

Eridanus Optics CC

August 2006 – Winter Triangle

Introduction

Although the area explored this month is more commonly known as the 'Summer Triangle', that description applies to Northern Hemisphere observers. From the Southern Hemisphere the area is visible in the evening sky from June to September and deserves the title 'Winter Triangle' (see image of night sky. Note this image represents the northern view from Pretoria at 20:00 on August 11 2006).

The star that dominates the triangle is Vega (Constellation Lyra), the 5th brightest star in the night sky. Viewed from Pretoria, Vega reaches about 25° above the Northern horizon (only 17° from Cape Town). The second star of the triangle is Altair (Constellation Aquila), the 13th brightest star of the night sky. Altair is much higher and reaches about 55° above the Northern horizon as viewed from Pretoria. Deneb (Constellation Cygnus), the 20th brightest star forms the final corner of the triangle and reaches about 19° above the horizon as viewed from Pretoria.

The Milky Way runs through Cygnus and Aquila, offering several deep sky objects suitable for viewing through binoculars and telescopes.

Naked eye targets:

The winter triangle itself (Vega, Deneb and Altair) is a suitable object for viewing without optical aid. (See Map 1)

Another object is the constellation Cygnus the swan. This constellation is often referred to as the 'Northern Cross' (See Map 1)

Binocular Targets:

The following targets can easily be located with binoculars:

- Sagitta (Arrow): Sagitta is a small constellation within the winter triangle. The four brightest stars of Sagitta is of about 4th magnitude and should also be visible without optical aid when high above the horizon, even under light polluted skies. One of the telescope targets (M71) can be found in this area. Legend has it that Hercules used the arrow to kill Jupiter's eagle (Aquila). (Map 2)
- Lyra (Lyre or Harp): Lyra also contains a well-defined parallelogram close to Vega. The elusive Ring Nebula (M57), which is one of the telescope targets, lies within this parallelogram. It may thus be worth your while familiarising yourself with this area before you move on to the telescope targets section. (Map 3)
- Coathanger Cluster: This open cluster really looks like a coat hanger. It can be located by finding the bright star about halfway between Vega

and Altair (Albireo – part of the neck of Cygnus). Close by in the same binocular field of view is another bright star (Alpha Vulpeculae). Extend the line connecting these two stars to locate the Coathanger Cluster. (Map 2)

- Delphinus (Dolphin): This is a small constellation that falls outside the Winter Triangle (just off to the east). (Map 1)

Telescope Targets:

The following targets were selected to represent a range of challenges. However, I could locate all these targets with a 6” telescope from Pretoria.

- M71: This is a globular cluster at magnitude 8.5. It is located in Sagitta about halfway between the two solitary stars. It was a faint smudge in my 6” and apertures significantly smaller may need a dark site to view this object. (Map 2)
- M27: From M71, cross the line connecting Delta Sagittae and 12 Sagittae almost perpendicular to get to 12 Vulpeculae. 12 Vulpeculae forms a diamond asterism with two corners made up with single stars and the other two by two widely spaced stars. M27 is just outside the second single star (14 Vulpeculae). (Map 2)
- M57: The Ring Nebula is located on the short line of the parallelogram furthest line away from Vega. There are two bright stars and one duller star. M57 is about halfway between the bright star and the dull star. I could see a de-focussed smudge in a 60mm refractor from Pretoria with a first quarter moon in the sky. It should thus be possible to ‘see’ M57 with most telescopes. My 6” telescope shows the ring that led to the popular name of this 8.8 magnitude Planetary Nebula. (Map 3)
- M56: From the Ring Nebula, extend the line through Sulafat. You will find the following series of stars:
 - Two stars
 - One star
 - One Star
 M56 is slightly beyond the last single star of the series. (Map 3)
- M29: This open cluster can be located close to Sadr, the star where the two lines of the Northern Cross meet. M29 is within two degrees from Sadr. M29 resembles a ‘back-to-back image of a ‘C’ and its mirror image. (Map 1).

Other Targets:

Observers interested to locate more deep sky objects within this area can look out for (See map 1 for locations):

NGC Number	Description	Magnitude
6826	Blinking Planetary	8.8
6960	Veil Nebula (West)	7
6992	Veil Nebula (East)	7
7000	North America Nebula	4
M70	Globular Cluster	9

Happy hunting!

References

The following sources were consulted in the preparation of this newsletter:

Astronomical Society of Southern Africa: Sky Guide Africa South 2006

(Edited by Auke Slotegraaf)

David Ellyard & Wil Tirion: The Southern Sky Guide

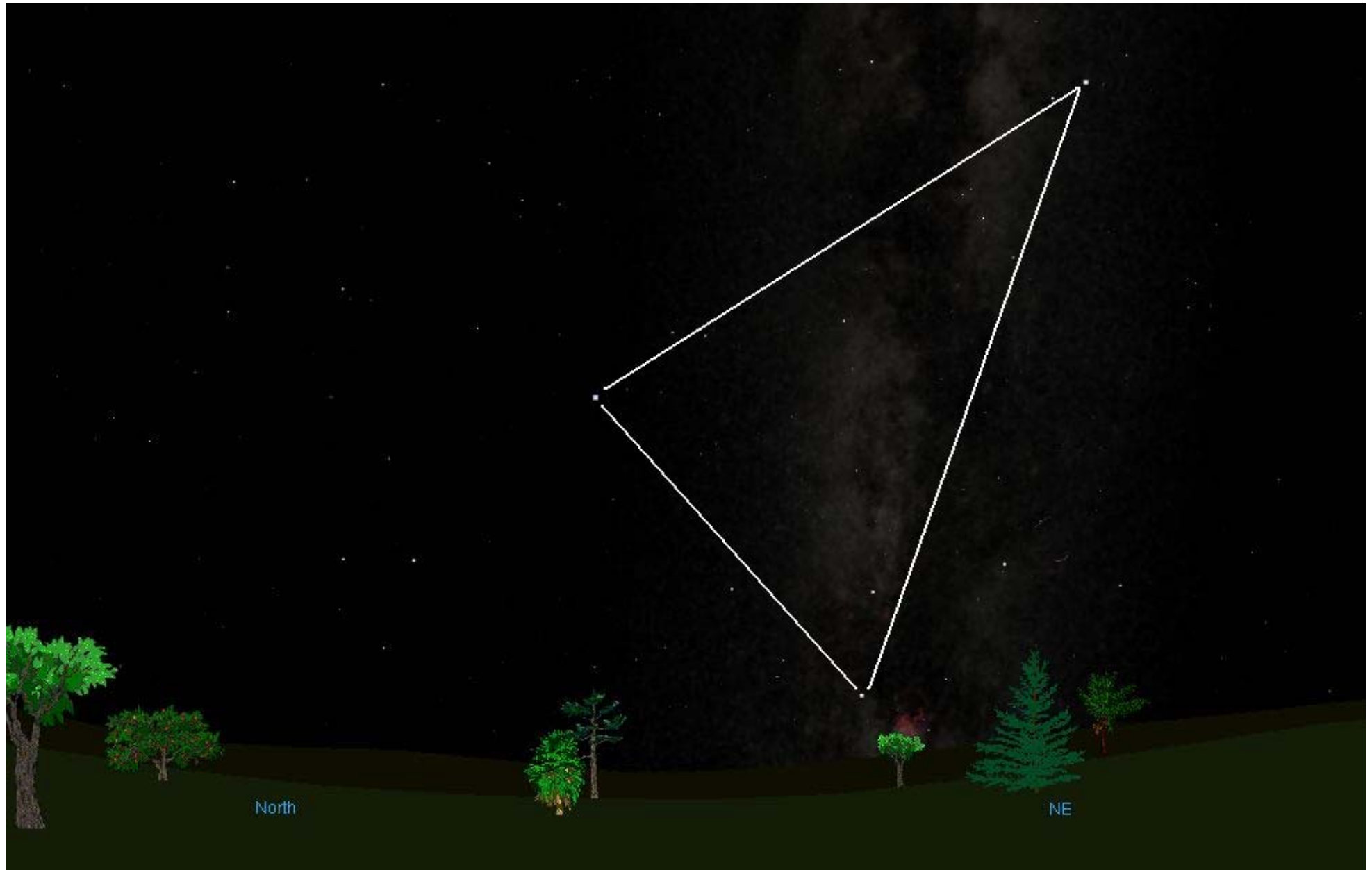
Ian Ridpath & Wil Tirion: Collins Gem – Stars

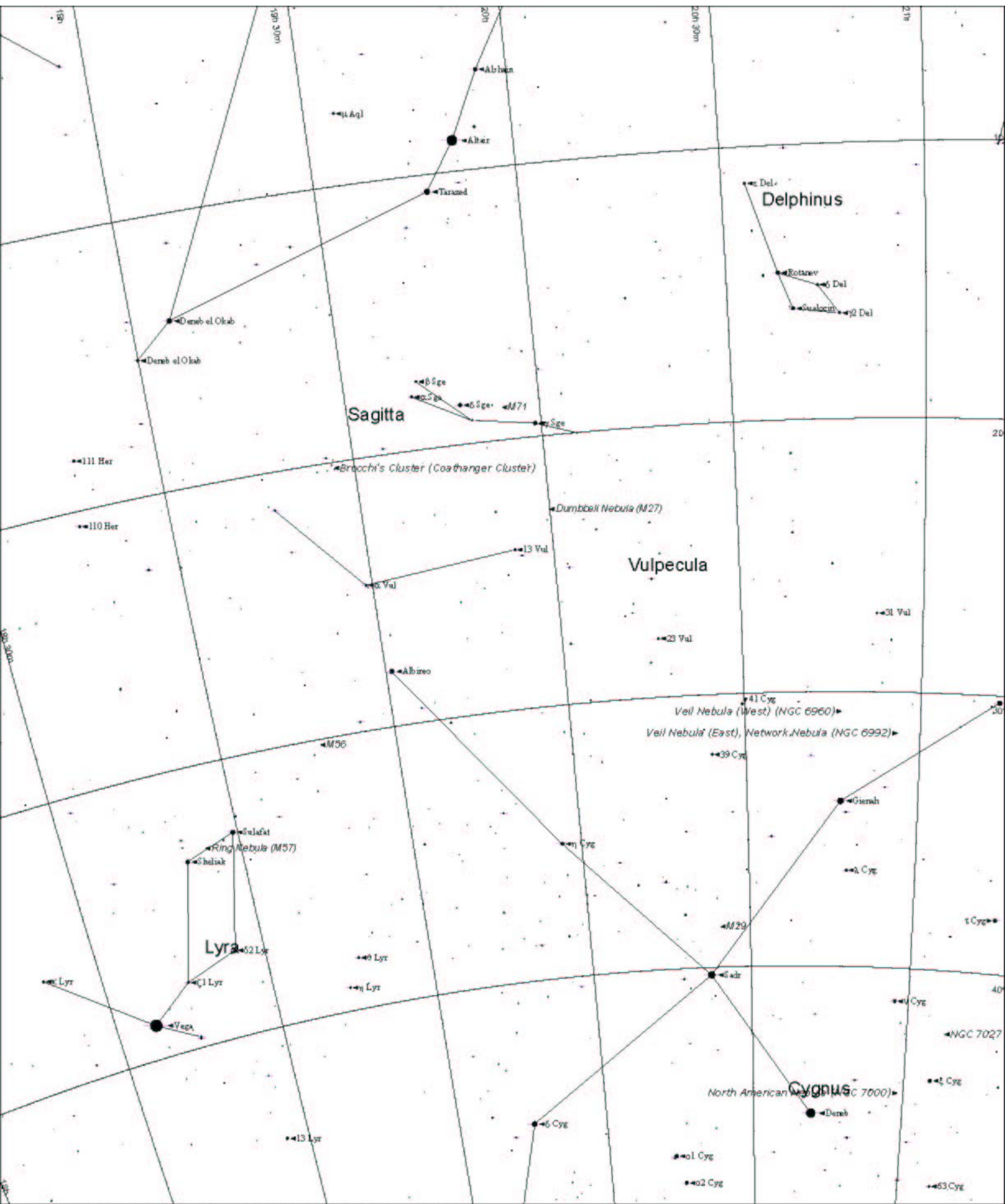
Milton D Heifetz & Wil Tirion: A Walk through the Southern Sky (A Guide to Stars and Constellations and their Legends)

Millenium Star Atlas: Sky Publishing

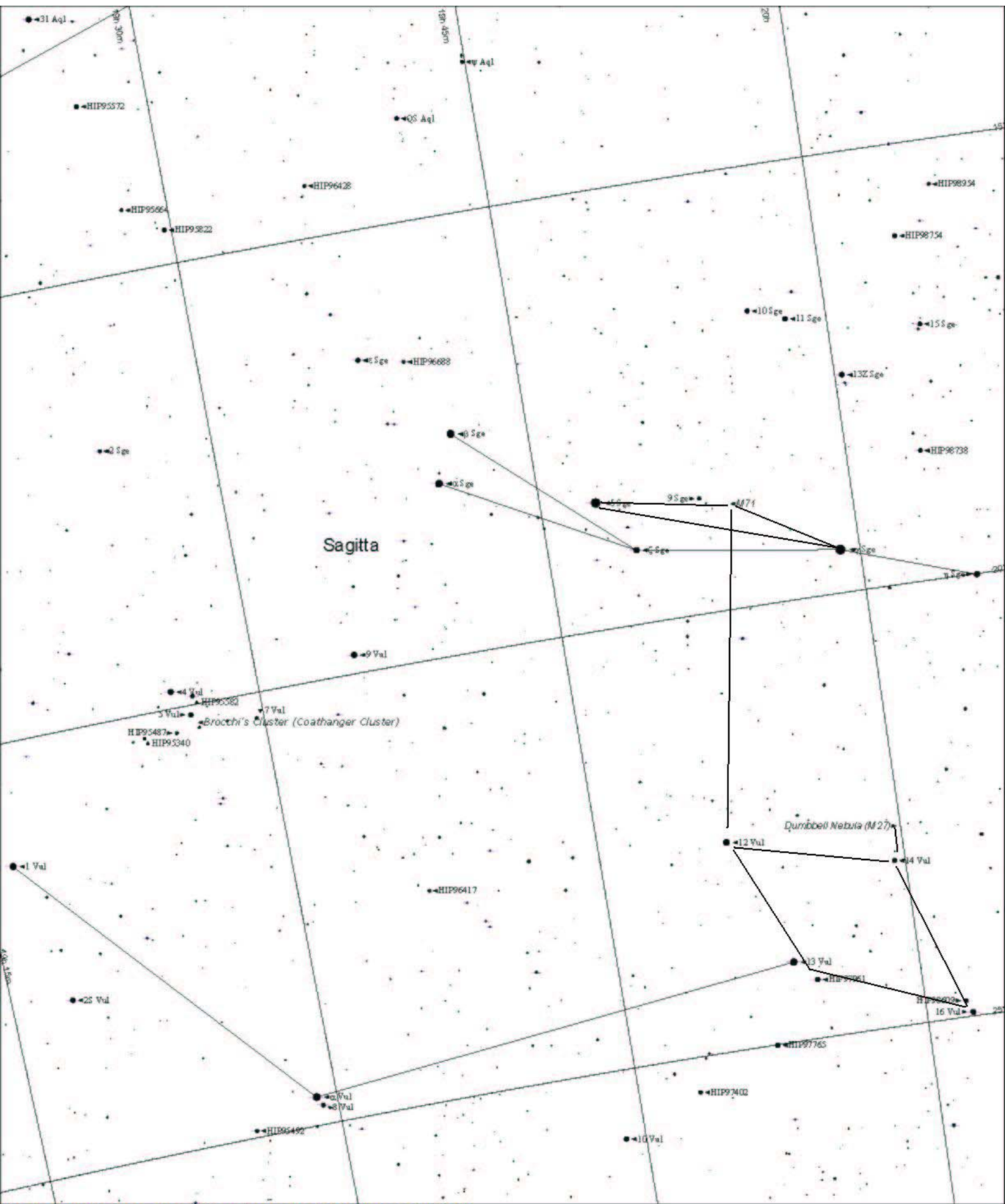
Maps Created with:

Starry Night – Orion Special edition.

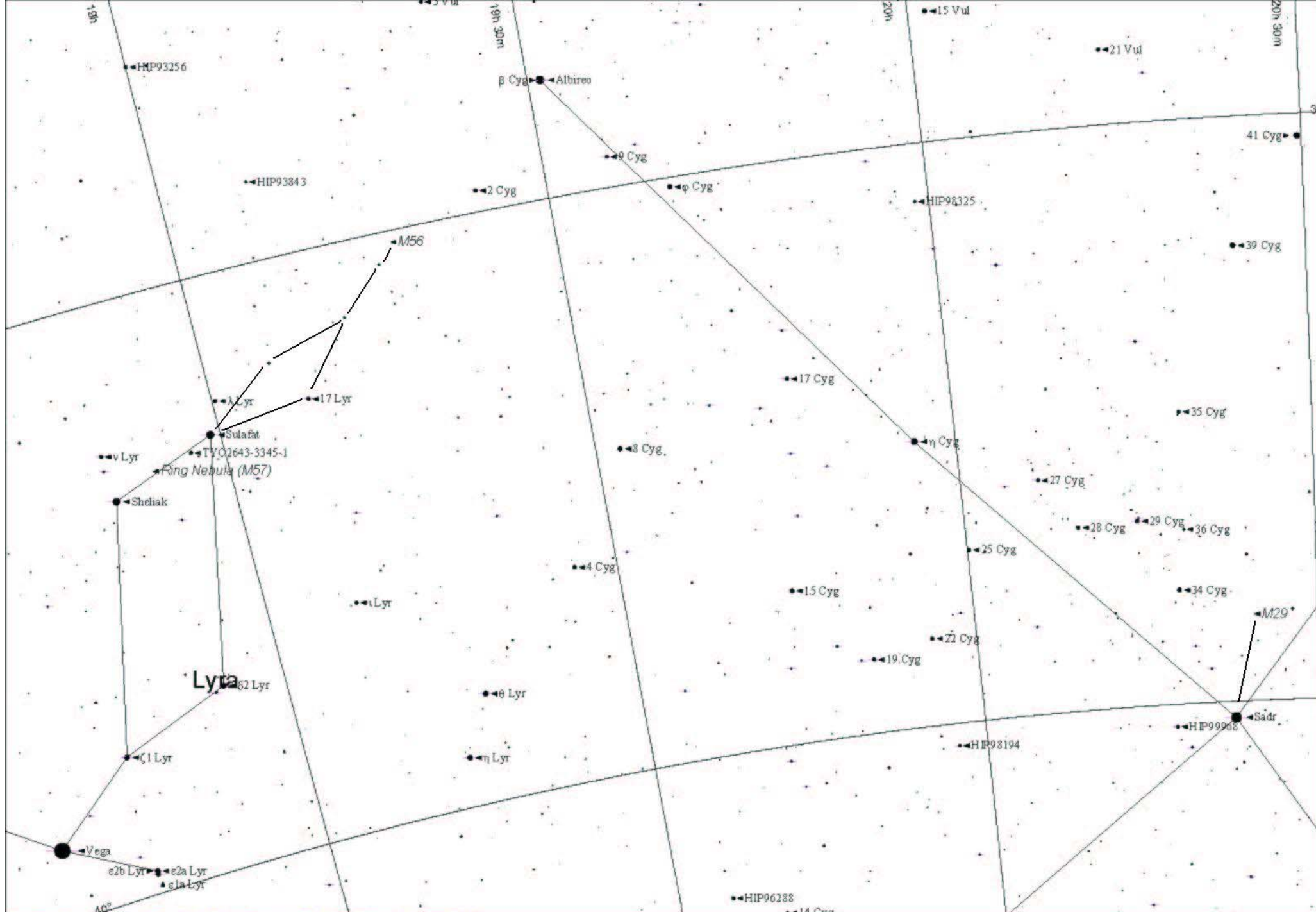




Viewing from Pretoria, South Africa Long: 28° 13' 24" Lat: -25° 43' 29"
 2006/08/11 11:00:00 PM (Local)
 Chart centre (J2000): RA: 19h 50.464m Dec: 26° 4.378'
 Looking: north (37° above horizon)
 FOV: 37°
 Limiting Magnitude: 6.6



Viewing from Pretoria, South Africa Long: 28° 13' 24" Lat: -25° 43' 29"
 2006/08/11 11:00:00 PM (Local)
 Chart centre (J2000): RA: 19h 42.120m Dec: 19° 30.692'
 Looking north (44° above horizon)
 FOV: 12°
 Limiting Magnitude: 9.1



Viewing from Pretoria, South Africa Long: 28° 13' 24" Lat: -25° 43' 29"

2006/08/11 11:00:00 PM (Local)

Chart centre (J2000): RA: 19h 35.274m Dec: 34° 43.619'

Looking: north (28° above horizon)

FOV: 23°

Limiting Magnitude: 8.1