

# Eridanus Optics CC

August 2008

## Deep sky targets in Aquarius.

### **Introduction**

Aquarius is one of the zodiacal constellations. The Sun passes through Aquarius from late February to mid March. In August (six months later) Aquarius rises as the Sun sets and is at a nice altitude by the time it gets dark. This allows for long viewing sessions. You can also continue to search and view the objects discussed in this newsletter in the coming months.

The constellation Aquarius lies in an area of the sky called 'the sea'. This is because several constellations in this area have a watery connotation. These include Pisces, Delphinus, Cetus and Eridanus. I found this a difficult area to navigate due to the lack of bright stars in the area and I could almost identify with the 'lost at sea' feeling.

While compiling this newsletter, the viewing conditions were rather bad, possibly due to high humidity. I can just hope that the reader will experience better viewing conditions. I had difficulty to see magnitude 3 stars with the naked eye.

I used a 6" Dobsonian, which means that most of the objects described should be visible with smaller instruments from darker sites.

### **Naked eye objects**

All stars in Aquarius are around magnitude 3 and fainter. This makes it difficult to visualise this constellation. For the benefit of the remainder of this newsletter, it is suggested you familiarise yourself with the location of Formalhaut (Pisces Austrinus). This is the bright (magnitude 1) almost due East.

Aquarius is located to the North of Pisces Austrinus. Tucked between Pisces Austrinus and Aquarius is another zodiacal constellation - Capricornus. Capricornus is a mythological sea goat, but to me, the constellation looks more like a stealth aircraft (with curvy wings) - See map 1. This constellation is suitable for naked eye observation. Locate the bright stars of Capricornus as follows. About 20° North-West of Formalhaut are two bright stars of Capricornus (Deneb Algiedi - mag 2.8 and Nashira - mag 3.6). About 20° further West of these two stars are Algiedi (mag 3.6) and Dabih (mag 3.0). These four stars are the brightest of the constellation Capricornus and, along with Formalhaut are used as starting points for the instructions below.

## Binocular objects

No specific binocular targets are presented in this newsletter. However, while preparing this newsletter, I used my binoculars extensively and it should be a useful tool while searching the telescopic targets. I could vaguely make out some of the deep sky objects discussed below in my 7x50 binoculars and observers with large aperture binoculars or at dark observation sites should be able to see them more easily.

## Telescope objects

I selected five deep sky objects as objects suitable for telescopic observation. These objects, and instructions to locate them are:

- M72: A faint globular cluster of magnitude 10.0
  - Locate Al Bali to the East of Algedi (Map 1). You should easily see the grouping of 3 stars consisting of Al Bali, Mu Aqr and 7 Aqr (Map 2).
  - Perpendicular to the line connecting Mu Aqr and 7 Aqr, find HIP103162. Extend the line to HIP102891.
  - M72 forms a triangle with HIP102891 and HIP103037. This object was barely visible in my 6" telescope under light polluted skies.
- NGC 7009 (Saturn Nebula): A planetary nebula of magnitude 8.3.
  - Extend the line from Mu Aqr through 7 Aqr to Nu Aqr.
  - NGC 7009 is just over one degree (2/3) towards HIP 103801. In spite of its low brightness, it is surprisingly easy to see because it is less than 1' in diameter. It appeared blue and showed a small disk at 150x magnification.
- M73: A faint open cluster of four stars with magnitude 10 to 12. The brightness of the combined cluster is magnitude 9.
  - From HIP103801 locate HIP103640 towards HIP103545 and HIP103460. Do not confuse these mag 6 stars with the brighter Theta Cap (mag 4) and Eta Cap (Mag 4.8)
  - M73 is about 1/2° towards the North from HIP103640. It is a tight grouping of stars and requires large magnification to identify individual stars.
- M2: A globular cluster of magnitude 7.5. (Map 3)
  - Locate Sadal Suud (Mag 2.9) to the East of Al Bali. Also locate 21 Aqr and Xi Aqr on opposite sides of Sadal Suud.
  - Locate HIP106758 about 5° to the North of Sadal Suud. Another 3° North is 25 Aqr (mag 5).
  - M2 is about 1 degree West of HIP106758. This is one of the objects that should be visible in binoculars.
- NGC 7293 (Helix Nebula): A faint planetary nebula of magnitude 6.5. (Map 4)
  - Start at Formalhaut. Locate Epsilon PsA about 5° towards the North-West.

- Find Upsilon Aqr about 8° North. Look out for the triangle consisting of Upsilon Aqr, 66 Aqr and 68 Aqr.
- NGC 7293 is about 1° to the West.
- You can also double the distance from Epsilon Aqr to HIP111515 to locate NGC7293.
- Although this object is brighter than NGC 7009, I found it more difficult to see. This is due to its much larger size (34'). Use low magnification on this object as this will concentrate the light into a smaller area.
- This object is the closest Planetary Nebula to Earth - 300 to 500 light years away.

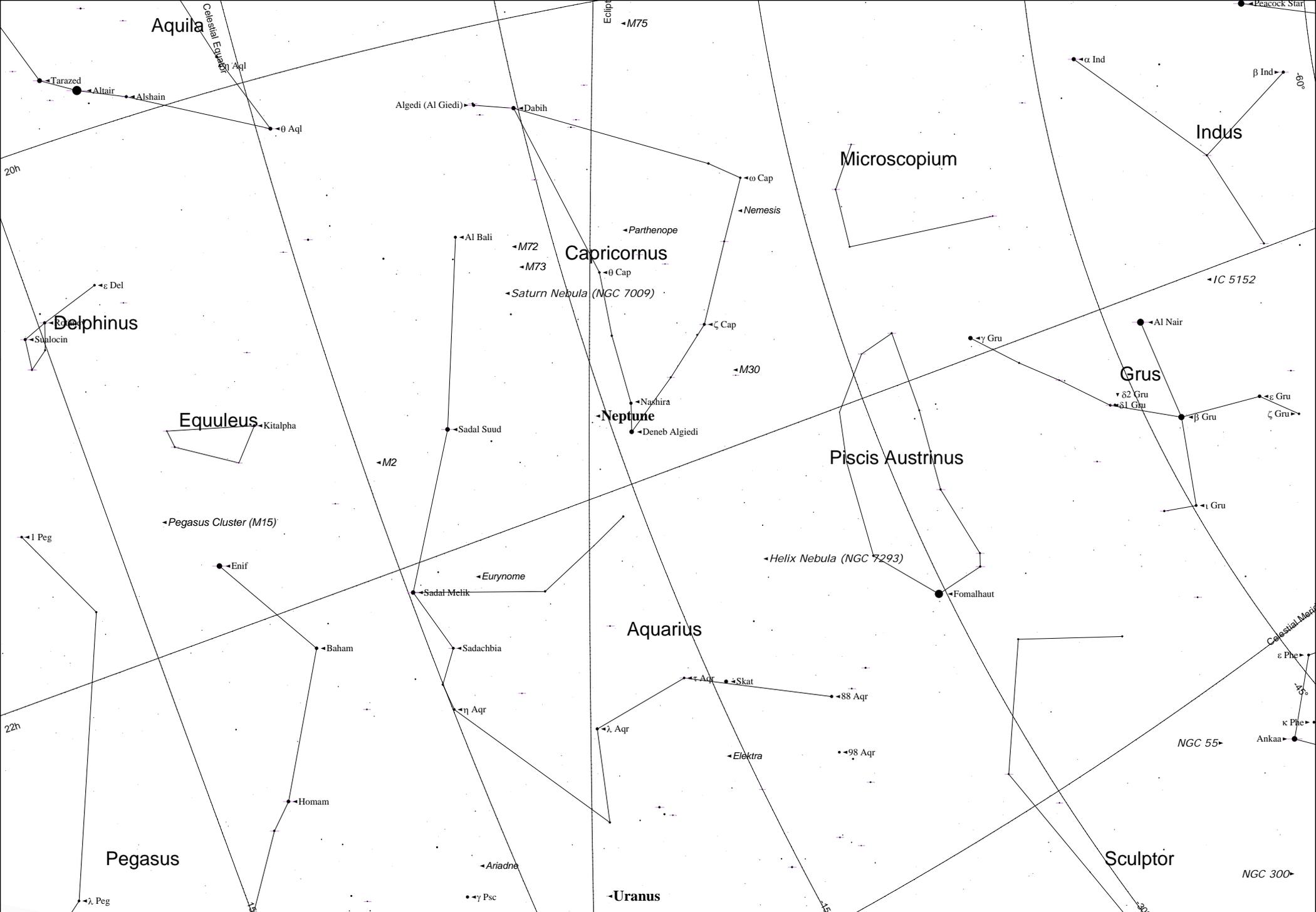
## References

Ian Ridpath & Wil Tirion: Collins Gem – Stars  
Sinnott & Perryman: Millenium Star Atlas

Maps Created with Starry Night (Orion Special Edition)

Good luck.

Andrie



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

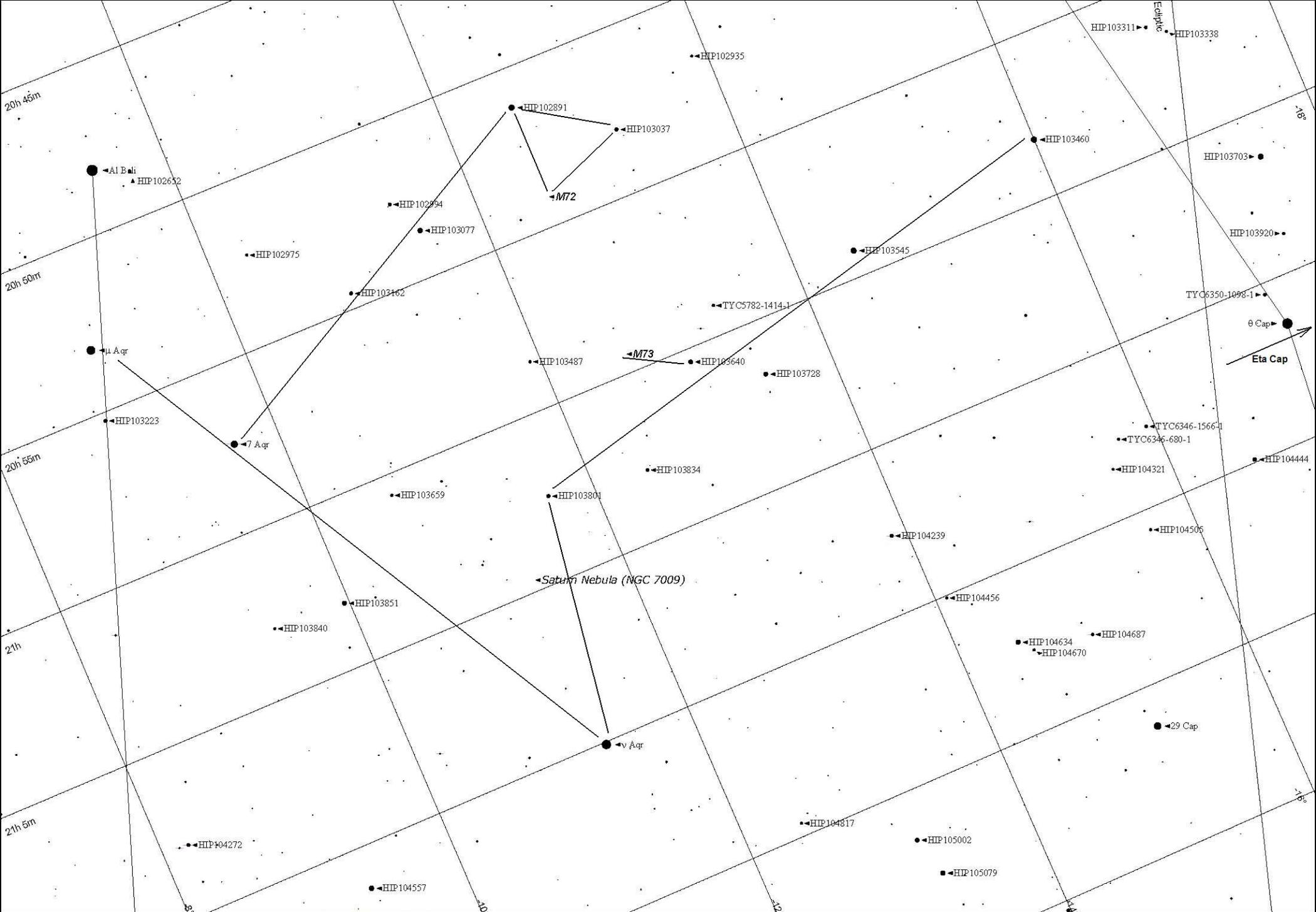
2008/08/20 20:00:00 (Local)

Chart centre (J2000): RA: 21h 55.354m Dec: -17° 6.867'

Looking: east (32° above horizon)

FOV: 77°

Limiting Magnitude: 6.4



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

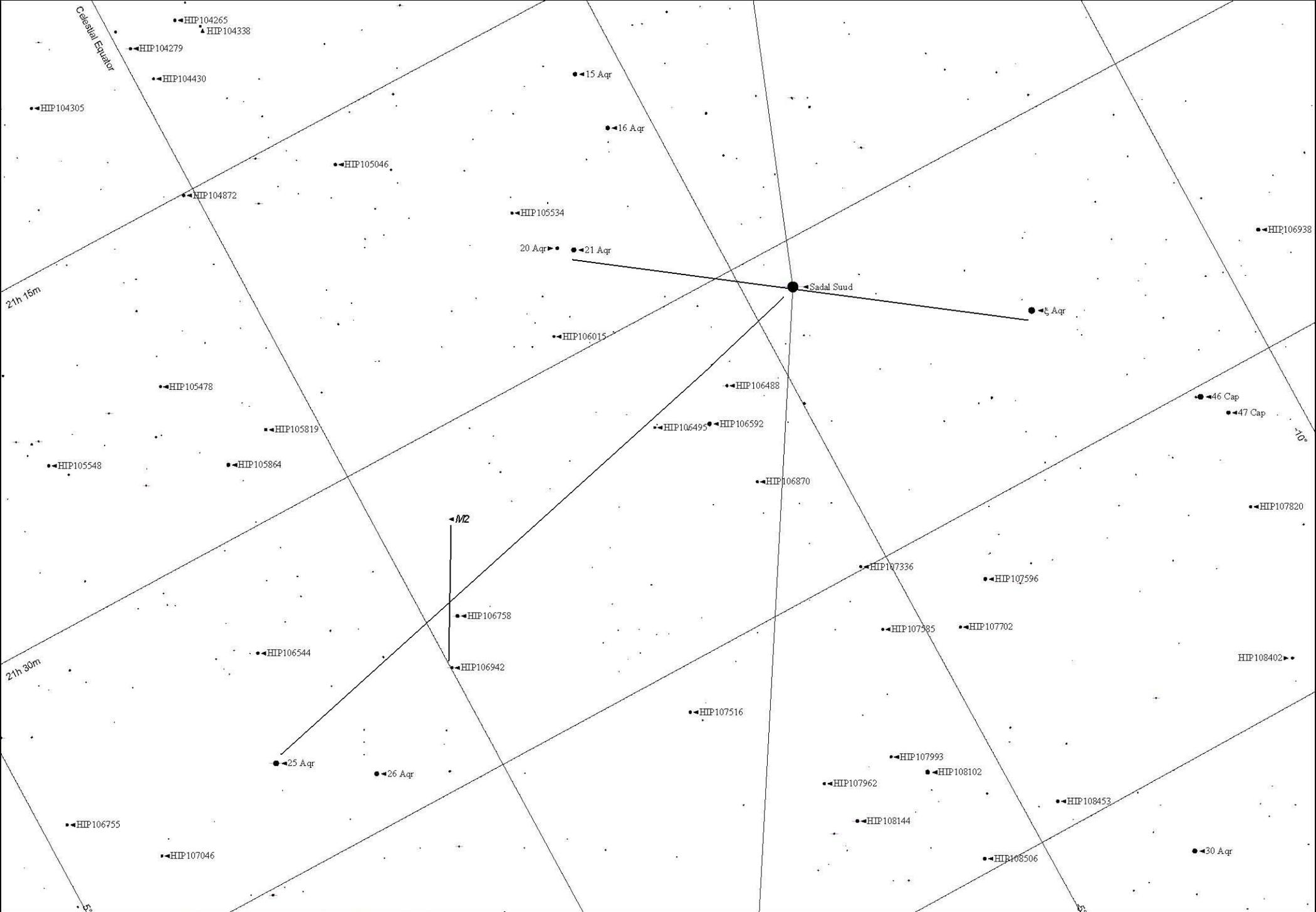
2008/08/20 19:30:00 (Local)

Chart centre (J2000): RA: 21h 2.183m Dec: -12° 33.377'

Looking: east (36° above horizon)

FOV: 9.7°

Limiting Magnitude: 9.9



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

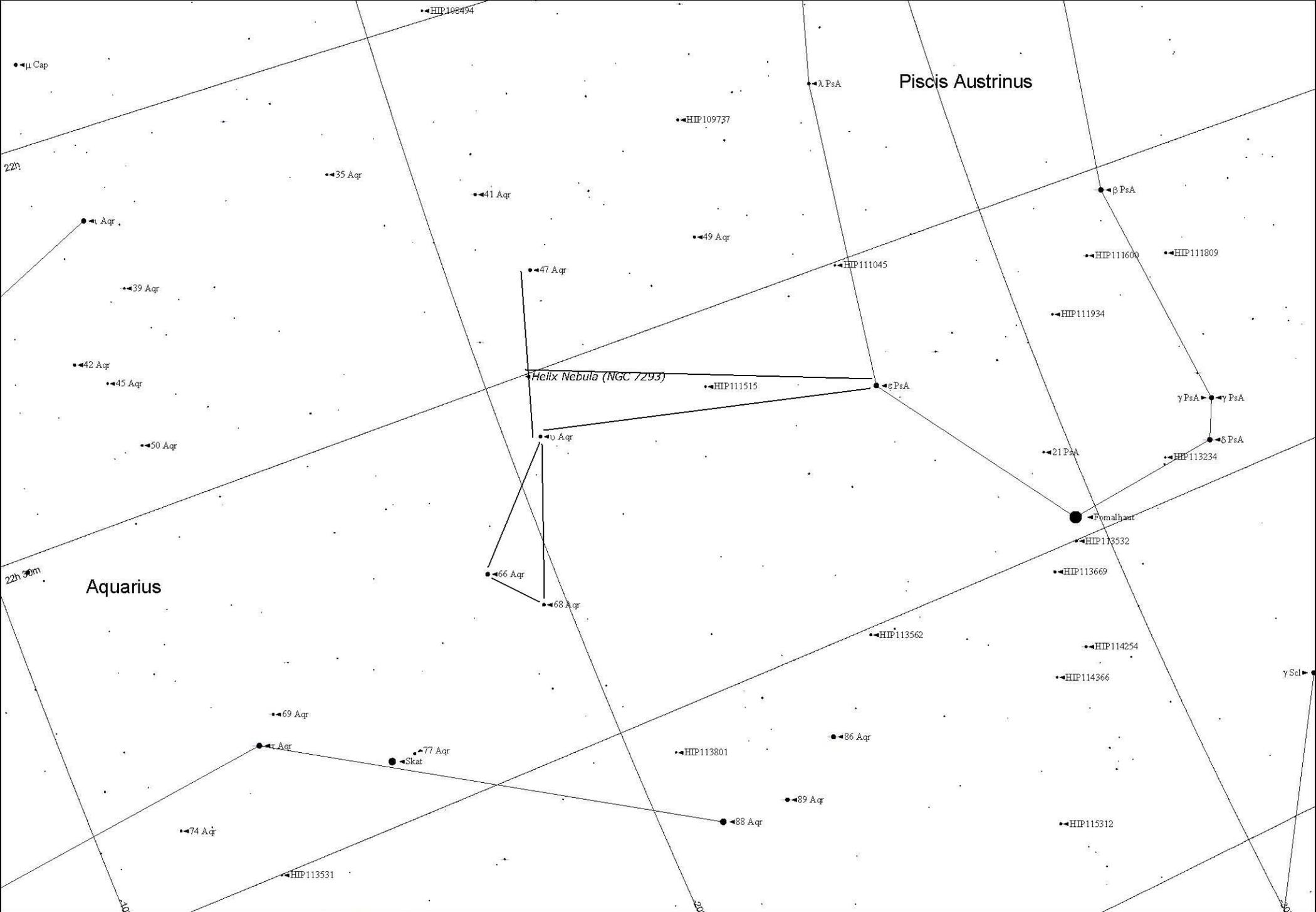
2008/08/20 20:00:00 (Local)

Chart centre (J2000): RA: 21h 35.493m Dec: -3° 16.927'

Looking: east (31° above horizon)

FOV: 15°

Limiting Magnitude: 8.9



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

2008/08/20 19:30:00 (Local)

Chart centre (J2000): RA: 22h 39.647m Dec: -22° 39.929'

Looking: east (18° above horizon)

FOV: 25°

Limiting Magnitude: 7.8