



# BIG 5 OF THE AFRICAN SKY

## Observing Handbook

Powered by the Deep-Sky Section of the  
Astronomical Society of Southern Africa



# Getting started

Frequently asked questions about the Big 5 of the African Sky.

## What are the Big 5?

The Big 5 of the African Sky are five celestial objects that represent the best specimens of each type of deep-sky class: the Southern Pleiades (an open star cluster), omega Centauri (a globular cluster), the eta Carinae Nebula (a bright nebula), the Coal Sack (a dark nebula), and the Milky Way (a galaxy).

## Where can I see the Big 5?

The Big 5 are visible anywhere from within the southern hemisphere. Two of the Big 5 lie in Carina, one lies in Centaurus, and one in Crux. The fifth – the Milky Way – lies in a narrow band dividing the sky in half. The brightest parts of the Milky Way are in Sagittarius, Scutum, Norma and Carina.

The accompanying table gives their celestial coordinates and basic data. Two star maps illustrate their general location, with one map devoted specifically to the Milky Way.

### BASIC STATS

Names & designation	Type	RA & Dec	Constellation
Southern Pleiades, IC 2602	open cluster	10 <sup>h</sup> 43.2 <sup>m</sup> – 64° 24.0'	Carina
omega Centauri, NGC 5139	globular cluster	13 <sup>h</sup> 26.8 <sup>m</sup> – 47° 28.6'	Centaurus
eta Carinae Nebula, NGC 3372	bright nebula	10 <sup>h</sup> 44.3 <sup>m</sup> – 59° 53.4'	Carina
Coal Sack Nebula	dark nebula	12 <sup>h</sup> 31.3 <sup>m</sup> – 63° 44.6'	Crux
Milky Way, the Galaxy †	galaxy	10 <sup>h</sup> 45 <sup>m</sup> – 60°	Carina
"	"	16 <sup>h</sup> 18 <sup>m</sup> – 53°	Norma
"	"	18 <sup>h</sup> 00 <sup>m</sup> – 29°	Sagittarius
"	"	18 <sup>h</sup> 45 <sup>mm</sup> – 07°	Scutum
"	"	19 <sup>h</sup> 30 <sup>m</sup> + 30°	Cygnus

† The Milky Way circles the entire sky so a single position cannot represent it. The last five rows of the table lists the positions of the five brightest portions. The Galactic centre is in Sagittarius.

## When can I see the Big 5?

All five objects will not be visible at the same time. This is mainly because the Milky Way is a large object and it will take more than one session to see it at its full extent. There are a number of tools you can use to find out when a particular region of sky is visible. You could, for example, use the *Southern Star Wheel* planisphere, a free DIY download. Your favourite planetarium program (e.g. “Stellarium”) or app (e.g. “Google Sky Map”, “Sky Safari”) are also great options. The following table gives a general indication of when the Big 5 can be seen.

### VISIBILITY PERIODS

Names	Evening visibility	Midnight visibility	Morning visibility
Southern Pleiades	January to late-August	Mid-November to early July	Mid-September to early May
eta Carinae Nebula	Early January to mid-August	Late November to early July	Late September to early May
Coal Sack Nebula	February to late-September	Mid-December to early August	Mid-October to early June
omega Centauri	March to mid-September	Mid-January to early August	Mid-November to early June
Milky Way (Car)	Early January to mid-August	Late November to early July	Late September to early May
Milky Way (Nor)	Early April to end-October	Late February to mid-September	Late December to mid-July
Milky Way (Sgr)	Late May to early November	Mid-April to late September	Mid-February to late July
Milky Way (Sct)	Late June to early November	Early May to late September	March to late July
Milky Way (Cyg)	Early August - mid-October	Late June to late August	Late April to early July

## How do I see the Big 5?

Once you know where the Big 5 are and when they are visible, decide on what equipment you would like to use. The Big 5 can be seen with the naked eye alone if you observe from a dark-sky site. Under these conditions the Milky Way in particular is a spectacular sight. If you will be observing under suburban skies you will need to use at least a pair of binoculars. A telescope will, of course, show the objects more easily, but the large size of the Milky Way means that most telescopes are too “powerful” – use binoculars instead.

## How do I record the Big 5?

For each object, write a clear description of what you see. Imagine explaining the view to a blind friend who knows nothing about astronomy. Sometimes making a rough sketch, too, is a good idea. Also write up a few lines (like a diary entry or a blog post) telling about your observing experience. This journal is a great way to capture your thoughts and feelings of the moment: you'll enjoy reading it a few years down the line!

## How do I report my observations?

Collect your observations of each object, add your observing journal entries (and sketches if you made them) and submit them to the ASSA Deep-Sky Section. The easiest way is to send an e-mail to [Auke Slotegraaf, [auke@psychohistorian.org](mailto:auke@psychohistorian.org)].

A great idea is to share your observations with other observers: you can post your notes on the Big 5 Facebook Group and on the ASSA Deep-Sky Section YahooGroup mailing list.

## What happens after I submit my observations?

All reports will receive feedback from the ASSA Deep-Sky Section. If you've successfully observed the Big 5, your name will be listed on the ASSA website *Big 5 Honour Roll*. You will also be issued with a virtual sticker – a graphic that is created uniquely for you, officially hosted on the ASSA website, that you can link to and embed in online media. In addition, your descriptions and journal will be published on the ASSA Deep-Sky Section webpages for other observers to read and enjoy.

## What about the Big 5 Bling I've heard about?

Once you've successfully observed the Big 5, you are eligible to buy a beautiful *Big 5 of the African Sky T-shirt*, and a must-have car license disk sticker. Use this bling to proudly show off what you've achieved! While you are still hunting the Big 5, you can pick up a very attractive coffee mug to keep you going at night.

## Keep in touch

ASSA Deep-Sky Section: [ [auke@psychohistorian.org](mailto:auke@psychohistorian.org) ] [ 14 Mount Grace, Somerset Ridge, Somerset West, 7130 ]

Whatsapp chat group: [ 074 100 7237 ]

Official Big 5 of the African Sky web page: [ <http://assa.sao.ac.za/sections/deep-sky/big5/> ]

Official Big 5 Facebook group: [ <https://www.facebook.com/groups/big5africansky/> ]

ASSA Deep-Sky Section mailing list: [ <https://groups.yahoo.com/neo/groups/assa-deep-sky/info> ]

## Resources

*Southern Star Wheel* planisphere: [ <http://assa.sao.ac.za/how-to-observe/getting-started/planisphere/> ]

*Discover!* and *ConCards* star charts: [ <http://assa.sao.ac.za/how-to-observe/getting-started/star-charts/> ]

*Andrew Johnson's Mag 7 Star Atlas Project*: [ [http://www.cloudynights.com/item.php?item\\_id=1052](http://www.cloudynights.com/item.php?item_id=1052) ]

“Deep-sky Observer's Companion” database: [ [http://www.docdb.net/object\\_index.php](http://www.docdb.net/object_index.php) ]

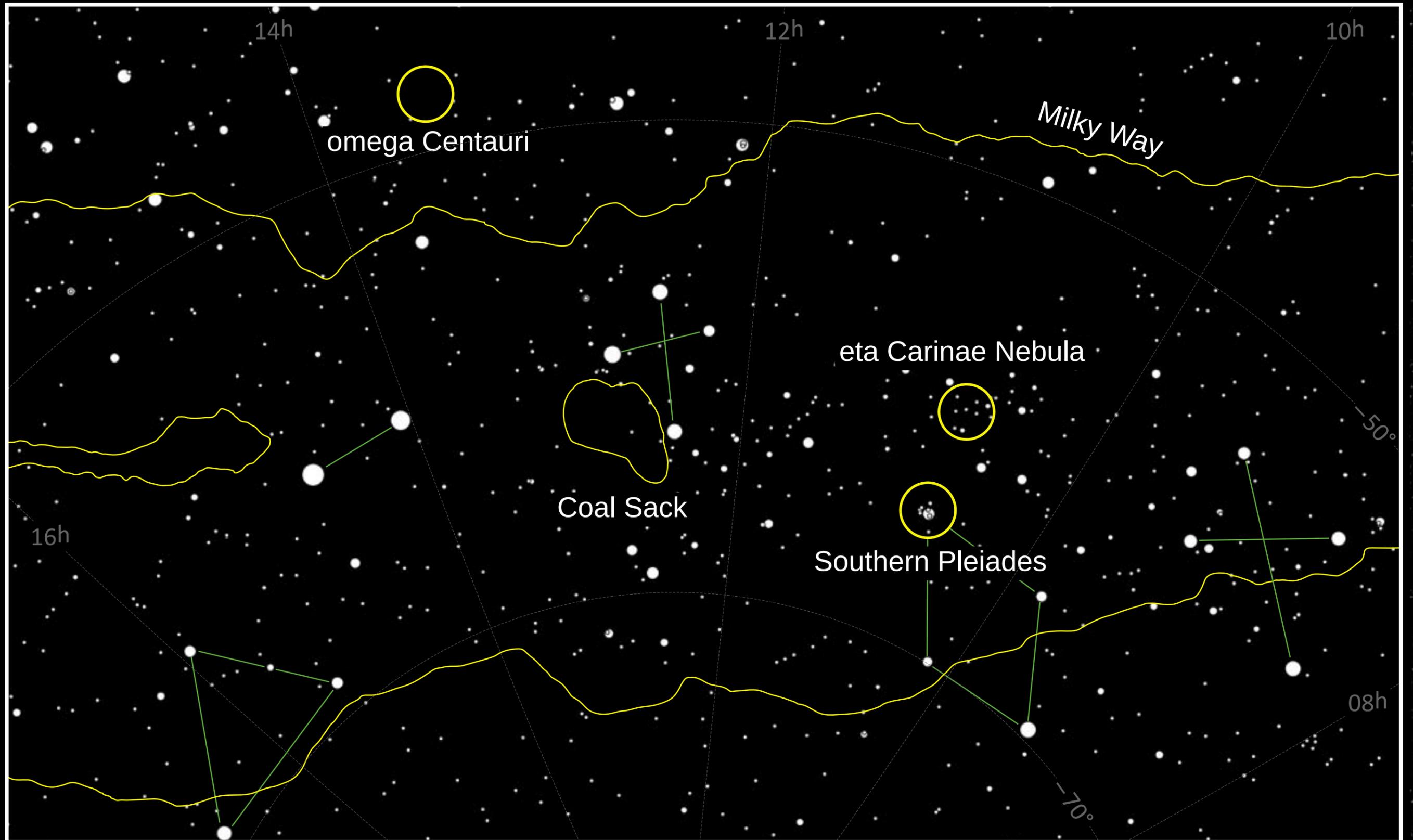
“Cartes du Ciel” planetarium software: [ <http://www.ap-i.net/skychart/en/start> ]

“Stellarium” planetarium software: [ <http://www.stellarium.org/> ]

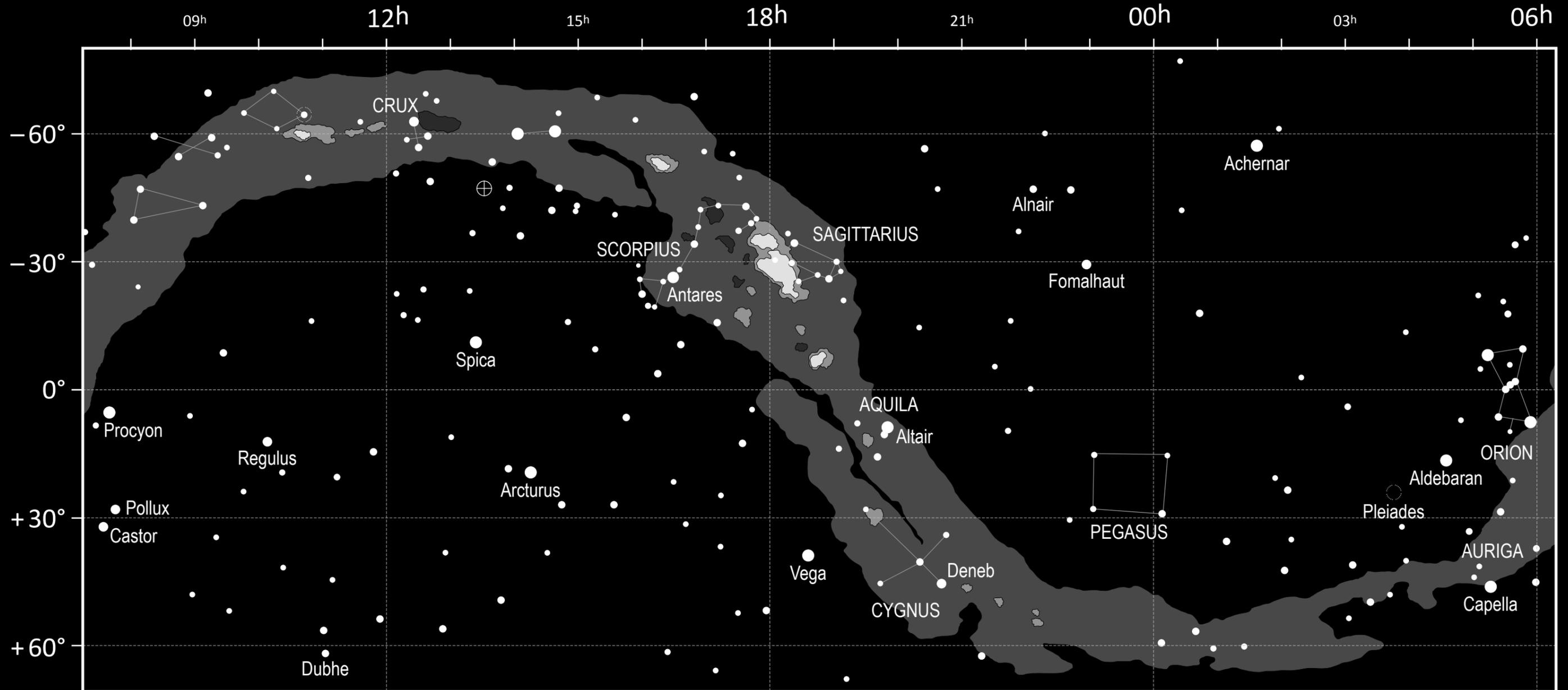
“Google Sky Map” app: [ <http://www.google.com/mobile/skymap/> ]

“Nightfall” deep-sky newsletter: [ <http://assa.sao.ac.za/sections/deep-sky/nebulae-clusters/nightfall/> ]

# Star map



# The Milky Way



The outline of the Milky Way is shown at three brightness contours. The faintest (outer) contour shows the extent of 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 Dark Emu or Great Llama (from epsilon Scorpii towards the Coal Sack, with alpha and beta Centauri seen as the Eyes of the Llama) and the Great Rift (stretching from Sagittarius past Altair towards Deneb).

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Earth globe generated using Google Earth



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