5.3, d=9.3'
NGC 3918	Blue Planetary, ESO 170-13, Wray 16-101, A 47	11 50 18 -57 10 57	pn	V=8.5, d=12'
NGC 4945	Tweezers, D 411, B 57, C 83, LEDA 45279, A 54	13 05 26 -49 28 15	gx	V=8.2, d=20.4' x 4.4'
NGC 5128	Centaurus A, D 482, B 60, C 77, LEDA 46957, A 55	13 25 28 -43 01 09	gx	V=7.0, d=18' x 14'
NGC 5139	Omega Centauri, L I.5, D 440, B 61, C 80, A 56	13 26 46 -47 28 37	gc	V=3.9, d=55'
NGC 5286	D 388, B 64, C 84, GCl 26	13 46 27 -51 22 25	gc	V=7.4, d=11'
NGC 5281	L I.7, D 273, Cr 276, vdBH 152, A 59	13 46 30 -62 54 54	oc	V=5.9, d=7'
NGC 5460	D 431, Cr 280, A 60	14 07 24 -48 20 00	oc	V=5.6, d=35'
Proxima Centauri	V645 Cen, TYC 9010-04949-1, LDS 494	14 29 43 -62 40 46	*	V=11.0
NGC 5662	L III.8, D 342, Cr 284, vdBH 162, A 61	14 35 36 -56 37 00	oc	V=5.5, d=29'
alpha Centauri	HD 128620 & 1, Rigil Kentaurus, Toliman, RHD 1	14 39 41 -60 50 07	*	V=-0.01 & 1.33
<b>Cetus</b>				
NGC 246	Pac-Man Nebula, C 56, PN G118.8-74.7, A 4	00 47 03 -11 52 19	pn	V=11.8, d=4' x 3.5'
NGC 247	Milkweed Seed Galaxy, B 3, C 62, LEDA 2758, A 3	00 47 09 -20 45 38	gx	V=9.6, 20.9' x 5.4'
NGC 1068	Cetus A, M 77, B 9, Arp 37, LEDA 10266, A 9	02 42 41 -00 00 48	gx	V=8.9, 7.6' x 6.8'
<b>Chamaeleon</b>				
NGC 3195	PN G296.6-20.0, C 109	10 09 21 -80 51 29	pn	V=11.6, d=40" x 30"
delta Cha	HD 93779 & 93845, I 294	10 45 16 -80 28 11	m*	V=5.5 & 5.8, 0.6"
<b>Circinus</b>				
NGC 5823	C 88, Cr 290, Mel 131, vdBH 169, A 63	15 05 45 -55 37 30	oc	V=7.9, d=12'
gamma Circini	HD 136415, HJ 4757	15 23 23 -59 19 15	m*	V=4.5 & 4.8, 0.8"
<b>Columba</b>				
NGC 1851	D 508, B 32, C 73, GCl 9, A 15	05 14 07 -40 02 50	gc	V=8.1, d=12'

Object ID	Cross-identifications	RA (J.2000) Dec	Type	Notes
<b>Coma Berenices</b>				
NGC 4254	Coma Pinwheel, M 99, LEDA 39578	12 <sup>h</sup> 18 <sup>m</sup> 50 <sup>s</sup> +14° 25' 00"	gx	V=10.1, d=5.4' x 4.7'
Coma Star Cluster	Cr 256, Mel 111	12 22 30 +25 51 00	oc	V=2.5, d=120'
NGC 4382	M 85, LEDA 40515	12 25 24 +18 11 27	gx	V=10.2, d=7.1' x 5.5'
NGC 4501	M 88, LEDA 41517	12 31 59 +14 25 13	gx	V=10.6, d=6.8' x 3.6'
NGC 4565	C 38, LEDA 42038	12 36 21 +25 59 14	gx	V=9.6, d=14.8' x 2.1'
NGC 4826	Black Eye Galaxy, M 64, LEDA 44182	12 56 44 +21 41 00	gx	V=8.5, d=10.7' x 5.1'
NGC 5024	M 53, GCl 22, Mel 117	13 12 55 +18 10 09	gc	V=8.3, d=13'
<b>Corona Australis</b>				
NGC 6541	D 473, B 104, C 78, GCl 86, A 85	18 08 02 -43 42 20	gc	V=7.3, d=15'
Bernes 157	Magakian 782, A 93	19 01 35 -37 00 55	bn	d=55' x 18'
NGC 6726-7-9	R CrA Nebula, C 68, ESO 396-13, Ced 165b	19 01 38 -36 53 31	bn	d=2' x 2'
SL 42	DCld 000.4-19.5	19 10 16 -37 07 30	dn	d=16' x 7'
<b>Corona Borealis</b>				
zeta CrB	7 CrB, HD 139891 & HR 139892	15 39 23 +36 38 09	m*	V=5.1 & 6.0, 6.4"
sigma CrB	17 CrB, HD 146361 & HR 146362, SAO 65165	16 14 41 +33 51 31	m*	V=5.6 & 6.6, 6.4"
23 Her	SAO 65262, HR 6110, HD 147835	16 22 57 +32 19 59	m*	V=6.4 & 9.8, 31"
<b>Corvus</b>				
NGC 4361	ESO 573-19, PN G294.1+43.6, A 48	12 24 31 -18 47 06	pn	V=13.2, d=2'
Stargate	Canali 1, DSH J1235.7-1201	12 35 46 -12 01 36	ast	V=7.4, d=7'
<b>Crater</b>				
gamma Crateris	15 Crt, SAO 156661, HJ 840	11 24 53 -17 41 02	*	V=4.1 & 7.9, 6"
<b>Crux</b>				
NGC 4052	Cr 251, vdBH 126	12 01 12 -63 13 00	oc	V=8.8, d=9'
NGC 4103	D 291, Cr 252, Mel 109, vdBH 127	12 06 43 -61 15 21	oc	V=7.4, d=6'
NGC 4349	D 292, Cr 255, vdBH 130	12 24 12 -61 52 00	oc	V=7.4, d=5'
alpha Crucis	Acrux, SAO 251904	12 26 36 -63 05 57	m*	V=1.3 & 1.6, 3.9"
Coal Sack	C 99, A 51	12 31 19 -63 44 36	dn	d=400' x 300'
NGC 4609	Coalsack Cluster, D 272, C 98, Cr 263, vdBH 138	12 42 18 -62 59 00	oc	V=6.9, d=4'
NGC 4755	Jewel Box, Kappa Crucis Cluster, L II.12, C 94, A 52	12 53 42 -60 22 00	oc	V=4.2, d=10'
<b>Cygnus</b>				
beta Cyg	6 Cyg, HD 183912 & HD 183914, Albireo	19 30 43 +27 57 35	m*	V=3.1 & 5.1, 34.7"
Barnard 144	Fish on a Platter Nebula, LDN 857	19 58 00 +35 20 00	dn	d=6" x 3"
NGC 6913	M 29, Cr 422, Ocl 168	20 23 56 +38 31 24	oc	V=6.6, d=10'
<b>Delphinus</b>				
NGC 6934	C 47, GCl 117, Mel 230	20 34 11 +07 24 15	gc	V=9.8, d=7.1'
Harrington 9	theta Delphini	20 38 +13 30	ast	V~5.5, d=26'
<b>Dorado</b>				
Large Mag. Cloud	ESO 56-115, LEDA 17223, A 16	05 23.5 -69 45	gx	d=11° x 9°
<b>Equuleus</b>				
gamma Equulei	5 Equ, HD 201601, SAO 126593	21 10 21 +10 07 54	m*	V=4.7 & 8.7, 1.3"
<b>Eridanus</b>				
NGC 1232	B 10a, ESO 547-14, Arp 41, LEDA 11819	03 09 45 -20 34 45	gx	V=9.9, d=6.0' x 4.9'
NGC 1291	NGC 1269, D 487, B 12, ESO 301-2, A 11	03 17 19 -41 06 29	gx	V=8.5, d=9.8' x 8.3'
NGC 1332	ESO 548-18, LEDA 12838	03 26 17 -21 20 04	gx	V=11, d=3.9' x 1.2'
NGC 1535	PN G206.4-40.5, B 22, A 14	04 14 16 -12 44 22	pn	V=10.6, d=20" x 17"
omicron-2 Eri	40 Eri, HD 26965, SAO 131063	04 15 16 -07 39 10	m*	V=4.4 & 9.4, 83"

Object ID	Cross-identifications	RA (J.2000) Dec	Type	Notes
<b>Fornax</b>				
NGC 1097	B 10, C 67, ESO 416-20, Arp 77, LEDA 10488	02 <sup>h</sup> 46 <sup>m</sup> 19 <sup>s</sup> -30° 16' 29"	gx	V=9.3, d=9.5' x 6.3'
NGC 1316	Fornax A, D 548, B 14, ESO 357-22, Arp 154, A 12	03 22 42 -37 12 34	gx	V=8.8, d=11.5' x 7.9'
NGC 1360	B 15, ESO 482-7, PN G220.3-53.9	03 33 15 -25 52 18	pn	V=11.2, d=6.5' x 3.5'
NGC 1365	B 16, ESO 358-17, LEDA 13179, A 13	03 33 36 -36 08 28	gx	V=9.5, d=11.0' x 6.6'
<b>Gemini</b>				
NGC 2129	Cr 77	06 01 06 +23 19 24	oc	V=6.7, d=5'
NGC 2158	Cr 81, Mel 40	06 07 25 +24 05 48	oc	V=8.6, d=5'
NGC 2168	M 35, Cr 82	06 09 06 +24 21 00	oc	V=5.1, d=25'
NGC 2395	Cr 144	07 27 06 +13 35 00	oc	V=8, d=14'
NGC 2392	Clown Nebula, Eskimo, C 39, PN G197.8+17.3	07 29 11 +20 54 42	pn	V=10.1, d=40"
alpha Gem	Castor, 66 Gem, HD 60178/60179	07 34 36 +31 53 19	m*	V=2.9 & 3.8, 2.0"
<b>Grus</b>				
pi-1 Gruis	SAO 231105, HD 212087, I 135	22 22 44 -45 56 53	m*	V=6.5 & 10.7, 2.8"
delta-1 Gruis	HD 213009, SAO 231154, I 1054	22 29 16 -43 29 44	m*	V=3.9 & 12.7, 5.6"
delta-2 Gruis	HD 213080, SAO 231161	22 29 45 -43 44 57	m*	V=4.1 & 8.8, 61"
<b>Hercules</b>				
NGC 6205	Hercules Cluster, M 13, GCI 45	16 41 41 +36 27 37	gc	V=5.8, d=20'
NGC 6210	HD 151121, PN G043.1+37.7	16 44 29 +23 48 00	pn	V=10.2, d=0.3' x 0.2'
alpha Herculis	Rasalgethi, 64 Her, SAO 102680 & SAO 102681	17 14 39 +14 23 25	m*	V=3.5 & 5.7, 4.9"
NGC 6341	M 92, GCI 59	17 17 08 +43 08 12	gc	V=6.3, d=14'
<b>Horologium</b>				
NGC 1261	D 337, B 11, C 87, GCI 5, Mel 19, A 10	03 12 16 -55 13 00	gc	V=9.1, d=6.8'
<b>Hydra</b>				
NGC 2548	M 48, Cr 179, A 30	08 13 42 -05 45	oc	V=5.8, d=30'
NGC 3242	Ghost of Jupiter, Cat's Eye, B 45, C 59, A 39	10 24 46 -18 38 33	pn	V=7, d=40"
NGC 4590	M 68, B 51, GCI 20, Mel 113	12 39 28 -26 44 35	gc	V=9.7, d=11'
NGC 5236	Southern Pinwheel Galaxy, I I.6, M 83, B 63, A 58	13 37 01 -29 51 59	gx	V=7.9, d=10' x 10'
<b>Hydrus</b>				
NGC 1511	ESO 55-4, LEDA 14236	03 59 36 -67 38 06	gx	V=11.0, d=3.6' x 1.3'
<b>Indus</b>				
T Ind	SAO 230635, HD 202874	21 20 10 -45 01 19	*	V=6.0, B-V=+2.5
NGC 7090	ESO 188-12, LEDA 67045	21 36 29 -54 33 24	gx	V=10.5, d=7.8' x 1.3'
<b>Lacerta</b>				
NGC 7209	Cr 444, Ocl 215.0	22 05 18 +46 29 00	oc	V=7.7, d=14'
NGC 7243	C 16, Cr 448, Ocl 221.0	22 15 06 +49 54 00	oc	V=6.4, d=29'
<b>Leo</b>				
NGC 2903	NGC 2905, LEDA 27077	09 32 10 +21 30 03	gx	V=8.8, d=12.6' x 5.5'
NGC 3351	M 95, LEDA 32007	10 43 58 +11 42 12	gx	V=9.8, d=7.6' x 4.5'
NGC 3368	M 96, LEDA 32192	10 46 46 +11 49 10	gx	V=9.3, d=7.8' x 5.2'
NGC 3379	M 105, LEDA 32256	10 47 50 +12 34 55	gx	V=9.5, d=5.1' x 4.7'
NGC 3521	LEDA 33550	11 05 49 -00 02 06	gx	V=9.2, d=10.7' x 5.4'
NGC 3623	M 65, Arp 317B, LEDA 34612	11 18 56 +13 05 32	gx	V=9.2, d=8.7' x 2.5'
NGC 3627	M 66, Arp 16, Arp 317A, LEDA 34695	11 20 15 +12 59 22	gx	V=8.9, d=8.3' x 4.2'
<b>Leo Minor</b>				
Harrington 6	Sailboat Cluster (includes 22 LMi)	10 10 +31 30	ast	V~8, d=45'

Object ID	Cross-identifications	RA (J.2000) Dec	Type	Notes
<b>Lepus</b>				
R Lep	Hind's Crimson Star, HR 1607, HD 31996	04 <sup>h</sup> 59 <sup>m</sup> 36 <sup>s</sup> -14° 48' 23" *		V=7.7, B-V=+5.74
NGC 1904	M 79, B 34, GCl 10, A 17	05 24 11 -24 31 27	gc	V=8.6, d=9.6'
NGC 2017	ESO 554-22	05 39 17 -17 50 48	oc	V~6.5, d=10'
gamma Lep	13 Lep, HD 38393, SAO 170759	05 44 28 -22 26 54	m*	V=3.6 & 6.1, 96"
<b>Libra</b>				
iota-1 Librae	24 Lib, SAO 159090 & SAO 159091	15 12 13 -19 47 30	m*	V=4.5 & 5.3, 57"
NGC 5897	Ghost Globular, B 68, GCl 33, Mel 132	15 17 24 -21 00 36	gc	V=8.4, d=11'
<b>Lupus</b>				
NGC 5822	Cr 289, Mel 130, vdBH 168, A 62	15 04 24 -54 24	oc	V=6.5, d=35'
NGC 5882	IC 1108, ESO 274-7	15 16 50 -45 38 58	pn	V=9.4, d=20"
mu Lupi	SAO 225638, HD 135734, HJ 4753	15 18 32 -47 52 31	m*	V=4.3 & 4.4, 1.3"
NGC 5927	D 389, B 69, GCl 35, vdBH 173	15 28 01 -50 40 22	gc	V=8.9, d=6'
Barnard 228	Bernes 148, DClD 338.8+16.5C, A 64	15 44 00 -34 30	dn	d=240' x 20'
NGC 5986	D 552, B 70, GCl 37, Mel 136	15 46 03 -37 47 10	gc	V=7.6, d=9.6'
<b>Lynx</b>				
NGC 2419	Intergalactic Wanderer, C 25, GCl 12	07 38 09 +38 52 55	gc	V=10.3, d=4.6'
NGC 2683	LEDA 24930	08 52 42 +33 25 10	gx	V=9.7, d=8.7' x 2.5'
<b>Lyra</b>				
epsilon Lyrae	The Double-Double in Lyra	18 44 20 +39 40 12	m*	V=5.1, 6.0, 5.1 & 5.4
Stephenson 1	delta Lyrae Cluster	18 53 30 +36 55	oc	d=20'
NGC 6720	Ring Nebula, M 57, PN G063.1+13.9	18 53 35 +33 01 45	pn	V=8.8, d=3.0' x 2.4'
NGC 6779	M 56, GCl 110, Mel 220	19 16 36 +30 11 04	gc	V=8.3, d=8.8'
<b>Mensa</b>				
IC 2051	ESO 4-7, LEDA 13999	03 52 02 -83 49 56	gx	V=11.6, d=2.7' x 1.6'
gamma Mensae	SAO 256201, HD 37763, HJ 3795	05 31 53 -76 20 30	m*	V=5.2 & 11.2, 38.2"
<b>Microscopium</b>				
iota Microscopii	HR 7943, SAO 230379	20 48 29 -43 59 19	m*	V=4.7 & 13.7, 25.7"
alpha Microscopii	HR 7965, SAO 212472, HJ 5224	20 49 58 -33 46 47	m*	V=4.9 & 9.9, 20.5"
<b>Monoceros</b>				
NGC 2237	Rosette Nebula, C 49, Sh 2-275	06 30 55 +05 02 57	bn	d=90' x 90'
NGC 2239	NGC 2244, C 50, Cr 99, Mel 47	06 31 56 +04 56 35	oc	V=4.8, d=24'
NGC 2261	Hubble's Variable Neb, R Mon, C 46, Ced 83	06 39 10 +08 44 11	rn	V~10, d=2' x 1'
NGC 2264	Christmas Tree Cluster, Cr 112, LBN 911	06 41 00 +09 53 00	oc+bn	V=3.9, d=39'
NGC 2301	Great Bird Cluster, Cr 119	06 51 48 +00 28 00	oc	V=6.0, d=14'
NGC 2323	M 50, Cr 124	07 02 48 -08 22 36	oc	V=5.9, d=14'
<b>Musca</b>				
NGC 4372	B 50, C 108, GCl 19, Mel 112	12 25 45 -72 39 33	gc	V=9.9, d=5'
Dark Python	Dark Doodad, DClD 301.0-08.6, A 49	12 27 31 -71 25 12	dn	d=150' x 12'
NGC 4463	Cr 260, vdBH 135	12 30 00 -64 47 00	oc	V=7.2, d=3.5'
NGC 4833	Southern Butterfly, L1.4, D 164, B 56, C 105, A 53	12 59 35 -70 52 29	gc	V=7.8, d=14'
NGC 5189	IC 4274, B 62, ESO 96-16, Gum 47, Sa 2-95, A 57	13 33 33 -65 58 27	pn	V=10.3, d=2.6'
<b>Norma</b>				
NGC 6067	D 360, C 89, Cr 298, Mel 140, vdBH 186, A 66	16 13 12 -54 13 00	oc	V=5.6, d=14'
NGC 6087	S Normae Cluster, D 326, Cr 300, vdBH 188, A 67	16 18 48 -57 56 00	oc	V=5.4, d=14'
Harvard 10	Cr 299, Ocl 952.0	16 18 48 -54 56 00	oc	V~11, d=25'
NGC 6152	Cr 304, Ocl 961.0	16 32 42 -52 38 00	oc	V=8.1, d=25'

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<b>Octans</b>				
Melotte 227	Cr 411, A 97	20 <sup>h</sup> 12 <sup>m</sup> 06 <sup>s</sup> –79° 19' 00"	oc	V=5.3, d=70'
sigma Octantis	Polaris Australis, HD 177482, SAO 258857	21 08 46 –88 57 23	*	V=5.5
<b>Ophiuchus</b>				
rho Ophiuchi	5 Oph, SAO 184381	16 25 35 –23 26 50	m*	V=5.0 & 5.9, 3.2"
NGC 6171	M 107, B 79, GCl 44	16 32 32 –13 03 13	gc	V=8.9, d=13'
NGC 6218	M 12, B 80, GCl 46, Mel 151, A 71	16 47 15 –01 56 52	gc	V=7.7, d=16'
NGC 6254	M 10, B 83, GCl 49, A 73	16 57 09 –04 05 58	gc	V=6.4, d=20'
NGC 6266	D 627, M 62, B 85, GCl 51, vdBH 210, A 74	17 01 13 –30 06 45	gc	V=7.4, d=15'
NGC 6273	M 19, B 86, GCl 52, A 75	17 02 38 –26 16 05	gc	V=7.5, d=17'
Barnard 59	Sink Hole, LDN 1746, A 77	17 11 06 –27 24	dn	d=60'
36 Ophiuchi	SAO 185199	17 15 21 –26 36 06	m*	V=5.1 & 5.1, 4.6"
Barnard 65	LDN 1772, A 77	17 19 48 –26 38	dn	d=12'
Barnard 66	LDN 1768, A 77	17 20 06 –26 52	dn	d=8'
Barnard 67	A 77	17 22 30 –21 53	dn	d=20' x 8'
Barnard 72	Snake, LDN 66	17 23 35 –23 37	dn	d=21' x 2.5'
Barnard 78	Bowl of the Pipe Nebula, LDN 42, A 77	17 32 00 –25 35	dn	d=180'
NGC 6402	M 14, B 97, GCl 72	17 37 36 –03 14 45	gc	V=8.3, d=11'
IC 4665	Cr 349, Mel 179	17 46 18 +05 43	oc	V=4.2, d=70'
NGC 6572	PN G034.6+11.8	18 12 06 +06 51 13	pn	V=8.4, d=0.3' x 0.2'
NGC 6633	Cr 380	18 27 31 +06 34 12	oc	V=4.6, d=20'
<b>Orion</b>				
NGC 1977	A 19	05 35 15 –04 53 12	oc	V=4.6, d=20' x 10'
NGC 1976	Great Orion Nebula, M 42, LBN 974, A 18	05 35 17 –05 23 28	bn	V=2.9, d=1.1" x 1"
NGC 1982	Mairan's Nebula, M 43	05 35 31 –05 16 00	bn	V~8, d=20' x 15'
Barnard 33	Horse Head	05 40 54 –02 28 00	dn	d=4'
NGC 2024	Flame Nebula	05 41 42 –01 51 00	bn+dn	d=30' x 30'
NGC 2068	M 78, Cederblad 55u, Bernes 102, VDB 59	05 46 45 +00 04 48	rn	d=8' x 6'
NGC 2169	"37" Cluster, Cr 83	06 08 24 +13 57 53	oc	V=5.9, d=5'
<b>Pavo</b>				
NGC 6744	D 262, B 120, C 101, ESO 104-42, A 94	19 09 45 –63 51 21	gx	V=8.3, d=13.2' x 8.3'
NGC 6752	The Starfish, D 295, B 121, C 93, GCl 108, A 95	19 10 52 –59 58 55	gc	V=6.3, d=29'
<b>Pegasus</b>				
NGC 7078	M 15, GCl 120	21 29 58 +12 10 01	gc	V=6.2, d=18'
NGC 7331	NGC 7327, C 30, LEDA 69291	22 36 34 +34 30 07	gx	V=9.5, d=10.2' x 4.2'
<b>Perseus</b>				
NGC 1023	Arp 135, LEDA 10123	02 40 24 +39 03 46	gx	V=9.5, d=7.9' x 3.5'
NGC 1039	M 34, Cr 31	02 42 05 +42 45 42	oc	V=5.2, d=35'
zeta Per	44 Per, HD 24398, SAO 56799	03 54 08 +31 53 01	m*	V=2.9 & 9.2, 12.9"
<b>Phoenix</b>				
zeta Phe	HD 6882, SAO 232306	01 08 23 –55 14 45	m*	V=4.0 & 8.2, 6.8"
<b>Pictor</b>				
iota Pic	Dunlop 18, HD 31203 & HD 31204	04 50 55 –53 27 41	m*	V=5.6 & 6.4, 12.3"
<b>Pisces</b>				
zeta Psc	86 Psc, SAO 109739 & SAO 109740	01 13 44 +07 34 31	m*	V=5.2, 6.2 & 12.2
NGC 628	M 74, LEDA 5974	01 36 42 +15 47 00	gx	d=10.5' x 9.5'
alpha Psc	113 Psc, HD 12446 & HD 12447, Alrisha, Kaitain	02 02 03 +02 45 49	m*	V=4.1, 5.2, 8.3 & 8.6
<b>Piscis Austrinus</b>				
beta PsA	17 PsA, HD 213398, SAO 213883	22 31 30 –32 20 46	m*	V=4.3 & 7.1, 30.4"



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<b>Puppis</b>				
NGC 2298	D 578 , B 37	06 <sup>h</sup> 48 <sup>m</sup> 59 <sup>s</sup> –36° 00' 19"	gc	V=10.0, d=5'
NGC 2422	NGC 2478, M 47, Cr 152, A 23	07 36 35 –14 28 57	oc	V=4.4, d=25'
NGC 2437	M 46, Cr 159, A 24	07 41 42 –14 49 00	oc	V=6.1, d=20'
NGC 2438	PN G231.8+04.1 (in NGC 2437)	07 41 51 –14 43 55	pn	V=10.8, d=1.3'
NGC 2447	M 93, Cr 160, Mel 76, A 26	07 44 30 –23 51 12	oc	V=6.2, d=10'
NGC 2451	Cr 161, vdBH 9, A 25	07 45 24 –37 58 00	oc	V=2.8, d=50'
NGC 2477	L I.3, D 535, C 71, Cr 165, Mel 78, A 27	07 52 06 –38 32 00	oc	V=5.8, d=15'
NGC 2539	Cr 176, Mel 83	08 10 42 –12 50 00	oc	V=6.5, d=9'
NGC 2546	L II.4, D 563, Cr 178, vdBH 22	08 11 54 –37 37 00	oc	V=6.3, d=70'
<b>Pyxis</b>				
NGC 2818A	Hen 2-23, Wray 16-38, PN G261.9+08.5, A 33	09 16 02 –36 37 39	pn	V=11.6, d=1.5'
NGC 2818	D 564, Cr 206, Mel 96, Raab 82, vdBH 59, A 33	09 16 10 –36 37 06	oc	V=8.2, d=9'
<b>Reticulum</b>				
zeta Reticuli	HD 20766 & HD 20807	03 18 13 –62 30 23	m*	V=5.2 & 5.6, 309.6"
NGC 1574	ESO 157-22, LEDA 14965	04 21 59 –56 58 29	gx	V=10.5, d=4.1' x 3.3'
<b>Sagitta</b>				
NGC 6838	M 71, GCI 115, Cr 409, Mel 226	19 53 46 +18 46 42	gc	V=6.1, d= 7.2'
15 Sge	SAO 105635, HD 190406	20 04 07 +17 04 16	m*	V=6, 7, 9.5, 11.3, 11.8
<b>Sagittarius</b>				
NGC 6494	M 23, Cr 356, A 81	17 56 56 –19 00 42	oc	V=5.5, d=25'
NGC 6514	Trifid Nebula, M 20, Cr 360, LBN 27, A 82	18 02 23 –23 01 48	bn	V=6.3, d=28'
Barnard 86	Herschel's Hole in the Heavens, LDN 93	18 02 58 –27 52 06	dn	d=5'
NGC 6523	Lagoon Nebula, L III.13, M 8, A 83	18 03 12 –24 23 00	bn	V=5.8, d=1.5° x 0.7°
NGC 6531	M 21, Cr 363, A 84	18 04 12 –22 29 00	oc	V=5.9, d=14'
Barnard 92	LDN 323	18 15 30 –18 11 00	dn	d=12'
IC 4715	Delle Caustiche, M 24, ESO 591-1, A 88	18 16 –18 50	assoc	V=2.5, d=95' x 35'
NGC 6618	Swan, Omega, Horseshoe, M 17, B 108, A 87	18 20 47 –16 10 18	bn	d=20' x 15'
NGC 6626	M 28, B 110, GCI 94	18 24 33 –24 52 11	gc	V=7.7, d=13.8'
NGC 6637	L I.11, D 613, M 69, B 112, GCI 96	18 31 23 –32 20 53	gc	V=8.3, d=9.8'
IC 4725	M 25, Cr 382, Mel 204, A 89	18 31 42 –19 07 00	oc	V=4.6, d=29'
NGC 6656	L I.12, M 22, B 114, Mel 208, A 90	18 36 24 –23 54 12	gc	V=6.2, d=32'
NGC 6681	D 614, M 70, B 115, GCI 101	18 43 13 –32 17 31	gc	V=9.1, d=8'
NGC 6715	D 624, M 54, B 118, GCI 104	18 55 03 –30 28 43	gc	V=8.4, d=12'
NGC 6723	D 573, B 119, GCI 106, Mel 217, A 92	18 59 33 –36 37 53	gc	V=7.9, d=13'
NGC 6809	L I.14, D 620, M 55, B 122, GCI 113, A 96	19 39 59 –30 57 44	gc	V=7.4, d=19'
NGC 6818	Little Gem Nebula, B 123, PN G025.8-17.9	19 43 58 –14 09 12	pn	V=9.3
<b>Scorpius</b>				
nu Scorpii	Jabbah, 14 Sco, HD 145502	16 12 00 –19 27 38	m*	V=4.3, 5.3 & 6.6
NGC 6093	M 80, B 73, GCI 39, Mel 142	16 17 03 –22 58 30	gc	V=7.9, d=10'
NGC 6121	L I.9, M 4, B 75, GCI 41, A 68	16 23 35 –26 31 32	gc	V=7.1, d=36'
NGC 6124	L I.8, D 514, C 75, Cr 301, A 69	16 25 18 –40 39 00	oc	V=5.8, d=39'
alpha Scorpii	Antares, 21 Sco, SAO 184415	16 29 24 –26 25 55	m*	V=0.96 & 5.4, 2.5"
NGC 6153	ESO 331-6, RCW 112, PN G341.8+05.4	16 31 31 –40 15 14	pn	V=10.9, d=0.4'
mu Sco	HD 151890 & HD 151985	16 51 52 –38 02 51	m*	V=3.1 & 3.6 , 390"
NGC 6231	False Comet Cluster, L II.13, D 499, C 76, A 72	16 54 09 –41 49 36	oc	V=2.6, d=14'
NGC 6281	D 556, Cr 324, vdBH 213, A 76	17 04 42 –37 59 00	oc	V=5.4, d=8'
NGC 6302	Bug Nebula, Bipolar Nebula, C 69, Gum 60	17 13 44 –37 06 16	pn	V=9.6, d=1.5'
NGC 6405	Butterfly Cluster, L III.12, M 6, Cr 341, A 78	17 40 18 –32 12 00	oc	V=4.2, d=20'
NGC 6475	Ptolemy's Cluster, L II.14, M 7, Cr 354, A 80	17 53 48 –34 47 00	oc	V=3.3, d=80'
<b>Sculptor</b>				
NGC 55	String of Pearls, D 507, B 1, C 72, LEDA 1014, A 1	00 14 54 –39 11 55	gx	V=7.9, d=26.9' x 5.4'
NGC 253	Silver Coin, Sculptor Filament, B 4, C 65, A 5	00 47 33 –25 17 18	gx	V=7.1, d=26.9' x 5.9'
NGC 288	B 5, GCI 2, Mel 3, A 6	00 52 45 –26 34 51	gc	V=8.1, d=13'

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<b>Scutum</b>				
NGC 6694	M 26, Cr 389, Mel 212	18 <sup>h</sup> 45 <sup>m</sup> 18 <sup>s</sup> −09° 23′ 00″	oc	V=8.9, d=7′
Barnard 318	—	18 49 42 −06 23 00	dn	d=60′
Barnard 111	LDN 534	18 50 00 −04 57 00	dn	d=120′
NGC 6705	Wild Duck Cluster, M 11, B 116, Cr 391, A 91	18 51 00 −06 16 00	oc	V=5.8, d=14′
Barnard 119A	—	18 54 39 −05 10 00	dn	d=30′
<b>Serpens</b>				
NGC 5904	M 5, GCl 34, Mel 133	15 18 34 +02 04 58	gc	V=5.7, d=23′
NGC 6539	GCl 85	18 04 50 −07 35 09	gc	V=9.3, d=7.9′
NGC 6611	Eagle Nebula, Star Queen, IC 4703, M 16, Gum 83	18 18 48 −13 48 26	bn	d=120′, x 25′
IC 4756	Cr 386, Mel 210, Graff 1	18 38 31 +05 29 24	oc	V=4.6, d=39′
<b>Sextans</b>				
NGC 3115	Spindle Galaxy, B 42, C 53, LEDA 29265, A 36	10 05 14 −07 43 08	gx	V=8.9, d=7.2′ x 3.3′
<b>Taurus</b>				
Pleiades	Seven Sisters, M 45, Cr 42, Mel 22	03 47 29 +24 06 18	oc	d=2°
NGC 1514	PK 165-15 1	04 09 17 +30 46 33	pn	V=10.9, d=2.2′
Hyades	C 41, Cr 50, Mel 25	04 26 54 +15 52 00	oc	d=5.5°
NGC 1647	Cr 54	04 45 54 +19 07 00	oc	V=6.4, d=40′
NGC 1746	Cr 57	05 03 50 +23 46 12	oc	V=6.1, d=42′
NGC 1807	Cr 59	05 10 47 +16 31 00	oc	V=7.0, d=15′
NGC 1952	Crab Nebula, SN 1054, Taurus A, M 1, Sh 2-244	05 34 32 +22 00 52	snr	V=8.4, d=7′ x 5′
<b>Telescopium</b>				
NGC 6584	D 376, B 107, GCl 92, A 86	18 18 38 −52 12 55	gc	V=7.9, d=6.6′
Harrington 8	“X Marks the Spot”	18 30 30 −46 08	ast	d=15′
Dunlop 227	HR 7548 & HR 7549	19 52 38 −54 58 16	m*	V=5.8 & 6.4, 23.5″
<b>Triangulum</b>				
NGC 598	Triangulum Galaxy, M 33, LEDA 5818	01 33 52 +30 39 29	gx	V=5.5, d=66′ x 40′
NGC 604	VGHC 2-106	01 34 33 +30 47 04	bn	V=12.0, d=25′ x 2′
Collinder 21	Ocl 371	01 50 06 +27 05 00	ast	V=8.2, d=7′
iota Tri	6 Tri, HD 13480	02 12 22 +30 18 11	m*	V=5.3 & 6.7, 3.9″
<b>Triangulum Australe</b>				
NGC 6025	L III-10, D 304, C 95, Cr 296, A 65	16 03 18 −60 26	oc	V=5.1, d=15′
<b>Tucana</b>				
NGC 104	47 Tucanae, L I.1, B 2, C 106, GCl 1, A 2	00 24 06 −72 04 53	gc	V=4.9, d=50′
NGC 292	Small Magellanic Cloud (SMC), LEDA 3085, A 7	00 52 38 −72 48 01	gx	V=2.3, d=5.2° x 3.4°
NGC 362	D 62, B 7, C 104, GCl 3, Mel 4, A 8	01 03 14 −70 50 54	gc	V=7.2, d=14′
<b>Ursa Major</b>				
NGC 3556	M 108, LEDA 34030	11 11 31 +55 40 31	gx	V=9.9, d=8.6′ x 2.4′
zeta UMa	79 UMa, HD 116656 & HD 116657	13 23 56 +54 55 31	m*	V=2.2, 3.9 & 4.0
NGC 5457	Pinwheel, M 101, Arp 26, LEDA 50063	14 03 13 +54 20 53	gx	V=7.5, d=29′ x 27′
<b>Vela</b>				
gamma Velorum	SAO 219504 & SAO 219501	08 09 32 −47 20 12	m*	V=1.8, 4.1, 7.3 & 9.4
NGC 2547	L III.2, D 410, Cr 177, A 29	08 10 26 −49 10 03	oc	V=4.7, d=25′
NGC 2626	Ced 106h, Bernes 137, Mu 18, Magakian 375	08 35 32 −40 40 18	bn	d=6′ x 4′
IC 2391	omicron Velorum Cluster, L II.5, C 85, Cr 191, A 31	08 40 36 −53 02 00	oc	V=2.5, d=60′
IC 2395	L III.3, Cr 192, vdBH 47	08 42 37 −48 06 48	oc	V=4.6, d=18.6′
IC 2488	L III.4, Cr 208, Mel 97, vdBH 69, A 34	09 27 36 −57 00 00	oc	V=7.4, d=18′
NGC 3132	Eight-Burst Nebula, B 43, C 74, A 37	10 07 02 −40 26 11	pn	V=9.9, d=84″ x 53″
NGC 3201	D 445, B 44, C 79, Mel 99, A 38	10 17 37 −46 24 40	gc	V=8.2, d=20′
NGC 3228	L II.7, D 386, Cr 218, vdBH 93	10 21 24 −51 44 00	oc	V=6.0, d=5′

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<b>Virgo</b>				
NGC 4303	M 61, LEDA 40001	12 <sup>h</sup> 21 <sup>m</sup> 55 <sup>s</sup> +04° 28' 29"	gx	V=9.3, d=6.2' x 5.9'
NGC 4374	Markarian Chain, M 84, LEDA 40455	12 25 04 +12 53 13	gx	V=9.2, d=6.0' x 5.4'
NGC 4406	Markarian Chain, M 86, LEDA 40653	12 26 12 +12 56 45	gx	V=8.9, d=10.2' x 6.8'
NGC 4472	M 49, LEDA 41220	12 29 47 +08 00 00	gx	V=8.3, d=9.8' x 8.1'
NGC 4486	Smoking Gun, Virgo A, M 87, LEDA 41361	12 30 49 +12 23 28	gx	V=8.6, d=8.3' x 5.8'
NGC 4579	M 58, LEDA 42168	12 37 43 +11 49 04	gx	V=9.6, d=5.6' x 4.5'
Jaws Asterism	Sombrero's Arrow	12 38 -11 32	ast	V~8.5, d=4'
NGC 4594	Sombrero Galaxy, M 104, B 52, LEDA 42407, A 50	12 39 59 -11 37 23	gx	V=8.3, d=8.5' x 5.4'

## Volans

NGC 2442	NGC 2443, ESO 59-8, LEDA 21373	07 36 24 -69 31 47	gx	V=10.4, d=6.0' x 5.0'
kappa Volantis	HD 71046SAO 256497 / 256499, BSO 17	08 19 49 -71 30 54	m*	V=5.3, 5.6 & 7.7

## Vulpecula

Collinder 399	Al Sufi's Cluster, Coathanger, Brocchi's Cluster	19 26 12 +20 05 33	oc	V=3.6, d=90'
NGC 6853	Dumb-Bell Nebula, Diabolo Nebula, M 27	19 59 36 +22 43 16	pn	V=7.4, d=6.7'
NGC 6885	20 Vulpeculae Cluster, C 37, Cr 417	20 12 00 +26 29 00	oc	V=8.1, d=20'
NGC 6940	Cr 424, Mel 232	20 34 24 +28 17 00	oc	V=6.3, d=25'

## Large Magellanic Cloud

NGC 1714	LHA 120-N 4A, SL 64, ESO 85-8	04 52 08 -66 55 23	bn	d=0.8'
NGC 1763	LHA 120-N 11B, B 27	04 56 52 -66 24 25	bn	V=9.4, d=4' x 2'
NGC 1818	NGC 1818A, D 236, SL 201, ESO 85-40, B 30	05 04 14 -66 26 02	oc	V=9.7, d=3.4'
NGC 1850	SL 261, ESO 56-70	05 08 46 -68 45 39	oc+bn	V=9.0, d=3.4'
NGC 1854	NGC 1855, SL 265, ESO 56-72	05 09 20 -68 50 53	gc	V=10.4, d=1.1'
NGC 1858	LH 31, SL 274, ESO 56-74	05 09 56 -68 54 06	oc+bn	V=9.9, d=3.4' x 1.7'
NGC 1903	ESO 56-93, SL 356	05 17 22 -69 20 16	oc	V=11.9, d=1' x 1'
NGC 1916	ESO 56-98, SL 361	05 18 38 -69 24 23	oc	V=10.4, d=0.6'
NGC 1910	D 129, ESO 56-99	05 18 43 -69 14 12	oc+bn	V=9.7, d=8' x 6'
NGC 1984	ESO 56-132, SL 488	05 27 41 -69 08 05	oc+bn	V=10.0, d=1.7'
NGC 1983	LH 61, ESO 56-133	05 27 48 -68 59 12	oc+bn	V=9.9, d=25'
NGC 2004	D 215, SL 523, ESO 86-4	05 30 40 -67 17 14	oc	V=9.9, d=1.8'
NGC 2032	ESO 56-160, LHA 120-N 59A	05 35 24 -67 35 01	oc+bn	V=10.8, d=1.2'
NGC 2029	D 240, ESO 86-15, LHA 120-N 59	05 35 29 -67 34 06	oc+bn	d=5'
NGC 2035	D 220, ESO 56-161	05 35 32 -67 35 06	oc+bn	V=11, d=0.5'
NGC 2070	Tarantula, 30 Dor, L I.2, B 35, C 103, A 20	05 38 42 -69 06 00	bn	V=8.3, d=30' x 20'
NGC 2074	ESO 57-8, SL 637, LH 101	05 39 03 -69 29 54	oc+bn	V=9, d=3.5'
NGC 2100	ESO 57-25, SL 662	05 42 09 -69 12 44	oc+bn	V=9.5, d=1.5'

## Small Magellanic Cloud

NGC 346	D 25, ESO 51-10, Lindsay 60, LHA 115-N 66A	00 59 04 -72 10 42	oc	V=10.3, d=10'x4'
NGC 371	ESO 51-14, Mel 5, Kron 48, Lindsay 71	01 03 30 -72 03 18	oc	d=5'
NGC 456	ESO 29-38, Lindsay 94, LHA 115-N 83A & C	01 13 42 -73 17 30	oc	d=3'

## Key

### Abbreviations in object names

A = ASSA Top 100 catalogue  
 B = Jack Bennett's catalogue  
 C = Caldwell catalogue  
 Cr = Collinder (star clusters)  
 D = James Dunlop's catalogue  
 L = La Caille's catalogue  
 LBN = Lynd's bright nebula catalogue  
 LDN = Lynd's dark nebula catalogue  
 M = Charles Messier's catalogue  
 Mel = Melotte (star clusters)  
 Sa = Sanduleak  
 Sh = Sharpless  
 SL = Shapley Lindsay

### Object type

\* = (interesting) star  
 assoc = stellar association/star cloud  
 ast = asterism  
 bn = bright (emission) nebula  
 bn+dn = bright and dark nebulosity  
 dn = dark nebula  
 gc = globular cluster  
 gx = galaxy  
 m\* = multiple (double) star  
 oc = open (star) cluster  
 oc+bn = open cluster with bright nebulosity  
 pn = planetary nebula  
 rn = bright (reflection) nebula  
 snr = supernova remnant

### Notes

V = visual magnitude  
 d = angular diameter

For most double stars, the magnitudes of the two components are given, followed by a recent measure of their angular separation. For multiple stars, only the magnitudes of the components are given.

# ASSA Deep-Sky Observing Section Top-100 Deep-sky Objects list

n	Name	Type	Con	RA (J2000.0)	Dec
1	String of Pearls, NGC 55, Dun 507, B 1, C 72	galaxy	Scl	00 14 54	-39 11 55
2	47 Tucanae, NGC 104, Lac I.1, B 2, C 106	globular cluster	Tuc	00 24 06	-72 04 53
3	Milkweed Seed Galaxy, NGC 247, B 3, C 62	galaxy	Cet	00 47 09	-20 45 38
4	Pac-Man Nebula, NGC 246, C 56	planetary nebula	Cet	00 47 03	-11 52 19
5	Silver Coin, NGC 253, B 4, C 65	galaxy	Scl	00 47 33	-25 17 18
6	NGC 288, B 5	globular cluster	Scl	00 52 45	-26 34 51
7	Small Magellanic Cloud, NGC 292	galaxy	Tuc	00 52 38	-72 48 01
8	NGC 362, Dun 62, B 7, C 104	globular cluster	Tuc	01 03 14	-70 50 54
9	NGC 1068, Cetus A, M 77, B 9	galaxy	Cet	02 42 41	-00 00 48
10	NGC 1261, Dun 337, B 11, C 87	globular cluster	Hor	03 12 16	-55 13 00
11	NGC 1291, NGC 1269, Dun 487, B 12	galaxy	Eri	03 17 19	-41 06 29
12	NGC 1316, Fornax A, Dun 548, B 14	galaxy	For	03 22 42	-37 12 34
13	NGC 1365, B 16	galaxy	For	03 33 36	-36 08 28
14	NGC 1535, B 22	planetary nebula	Eri	04 14 16	-12 44 22
15	NGC 1851, Dun 508, B 32, C 73	globular cluster	Col	05 14 07	-40 02 50
16	Large Magellanic Cloud	galaxy	Dor	05 23 35	-69 45 22
17	NGC 1904, M 79, B 34	globular cluster	Lep	05 24 11	-24 31 27
18	Great Orion Nebula, NGC 1976, M 42	bright nebula	Ori	05 35 17	-05 23 28
19	NGC 1977	open cluster	Ori	05 35 15	-04 53 12
20	Tarantula Nebula, NGC 2070, Lac I.2, B 35, C 103	bright nebula	LMC	05 38 42	-69 06 00
21	NGC 2287, M 41	open cluster	CMa	06 46 00	-20 46 00
22	tau CMa, Northern Jewel Box, NGC 2362, C 64	open cluster	CMa	07 18 36	-24 59 00
23	NGC 2422, NGC 2478, M 47	open cluster	Pup	07 36 35	-14 28 57
24	NGC 2437, M 46	open cluster	Pup	07 41 42	-14 49 00
25	NGC 2451	open cluster	Pup	07 45 24	-37 58 00
26	NGC 2447, M 93	open cluster	Pup	07 44 30	-23 51 12
27	NGC 2477, Lac I.3, Dun 535, C 71	open cluster	Pup	07 52 06	-38 32 00
28	Southern Beehive, NGC 2516, Lac II.3, C 96	open cluster	Car	07 58 06	-60 45 00
29	NGC 2547, Lac III.2, Dun 410	open cluster	Vel	08 10 26	-49 10 03
30	NGC 2548, M 48	open cluster	Hya	08 13 42	-05 45
31	omicron Velorum Cluster, IC 2391, Lac II.5, C 85	open cluster	Vel	08 40 36	-53 02 00
32	NGC 2808, Dun 265, B 41	globular cluster	Car	09 12 03	-64 51 46
33	NGC 2818, Dun 564	open cluster	Pyx	09 16 10	-36 37 06
33	NGC 2818A, PN G261.9+08.5	planetary nebula	Pyx	09 16 02	-36 37 39
34	IC 2488, Lac III.4	open cluster	Vel	09 27 36	-57 00 00
35	NGC 3114, Dun 297	open cluster	Car	10 02 00	-60 06 00
36	Spindle Galaxy, NGC 3115, B 42, C 53	galaxy	Sex	10 05 14	-07 43 08
37	Eight-Burst Nebula, NGC 3132, B 43, C 74	planetary nebula	Vel	10 07 02	-40 26 11
38	NGC 3201, Dun 445, B 44, C 79	globular cluster	Vel	10 17 37	-46 24 40
39	Ghost of Jupiter, NGC 3242, B 45, C 59	planetary nebula	Hya	10 24 46	-18 38 33
40	IC 2581	open cluster	Car	10 27 30	-57 38 00
41	Gem Cluster, NGC 3293, Lac II.8	open cluster	Car	10 35 49	-58 13 00
42	NGC 3324	open cluster	Car	10 37 19	-58 39 36
43	theta Carinae Cluster, IC 2602, Lac II.9, C 102	open cluster	Car	10 43 12	-64 24 00
44	eta Carinae Nebula, NGC 3372, Lac III.5/III.6, C 92	bright nebula	Car	10 44 19	-59 53 21
45	Pincushion Cluster, NGC 3532, Lac II.10, C 91	open cluster	Car	11 05 33	-58 43 48
46	NGC 3766, Lac III.7, Dun 289, C 97	open cluster	Cen	11 36 13	-61 36 55
47	Blue Planetary, NGC 3918	planetary nebula	Cen	11 50 18	-57 10 57
48	NGC 4361	planetary nebula	Crv	12 24 31	-18 47 06
49	Dark Python	dark nebula	Mus	12 27 31	-71 25 12
50	Sombrero Galaxy, NGC 4594, M 104, B 52	galaxy	Vir	12 39 59	-11 37 23

## ASSA Deep-Sky Observing Section Top-100 Deep-sky Objects list

n	Name	Type	Con	RA (J2000.0)	Dec
51	Coal Sack, C 99	dark nebula	Cru	12 31 19	-63 44 36
52	Jewel Box, NGC 4755, Lac II.12, C 94	open cluster	Cru	12 53 42	-60 22 00
53	Southern Butterfly, NGC 4833, Lac I.4, C 105, B 56	globular cluster	Mus	12 59 35	-70 52 29
54	Tweezers Galaxy, NGC 4945, Dun 411, B 57, C 83	galaxy	Cen	13 05 26	-49 28 15
55	Centaurus A, NGC 5128, Dun 482, B 60, C 77	galaxy	Cen	13 25 28	-43 01 09
56	NGC 5139, omega Centauri, Lac I.5, B 61, C 80	globular cluster	Cen	13 26 46	-47 28 37
57	NGC 5189, IC 4274, B 62	planetary nebula	Mus	13 33 33	-65 58 27
58	Southern Pinwheel, NGC 5236, Lac I.6, M 83	galaxy	Hya	13 37 01	-29 51 59
59	NGC 5281, Lac I.7, Dun 273	open cluster	Cen	13 46 30	-62 54 54
60	NGC 5460, Dun 431	open cluster	Cen	14 07 24	-48 20 00
61	NGC 5662, Lac III.8, Dun 342	open cluster	Cen	14 35 36	-56 37 00
62	NGC 5822	open cluster	Lup	15 04 24	-54 24
63	NGC 5823, C 88	open cluster	Cir	15 05 45	-55 37 30
64	Barnard 228	dark nebula	Lup	15 44 00	-34 30
65	NGC 6025, Lac III-10, Dun 304, C 95	open cluster	TrA	16 03 18	-60 26
66	NGC 6067, Dun 360, C 89	open cluster	Nor	16 13 12	-54 13 00
67	S Normae Cluster, NGC 6087, Dun 326	open cluster	Nor	16 18 48	-57 56 00
68	NGC 6121, Lac I.9, M 4, B 75	globular cluster	Sco	16 23 35	-26 31 32
69	NGC 6124, Lac I.8, Dun 514, C 75	open cluster	Sco	16 25 18	-40 39 00
70	NGC 6193, Dun 413, C 82	open cluster	Ara	16 41 24	-48 46 09
71	NGC 6218, M 12, B 80	globular cluster	Oph	16 47 15	-01 56 52
72	False Comet Cluster, NGC 6231, Lac II.13, C 76	open cluster	Sco	16 54 09	-41 49 36
73	NGC 6254, M 10, B 83	globular cluster	Oph	16 57 09	-04 05 58
74	NGC 6266, Dun 627, M 62, B 85	globular cluster	Oph	17 01 13	-30 06 45
75	NGC 6273, M 19, B 86	globular cluster	Oph	17 02 38	-26 16 05
76	NGC 6281, Dun 556	open cluster	Sco	17 04 42	-37 59 00
77	Sink Hole (B 59), B 65, B 66, B 67, B 78	dark nebula	Oph	17 20	-25
78	Butterfly Cluster, NGC 6405, Lac III.12, M 6	open cluster	Sco	17 40 18	-32 12 00
79	NGC 6397, Lac III.11, Dun 366, B 98, C 86	globular cluster	Ara	17 40 41	-53 40 25
80	Ptolemy's Cluster, NGC 6475, Lac II.14, M 7	open cluster	Sco	17 53 48	-34 47 00
81	NGC 6494, M 23	open cluster	Sgr	17 56 56	-19 00 42
82	Trifid Nebula, NGC 6514, M 20	bright nebula	Sgr	18 02 23	-23 01 48
83	Lagoon Nebula, NGC 6523, Lac III.13, M 8	bright nebula	Sgr	18 03 12	-24 23 00
84	NGC 6531, M 21	open cluster	Sgr	18 04 12	-22 29 00
85	NGC 6541, Dun 473, B 104, C 78	globular cluster	CrA	18 08 02	-43 42 20
86	NGC 6584, Dun 376, B 107	globular cluster	Tel	18 18 38	-52 12 55
87	Swan Nebula, NGC 6618, M 17, B 108	bright nebula	Sgr	18 20 47	-16 10 18
88	IC 4715, Delle Caustiche, M 24	star cloud	Sgr	18 16	-18 50
89	IC 4725, M 25	open cluster	Sgr	18 31 42	-19 07 00
90	NGC 6656, Lac I.12, M 22, B 114	globular cluster	Sgr	18 36 24	-23 54 12
91	Wild Duck Cluster, NGC 6705, M 11, B 116	open cluster	Sct	18 51 00	-06 16 00
92	NGC 6723, Dun 573, B 119	globular cluster	Sgr	18 59 33	-36 37 53
93	Bernes 157, V709 CrA	bright nebula	CrA	19 01 35	-37 00 55
94	NGC 6744, Dun 262, C 101, B 120	galaxy	Pav	19 09 45	-63 51 21
95	The Starfish, NGC 6752, Dun 295, C 93, B 121	globular cluster	Pav	19 10 52	-59 58 55
96	NGC 6809, Lac I.14, Dun 620, M 55, B 122	globular cluster	Sgr	19 39 59	-30 57 44
97	Melotte 227, Collinder 411	open cluster	Oct	20 12 06	-79 19
98	NGC 7089, M 2, B 127	globular cluster	Aqr	01 33 27	-00 49 24
99	NGC 7099, M 30, B 128	globular cluster	Cap	21 40 22	-23 10 45
100	Helix Nebula, NGC 7293, B 129, C 63	planetary nebula	Aqr	22 29 39	-20 50 14

## La Caille's "On the Nebulous Stars of the Southern Sky" (1755)

"List of nebulae of the first class... nebulosities not accompanied by any star visible in a telescope of two feet."

n	RA (J2000.0)	Dec	La Caille's description
1-1	00 33 43	-72 04 20	It resembles the nucleus of a fairly bright small comet.
1-2	05 38 08	-69 10 06	It resembles the preceding, but it is fainter.
1-3	07 50 55	-38 35 44	Large nebulosity of 15' to 20' in diameter.
1-4	12 59 04	-70 49 24	It resembles a small comet, faint.
1-5	13 26 37	-47 29 35	Nebula in Centaurus; it appears to the naked eye like a third magnitude star seen through a thin mist, and in the telescope, like a large, ill-defined comet.
1-6	13 37 01	-29 52 59	Small, formless nebulosity.
1-7	13 46 09	-62 56 49	Small, confused spot.
1-8	16 25 17	-40 41 55	It resembles a fairly large comet without a tail.
1-9	16 23 36	-26 33 39	It resembles a small nucleus of a faint comet.
1-10	16 55 29	-39 30 49	Faint patch, oval and elongated.
1-11	18 30 02	-33 32 08	It resembles a small nucleus of a faint comet.
1-12	18 36 27	-23 57 17	It resembles the preceding.
1-13	19 27 15	-71 34 55	It resembles the preceding.
1-14	19 40 10	-30 59 10	It resembles the faint nucleus of a large comet.

"List of nebulous stars in clusters"

n	RA (J2000.0)	Dec	La Caille's description
2-1	04 02 53	-44 26 38	A compressed heap of about 12 faint stars of 8th magnitude.
2-2	07 26 12	-34 07 20	Heap of 8 stars of 6th-7th mag, to the naked eye a nebulosity in the sky.
2-3	07 58 59	-60 49 28	Group of 10 to 12 stars, much compressed.
2-4	08 11 09	-37 12 04	Two neighboring groups of confused stars are seen by the eye but in the telescope they are faint, distinct stars, very numerous and close.
2-5	08 38 49	-53 05 03	Small heap of stars.
2-6	08 46 41	-42 15 05	Heap of seven or eight stars, slightly compressed.
2-7	10 21 23	-51 42 50	Heap of four or five stars, very small and compressed.
2-8	10 35 51	-58 12 11	Small heap of four faint stars forming a lozenge.
2-9	10 42 57	-64 23 26	The star Theta Navis, of the third magnitude or less, surrounded by a large number of stars of sixth, seventh and eighth magnitude, which make it resemble the Pleiades.
2-10	11 06 27	-58 39 12	Prodigious cluster of faint stars, very compressed, filling up in the shape of semi-circle of 20' to 25' in diameter.
2-11	11 22 55	-58 19 36	Seven or eight faint stars compressed in a straight line.
2-12	12 53 28	-60 22 12	Five or six faint stars between two of sixth magnitude.
2-13	16 54 09	-41 52 34	Heap of seven or eight faint compressed stars.
2-14	17 53 41	-34 48 09	Group of 15 or 20 stars, very close together, in the figure of a square.

"List of stars accompanied by nebulosity."

n	RA (J2000.0)	Dec	La Caille's description
3-1	05 03 18	-49 28 58	Faint star surrounded by a nebulosity
3-2	08 10 49	-49 13 32	Five faint stars, in the shape of a T, surrounded by nebulosity.
3-3	08 42 21	-48 04 52	Star of 6th mag, connected to another more southern one by a nebulous trail.
3-4	09 27 48	-56 59 05	Faint star surrounded by nebulosity.
3-5	10 43 51	-60 06 22	Two faint stars surrounded by nebulosity.
3-6	10 44 11	-59 29 39	Large group of a great number of faint stars, a little compressed, and occupying the space of a semi-circle of 15' to 20' diameter; with a slight nebulosity spreading about.
3-7	11 36 01	-61 36 56	Three faint stars close together, enveloped in nebulosity.
3-8	14 34 56	-56 36 13	Two faint stars in a nebulosity.
3-9	15 22 21	-59 12 17	The same [as above]
3-10	16 03 27	-60 33 30	Three faint stars in a straight line, surrounded by nebulosity.
3-11	17 40 41	-53 45 40	Faint star enveloped in a nebulosity.
3-12	17 40 06	-32 15 43	Unusual cluster of faint stars, disposed in three parallel bands, forming a lozenge of 20' to 25' diameter and filled with nebulosity.
3-13	18 03 52	-24 24 20	Three stars enclosed in a trailing nebulosity parallel to the Equator.
3-14	21 31 27	-56 55 25	Two faint stars surrounded by nebulosity.

# Jack Bennett's catalogue of southern hemisphere comet-like objects

n	Object	Con	n	Object	Con	n	Object	Con
1	NGC 55	Scl	42	NGC 3115	Sex	88	NGC 6287	Oph
2	NGC 104	Tuc	43	NGC 3132	Vel	89	NGC 6293	Oph
3	NGC 247	Cet	44	NGC 3201	Vel	90	NGC 6304	Oph
4	NGC 253	Scl	45	NGC 3242	Hya	91	NGC 6316	Oph
5	NGC 288	Scl	46	NGC 3621	Hya	91a	NGC 6318	Sco
6	NGC 300	Scl	47	Mel 105	Car	92	NGC 6333	Oph
7	NGC 362	Tuc	48	NGC 3960	Cen	93	NGC 6356	Oph
8	NGC 613	Scl	49	NGC 3923	Hya	94	NGC 6352	Ara
9	NGC 1068	Cet	50	NGC 4372	Mus	95	NGC 6362	Ara
10	NGC 1097	For	51	NGC 4590	Hya	96	NGC 6388	Sco
10a	NGC 1232	Eri	52	NGC 4594	Vir	97	NGC 6402	Oph
11	NGC 1261	Hor	53	NGC 4697	Vir	98	NGC 6397	Ara
12	NGC 1291	Eri	54	NGC 4699	Vir	98a	NGC 6440	Sgr
13	NGC 1313	Ret	55	NGC 4753	Vir	98b	NGC 6445	Sgr
14	NGC 1316	For	56	NGC 4833	Mus	99	NGC 6441	Sco
14a	NGC 1350	For	57	NGC 4945	Cen	100	NGC 6496	CrA
15	NGC 1360	For	58	NGC 4976	Cen	101	NGC 6522	Sgr
16	NGC 1365	For	59	NGC 5061	Hya	102	NGC 6528	Sgr
17	NGC 1380	For	59a	NGC 5068	Vir	103	NGC 6544	Sgr
18	NGC 1387	For	60	NGC 5128	Cen	104	NGC 6541	CrA
19	NGC 1399	For	61	NGC 5139	Cen	105	NGC 6553	Sgr
19a	NGC 1398	For	62	NGC 5189	Mus	106	NGC 6569	Sgr
20	NGC 1404	Eri	63	NGC 5236	Hya	107	NGC 6584	Tel
21	NGC 1433	Hor	63a	NGC 5253	Cen	107a	NGC 6603	Sgr
21a	NGC 1512	Hor	64	NGC 5286	Cen	108	NGC 6618	Sgr
22	NGC 1535	Eri	65	NGC 5617	Cen	109	NGC 6624	Sgr
23	NGC 1549	Dor	66	NGC 5634	Vir	110	NGC 6626	Sgr
24	NGC 1553	Dor	67	NGC 5824	Lup	111	NGC 6638	Sgr
25	NGC 1566	Dor	68	NGC 5897	Lib	112	NGC 6637	Sgr
25a	NGC 1617	Dor	69	NGC 5927	Lup	112a	NGC 6642	Sgr
26	NGC 1672	Dor	70	NGC 5986	Lup	113	NGC 6652	Sgr
27	NGC 1763	Dor	71	NGC 5999	Nor	114	NGC 6656	Sgr
28	NGC 1783	Dor	72	NGC 6005	Nor	115	NGC 6681	Sgr
29	NGC 1792	Col	72a	Trumpler 23	Nor	116	NGC 6705	Sct
30	NGC 1818	Dor	73	NGC 6093	Sco	117	NGC 6712	Sct
31	NGC 1808	Col	74	NGC 6101	Aps	118	NGC 6715	Sgr
32	NGC 1851	Col	75	NGC 6121	Sco	119	NGC 6723	Sgr
33	NGC 1866	Dor	76	NGC 6134	Nor	120	NGC 6744	Pav
34	NGC 1904	Lep	77	NGC 6144	Sco	121	NGC 6752	Pav
35	NGC 2070	Dor	78	NGC 6139	Sco	122	NGC 6809	Sgr
36	NGC 2214	Dor	79	NGC 6171	Oph	123	NGC 6818	Sgr
36a	NGC 2243	CMa	79a	NGC 6167	Nor	124	NGC 6864	Sgr
37	NGC 2298	Pup	79b	NGC 6192	Sco	125	NGC 6981	Aqr
37a	NGC 2467	Pup	80	NGC 6218	Oph	126	NGC 7009	Aqr
38	NGC 2489	Pup	81	NGC 6216	Sco	127	NGC 7089	Aqr
39	NGC 2506	Mon	82	NGC 6235	Oph	128	NGC 7099	Cap
40	NGC 2627	Pyx	83	NGC 6254	Oph	129	NGC 7293	Aqr
40a	NGC 2671	Vel	84	NGC 6253	Ara	129a	NGC 7410	Gru
41	NGC 2808	Car	85	NGC 6266	Oph	129b	IC 1459	Gru
41a	NGC 2972	Vel	86	NGC 6273	Oph	130	NGC 7793	Gru
41b	NGC 2997	Ant	87	NGC 6284	Oph			

## Constellation visibility (alphabetically arranged)

Constellation	date of culmination at			Constellation	date of culmination at		
	21:00	00:00	03:00		21:00	00:00	03:00
Andromeda	Nov 27	Oct 13	Aug 28	Lepus	Feb 08	Dec 26	Nov 10
Antlia	Apr 19	Mar 05	Jan 18	Libra	Jul 05	May 22	Apr 06
Apus	Jul 29	Jun 14	Apr 29	LMC	Feb 06	Dec 23	Nov 08
Aquarius	Oct 27	Sep 12	Jul 28	Lupus	Jul 06	May 22	Apr 06
Aquila	Sep 11	Jul 29	Jun 13	Lynx	Mar 13	Jan 27	Dec 13
Ara	Aug 05	Jun 21	May 06	Lyra	Aug 29	Jul 15	May 30
Aries	Dec 27	Nov 12	Sep 28	Mensa	Feb 06	Dec 23	Nov 08
Auriga	Feb 14	Jan 01	Nov 16	Microscopium	Oct 01	Aug 17	Jul 02
Boötes	Jun 27	May 14	Mar 29	Monoceros	Feb 28	Jan 14	Nov 29
Caelum	Jan 27	Dec 13	Oct 29	Musca	May 25	Apr 10	Feb 23
Cancer	Mar 28	Feb 11	Dec 27	Norma	Jul 18	Jun 03	Apr 19
Canes Venatici	Jun 02	Apr 18	Mar 03	Octans	Oct 18	Sep 03	Jul 19
Canis Major	Feb 28	Jan 14	Nov 30	Ophiuchus	Jul 31	Jun 17	May 02
Canis Minor	Mar 12	Jan 26	Dec 11	Orion	Feb 09	Dec 26	Nov 11
Capricornus	Oct 01	Aug 17	Jul 02	Pavo	Sep 06	Jul 23	Jun 07
Carina	Apr 01	Feb 15	Dec 31	Pegasus	Oct 24	Sep 09	Jul 25
Centaurus	Jun 01	Apr 17	Mar 03	Perseus	Jan 08	Nov 25	Oct 10
Cetus	Dec 12	Oct 29	Sep 13	Phoenix	Nov 30	Oct 16	Aug 31
Chamaeleon	Apr 20	Mar 06	Jan 20	Pictor	Feb 09	Dec 27	Nov 11
Circinus	Jul 01	May 18	Apr 02	Pisces	Nov 27	Oct 13	Aug 28
Columba	Feb 12	Dec 30	Nov 14	Piscis Austrinus	Oct 22	Sep 07	Jul 24
Coma Berenices	May 28	Apr 14	Feb 27	Puppis	Mar 14	Jan 28	Dec 13
Corona Australis	Aug 27	Jul 13	May 28	Pyxis	Mar 31	Feb 14	Dec 30
Corona Borealis	Jul 15	Jun 01	Apr 16	Reticulum	Jan 14	Nov 30	Oct 15
Corvus	May 23	Apr 09	Feb 22	Sagitta	Sep 11	Jul 28	Jun 13
Crater	May 07	Mar 24	Feb 06	Sagittarius	Aug 31	Jul 17	Jun 01
Crux	May 26	Apr 11	Feb 24	Scorpius	Jul 27	Jun 12	Apr 27
Cygnus	Sep 22	Aug 08	Jun 23	Sculptor	Nov 21	Oct 07	Aug 22
Delphinus	Oct 02	Aug 19	Jul 04	Scutum	Aug 27	Jul 13	May 28
Dorado	Feb 03	Dec 20	Nov 04	Serpens (caput)	Jul 12	May 28	Apr 12
Equuleus	Oct 04	Aug 20	Jul 05	Serpens (cauda)	Aug 20	Jul 06	May 21
Eridanus	Jan 16	Dec 02	Oct 17	Sextans	Apr 21	Mar 07	Jan 20
Fornax	Dec 28	Nov 13	Sep 29	SMC	Nov 30	Oct 16	Aug 31
Gemini	Feb 28	Jan 14	Nov 30	Taurus	Jan 19	Dec 06	Oct 21
Grus	Oct 26	Sep 11	Jul 27	Telescopium	Sep 04	Jul 21	Jun 06
Hercules	Aug 05	Jun 21	May 06	Triangulum	Dec 18	Nov 03	Sep 18
Horologium	Jan 03	Nov 20	Oct 05	Triang. Australe	Jul 17	Jun 02	Apr 17
Hydra	Apr 06	Feb 21	Jan 06	Tucana	Nov 14	Sep 30	Aug 15
Hydrus	Dec 21	Nov 06	Sep 21	Ursa Major	Apr 22	Mar 08	Jan 21
Indus	Oct 05	Aug 21	Jul 07	Vela	Apr 08	Feb 22	Jan 07
Lacerta	Oct 25	Sep 10	Jul 26	Virgo	Jun 06	Apr 23	Mar 08
Leo	Apr 27	Mar 13	Jan 27	Volans	Mar 13	Jan 27	Dec 13
Leo Minor	Apr 22	Mar 08	Jan 22	Vulpecula	Sep 22	Aug 08	Jun 23



# Constellation Year Planner

A monthly guide to learning the southern constellations

## JANUARY

									1
2									8
9	10	11	12	13	14				15
16	17	18	19	20	21				22
23									29
30									

Taurus,  
Eridanus, Caelum

Orion, Lepus,  
Auriga

## FEBRUARY

									1
2									8
9	10	11	12	13	14				15
16	17	18	19	20	21				22
23									29
30									

Columba, Pictor,  
Dorado

Canis Major, Canis Minor,  
Gemini, Monoceros

## MARCH

									1
2									8
9	10	11	12	13	14				15
16	17	18	19	20	21				22
23									29
30									

Vela, Puppis, Pyxis,  
Cancer

Carina, Volans,  
eastern Hydra, Lynx

## APRIL

									1
2									8
9	10	11	12	13	14				15
16	17	18	19	20	21				22
23									29
30									

Corvus, Crater,  
western Hydra, Antlia

Leo, Leo Minor,  
Sextans

## MAY

									1
2									8
9	10	11	12	13	14				15
16	17	18	19	20	21				22
23									29
30									

Crux, Musca, Chamaeleon,  
Ursa Major

Virgo, Coma Berenices,  
Canes Venatici

## JUNE

									1
2									8
9	10	11	12	13	14				15
16	17	18	19	20	21				22
23									29
30									

Centaurus, Triangulum Australe,  
Apus, Circinus

Boötes, Corona Borealis,  
Libra

## JULY

									1
2									8
9	10	11	12	13	14				15
16	17	18	19	20	21				22
23									29
30									

Lupus, Norma

Scorpius, Ara, Ophiuchus,  
Serpens, Hercules

## AUGUST

									1
2									8
9	10	11	12	13	14				15
16	17	18	19	20	21				22
23									29
30									

Sagittarius, Lyra

Corona Australis, Aquila,  
Scutum, Telescopium

## SEPTEMBER

									1
2									8
9	10	11	12	13	14				15
16	17	18	19	20	21				22
23									29
30									

Pavo, Octans, Cygnus,  
Sagitta, Vulpecula

Capricornus, Microscopium,  
Equuleus, Delphinus, Indus

## OCTOBER

									1
2									8
9	10	11	12	13	14				15
16	17	18	19	20	21				22
23									29
30									

Aquarius, Grus,  
Piscis Austrinus

Tucana,  
Pegasus, Lacerta

## NOVEMBER

									1
2									8
9	10	11	12	13	14				15
16	17	18	19	20	21				22
23									29
30									

Sculptor, Pisces

Cetus, Fornax, Pheonix

## DECEMBER

									1
2									8
9	10	11	12	13	14				15
16	17	18	19	20	21				22
23									29
30									

Andromeda, Aries,  
Triangulum

Mensa, Reticulum, Hydrus,  
Horologium, Perseus

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## A checklist for composing descriptions of deep-sky objects

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These guidelines will help you to get the most out of your observing sessions by providing a checklist of things to look out for when you examine a deep-sky object. The checklist is not meant as a rigid thought-constraining framework, but rather as a tool to make sure you don't forget to note a particular aspect.

### Nebulae

- \* What are your first impressions?
- \* How easy is it to see? (visibility; brightness; magnitude)
- \* What shape is the nebula?
- \* How big is the nebula?
- \* How does the brightness change from edge to centre? (brightness profile)
- \* Is there a nuclear region?
- \* Are the edges sharp or diffuse?
- \* Are there darker parts or areas of uneven brightness?
- \* How well does the nebula stand out from the background field?
- \* What colour is the nebula?
- \* Are there stars very near, or within, the nebula?
- \* How does it relate to the surrounding star field?
- \* Rate your confidence in this observation.

### Star clusters

- \* What are your first impressions?
- \* How easy is it to see? (visibility; brightness; magnitude)
- \* What shape is the cluster?
- \* How big is the cluster?
- \* Are individual stars seen? (unresolved ... granular ... partially resolved ... well resolved, etc.)
- \* Are the stars concentrated towards the centre? (not at all ... slightly ... strongly, etc.)
- \* How does the brightness change from edge to centre? (brightness profile)
- \* How many stars can you see? (make an estimate; count the number within a specified diameter)
- \* What is the range of their brightness? (nearly the same ... mixed; estimate magnitudes)
- \* Is there an obvious central or other prominent star?
- \* Do any of the stars have a particular colour?
- \* Are any of the stars double?
- \* Are there chains, rows, or clumps of stars?
- \* Are there prominent empty spaces or starless patches?
- \* Is there a background glow (unresolved stars/nebulosity)?
- \* How does the cluster relate to the surrounding star field?
- \* Rate your confidence in this observation.

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