



Star Hopping the Summer Sky

By Andrew Lohfink

Don't get overwhelmed.

Star hopping is way of navigating the night sky.

It is free and no equipment is needed other than eyes.

It is easy to do.

Take things slowly and do a little every clear night.

It is based on recognising a few main stars and shapes.



Finding North – Getting Your Bearings.

It is very useful to know which way you are facing.

Often descriptions are given which include “look at the southern sky” etc.

By finding north you can then orientate yourself.

Finding north means identifying the Pole Star/North Star (Polaris).

Look for The Plough asterism – everyone has seen this. It is circumpolar and always visible.

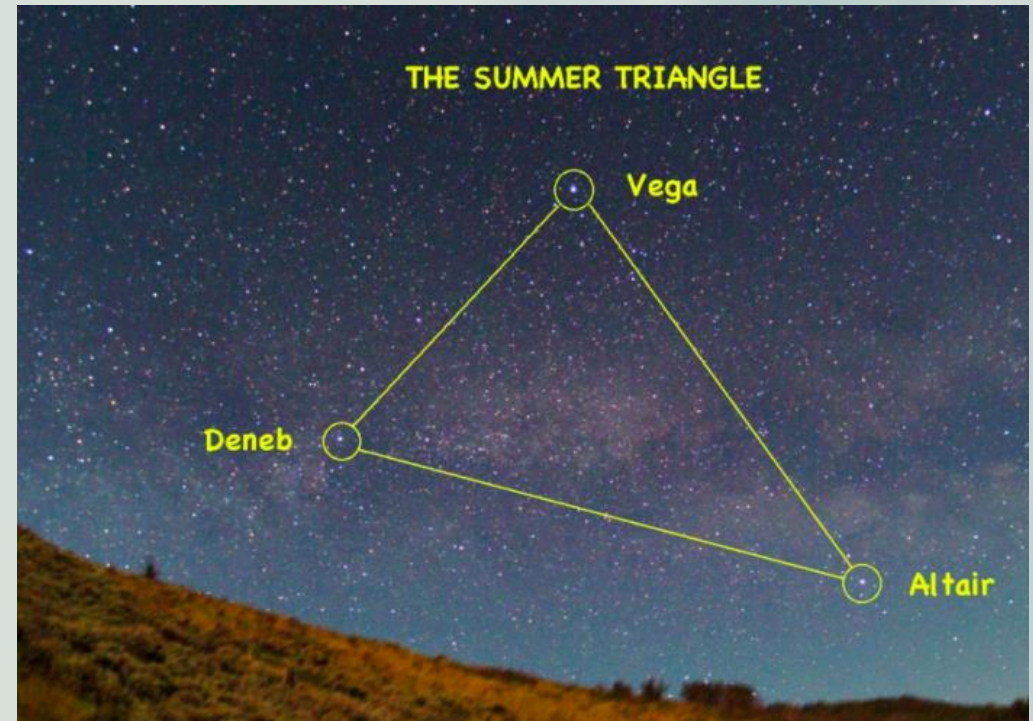
Draw a line through the right hand stars forming the pan and extend to find the North Star.

Facing the Pole Star you are looking north. With your back to the Pole Star you are facing south.



The Summer Triangle.

- The summer triangle is composed of 3 stars - Vega, Deneb and Altair.
- These 3 stars are the brightest and are the ones you will see first as dusk settles and night draws in.
- At this stage you do not need to know anything else. Just get used to identifying these three stars.
- Vega will be near the zenith (top of the sky) and the other two will be below towards the east / southern sky.



The Summer Triangle.

When you are confident in identifying the 3 stars of the summer triangle you are ready for the next step. Each star belongs to a different constellation.

Vega lies in Lyra.

Deneb lies in Cygnus.

Altair lies in Aquila.



What you have learned so far :-

You can find north and orientate yourself.

You can identify the 3 stars in The Summer Triangle.

You know the names of these 3 stars - Vega, Deneb & Altair.

You know that each of these 3 stars belongs to a different constellation.

You know the names of 3 constellations and roughly where they are in the night sky - Lyra, Cygnus, Aquila.

Asterisms.

- The next step is to learn some asterisms.
- An asterism is a chance alignment of stars which form a pattern which we can recognise and never changes.
- Each of the 3 constellations you know the rough position of will have many stars which seem randomly scattered. They will seem mixed up with lots of background stars which are not in the constellation.
- However, the key to identifying these constellations is to look for 1 asterism in each constellation which is easy to identify.
- Practice makes perfect. The more you observe these asterisms the easier it becomes to identify each one with ease.



The Constellation of Lyra

- Remember the star Vega from The Summer Triangle.
- It is in the constellation of Lyra.
- Lyra is named after an ancient harp musical instrument.
- We are therefore looking for an asterism (star pattern) which looks like a harp near to Vega.

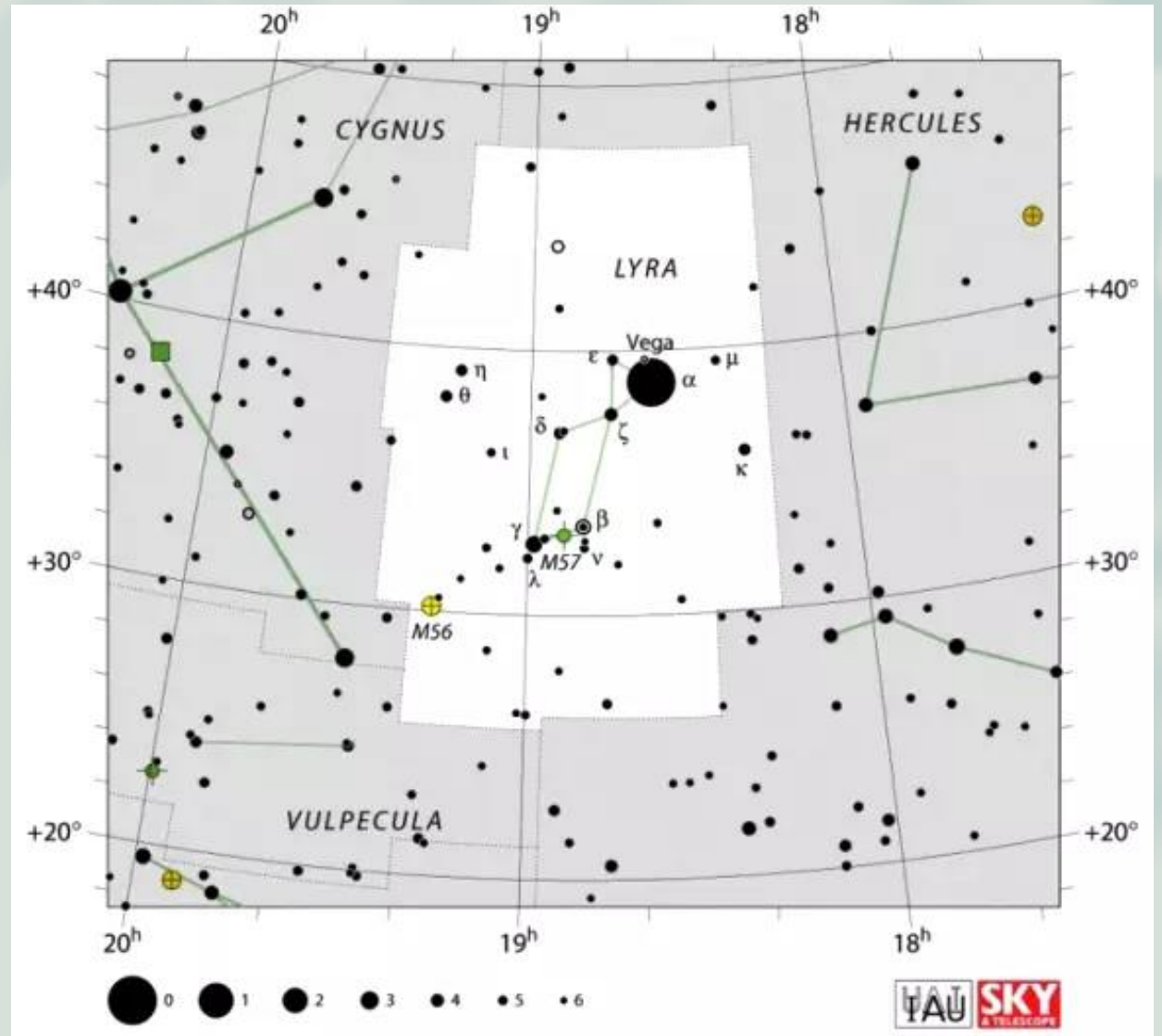
Lyra Constellation.

- Lyra is a small compact constellation which is easy to identify if you know where Vega is and can identify The Harp asterism.
- The rest of the constellation will then fall into place.
- Look at a star chart. Pick out The Harp asterism and Vega and then identify the main outline of the rest of the constellation.
- There will be other stars which belong to the constellation outside this main outline but these are not important. I have no idea about most of them!



Lyra Constellation.

- Look at your star map.
- Pick out objects you might like to observe on the map.
- In Lyra, Messier 57 is a famous planetary nebula. You can see where it is on the map and can now translate this position into the night sky constellation.
- You can confidently point your telescope / binoculars in the right area to observe this object just by star hopping.
- You can also identify other objects and navigate to them from the outline stars you can now identify.



Cygnus Constellation – The Northern Cross Asterism.

- Look for Deneb from The Summer Triangle.
- It forms one end of the Northern Cross asterism.
- The other end of the cross is Albireo. This is one of the most famous double stars in the night sky, easily split with binoculars.
- You now know how to find another iconic night sky object just by star hopping.



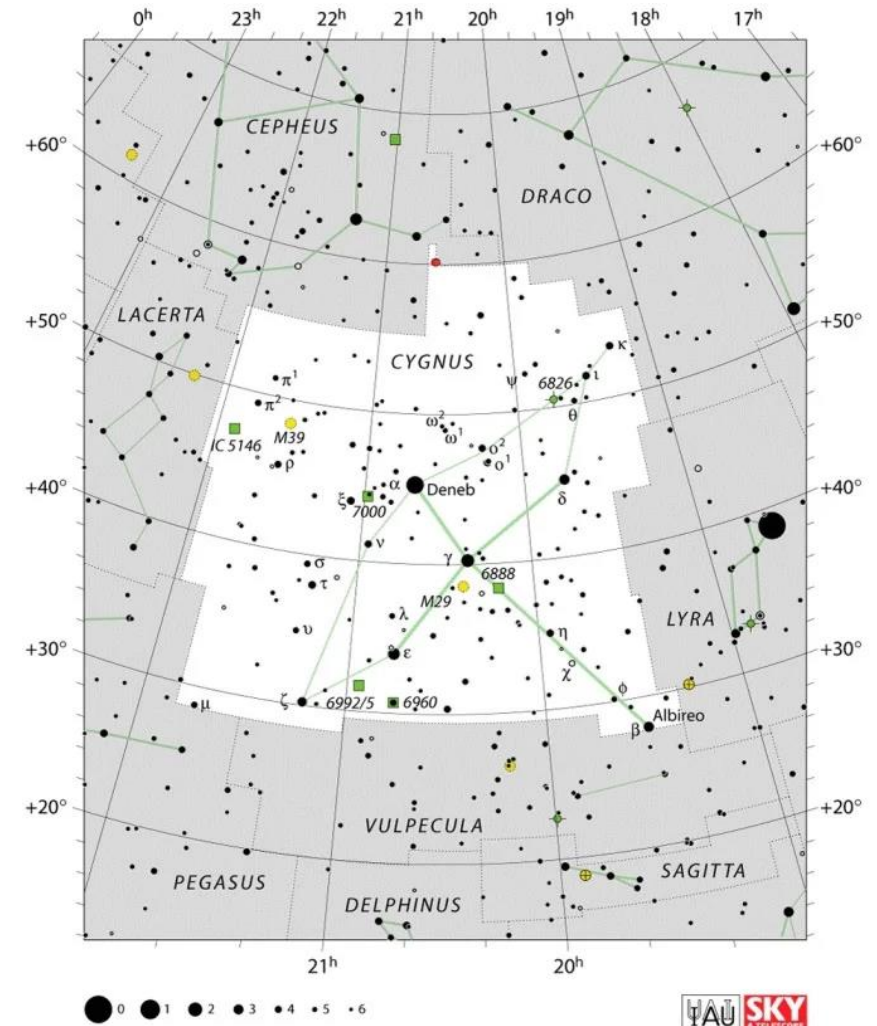
Cygnus Swan Asterism

- The Northern Cross can be extended to add in more stars to make The Swan asterism after which the constellation is named.



Cygnus Constellation.

- As you did with Lyra, you can use your star map / atlas to identify objects you would like to observe and relate this to the star patterns you can identify.



Lyra and Cygnus

- Now you can identify Lyra and Cygnus just look at the sky and orientate yourself to identify the 2 constellations and how they relate to each other.
- Use this knowledge to further develop patterns to view objects.
- One example is Messier 56, a globular cluster. It lies midway between the corner star of The Harp and Albireo.



Aquila Constellation.

- Remember Altair from The Summer Triangle?
- This star is in Aquila The Eagle.
- Altair is also easily identified as it lies below a bright orange star.



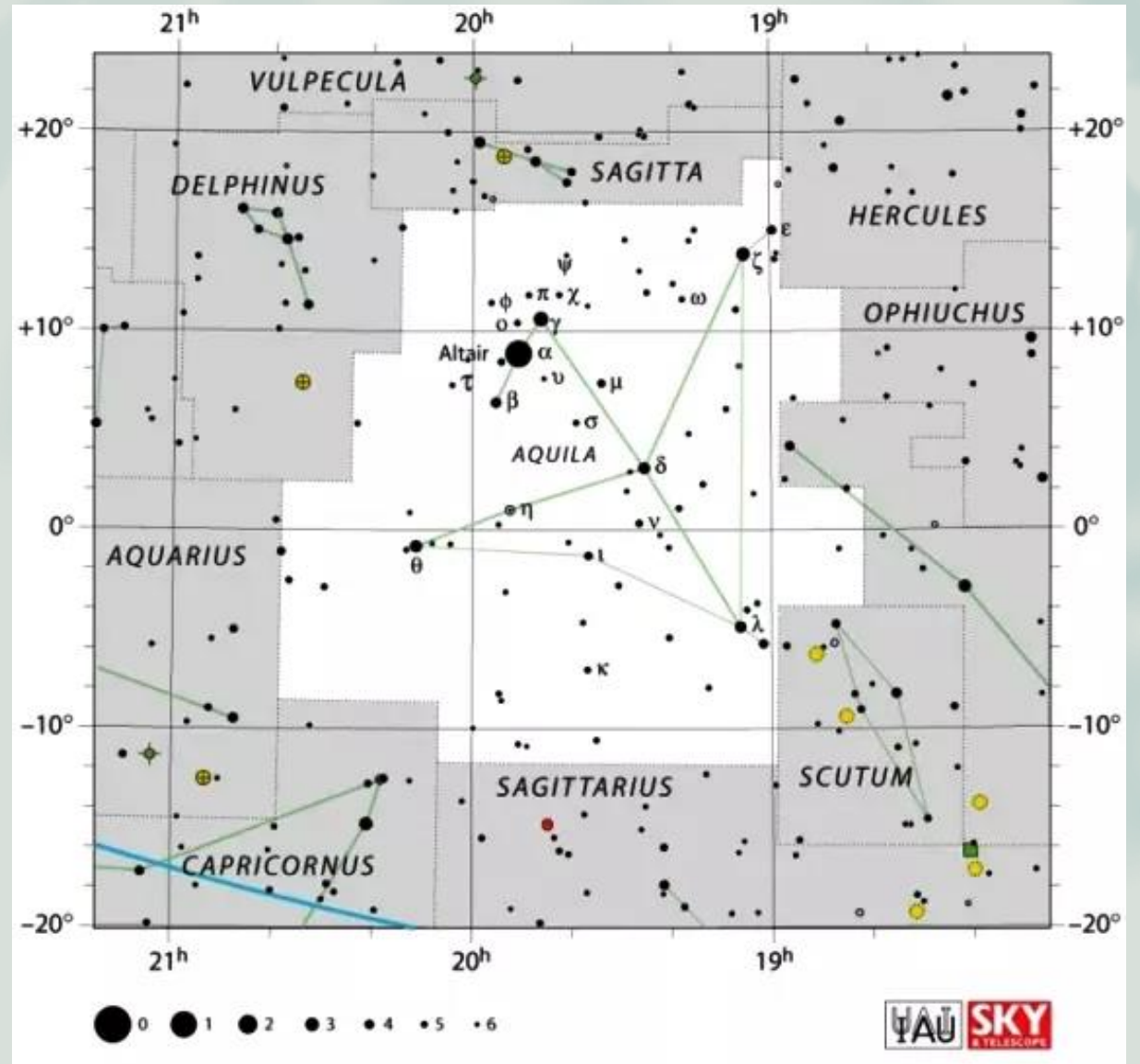
Aquila The Eagle Asterism

Altair is at the head of The Eagle.



Aquila Constellation

- Again, look at a star atlas / map and identify the constellation outline and relate this to what you can see in the night sky.
- Also note the small gentle curve of 3 stars at the lower end of Aquila as this is important for future star hopping.
- At the end of this gently curve lies Messier 11 - The Wild Duck Cluster. This is another iconic object you can now find by star hopping.



You now know The Summer Triangle and the three constellations at each of the corners.

There are a few small constellations within the borders of The Summer Triangle.

There are constellations outside the borders of The Summer Triangle



Constellations
Inside The
Summer
Triangle.

Sagitta

Delphinus

Vulpecula

Sagitta Constellation

- Sagitta means "Arrow"
- We are looking for an asterism which resembles an arrow.
- Look midway on a line between Albireo (end of The Northern Cross) and Altair for "The Arrow"
- This "Arrow" is the entire constellation of Sagitta



Delphinus Constellation

- Delphinus means "Dolphin"
- We are looking for an asterism which resembles a dolphin.
- Head in the general direction where Sagitta is pointing and then look below this line until you hit an asterism which looks like a dolphin.
- You have found Delphinus.

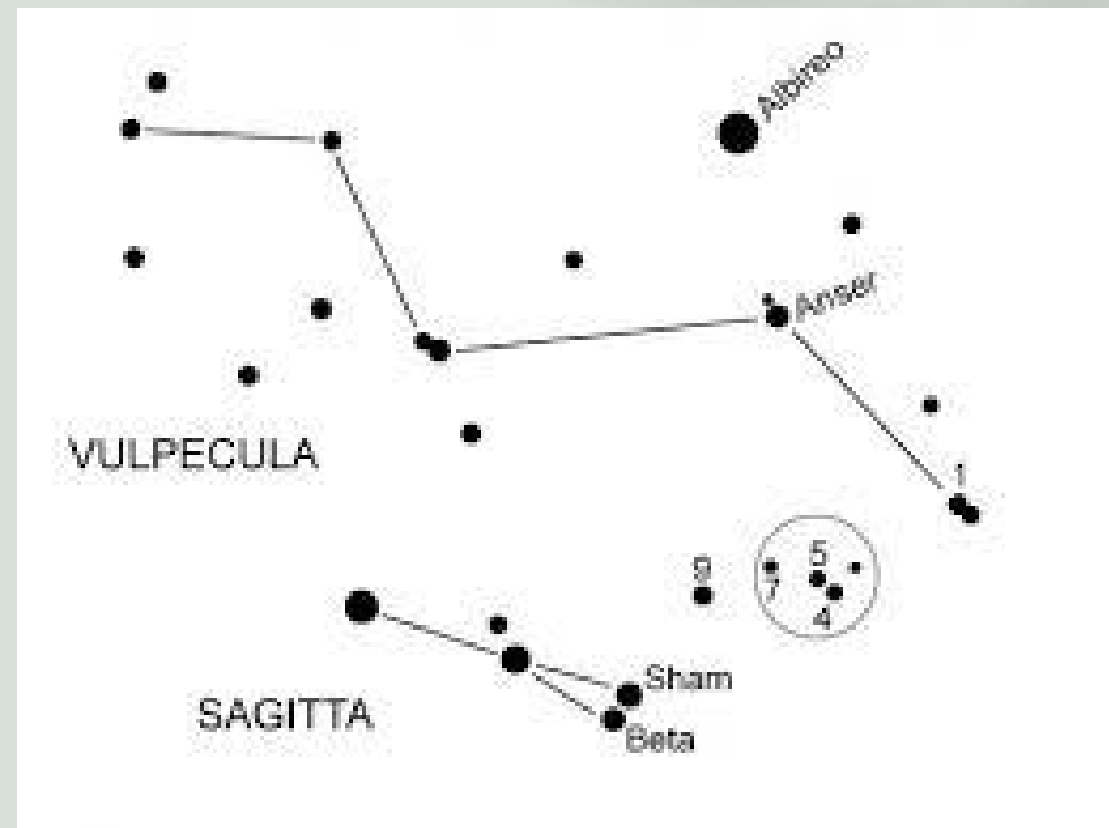


Sagitta and Delphinus

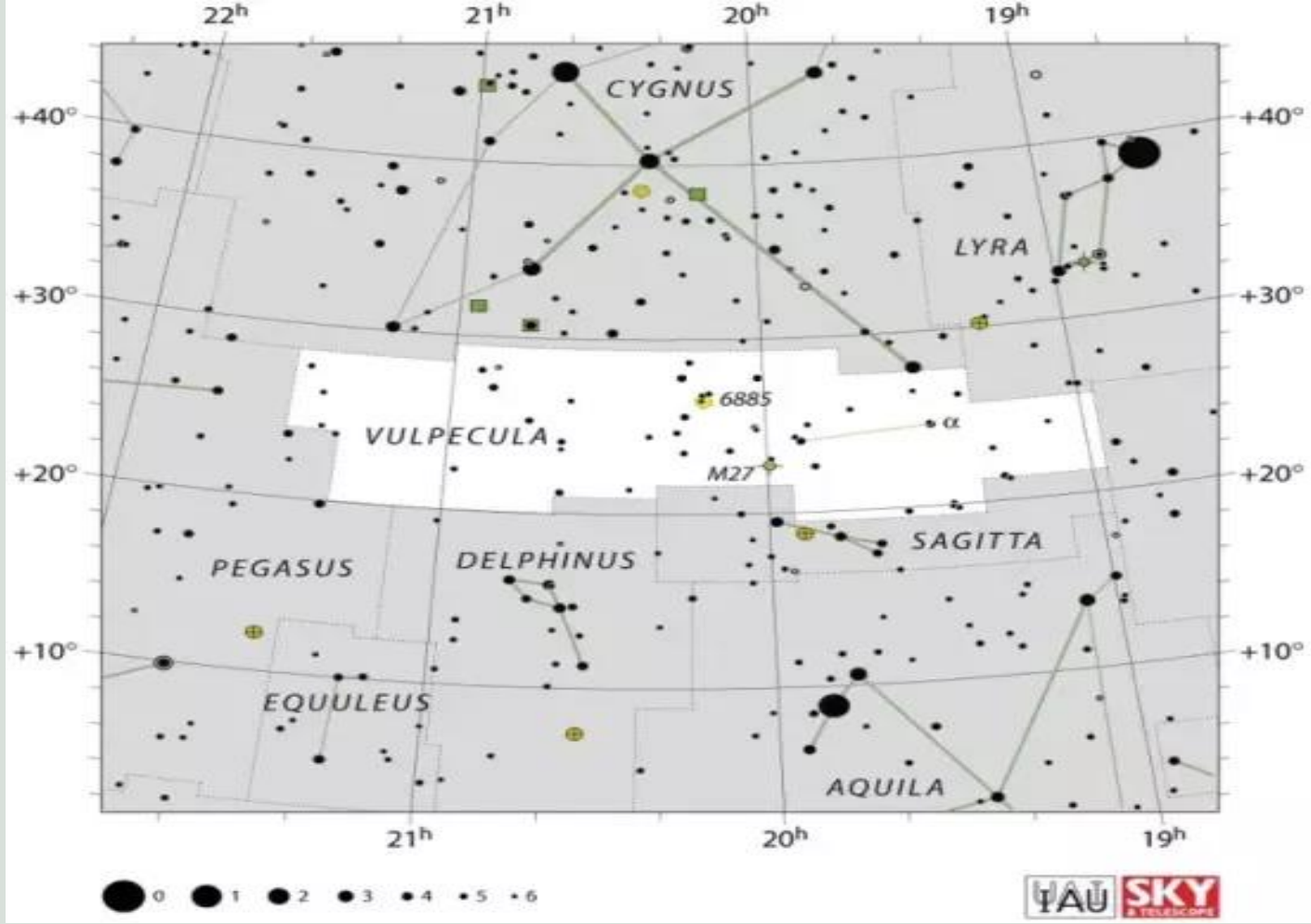


Vulpecula Constellation

- Vulpecula means "The Fox"
- Unfortunately there is no asterism in this constellation which is easily recognisable as a fox
- We can only see 2 stars easily in this constellation.
- The key is to look midway between Albireo and Sagitta to find 2 bright stars and the line that joins these stars is in Vulpecula



Star Map of Sagitta, Delphinus & Vulpecula



Constellations
Outside &
Below The
Summer
Triangle

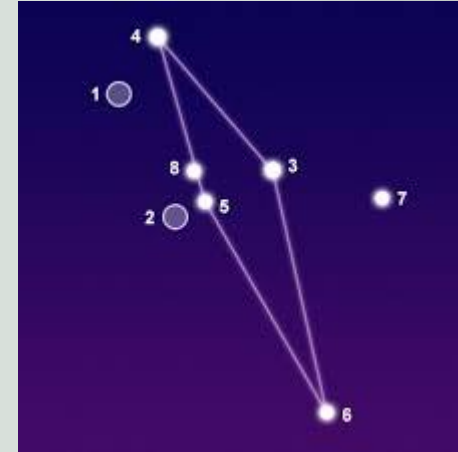
Scutum

Sagittarius

Capricornus

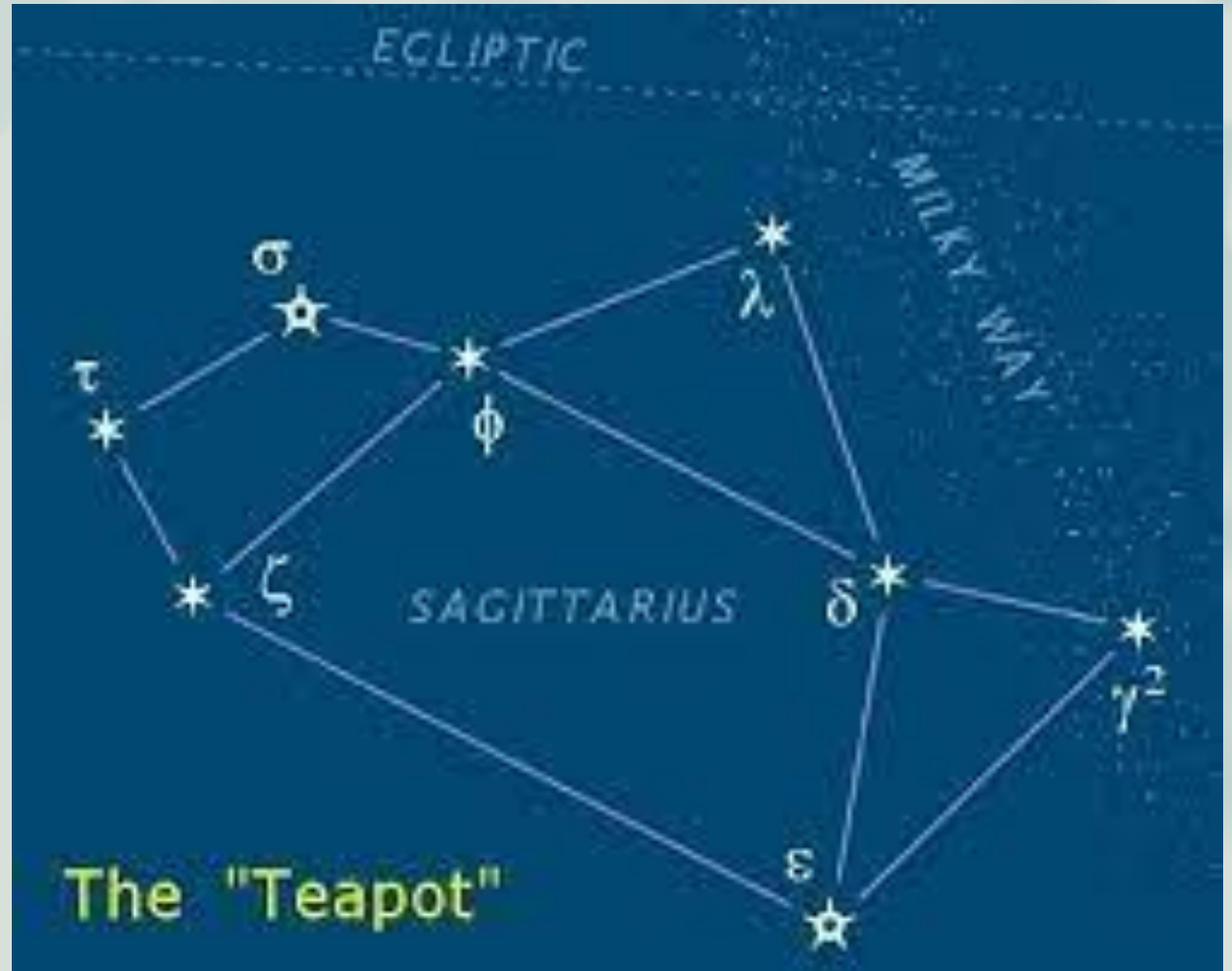
Scutum Constellation

- Scutum means "shield"
- We are looking for an asterism which resembles a shield.
- Remember the 3 curved stars at the base of Aquila?
- Follow the curve of these stars and they lead to the uppermost star in Scutum



Sagittarius Constellation

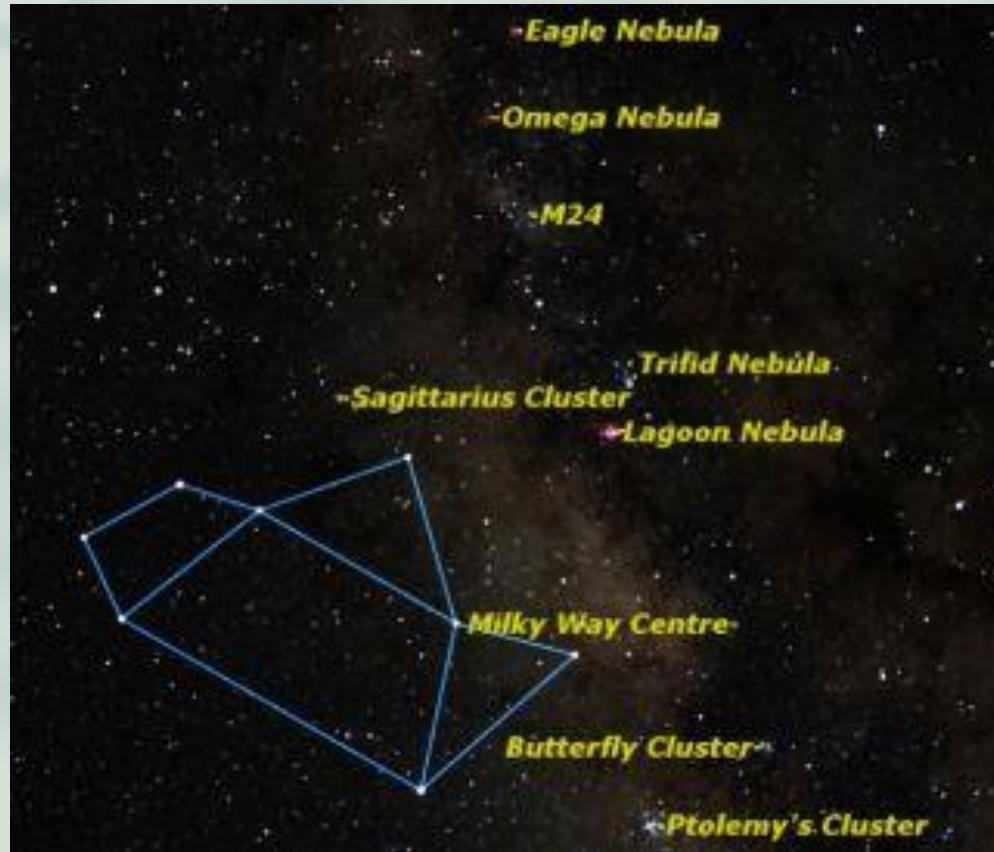
- Follow a line down from the bottom star of The Shield Asterism until you hit another famous asterism... The Teapot.
- The Teapot lies in Sagittarius.



The Teapot Asterism in Sagittarius

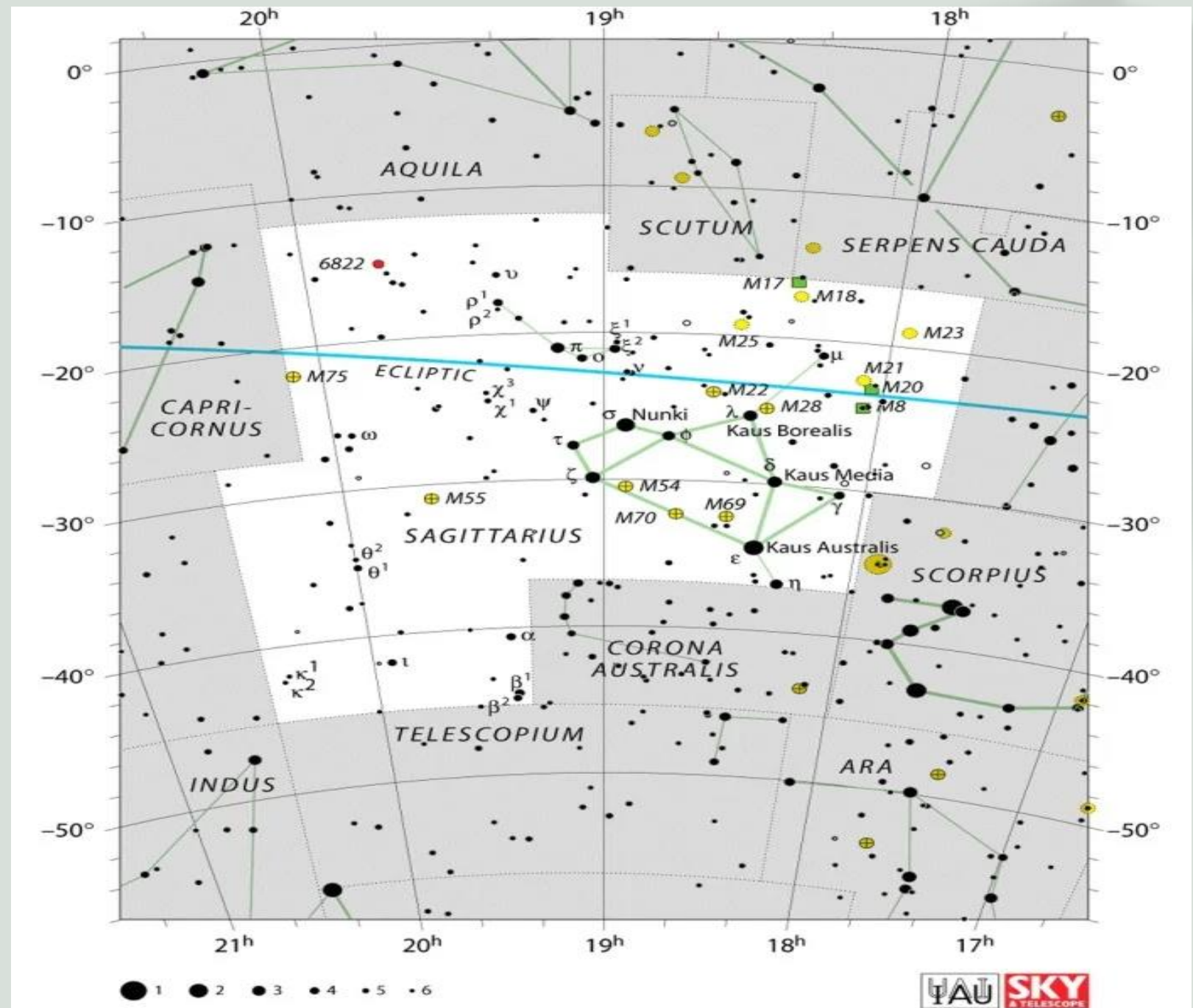


Sagittarius



- The Milky Way runs through Sagittarius and the "spout" points towards the galactic centre.
- Sagittarius is jam-packed full of interesting stuff.
- The patterns of the stars in The Teapot lend themselves easily to form shapes to find a host of interesting objects. It just needs practice.

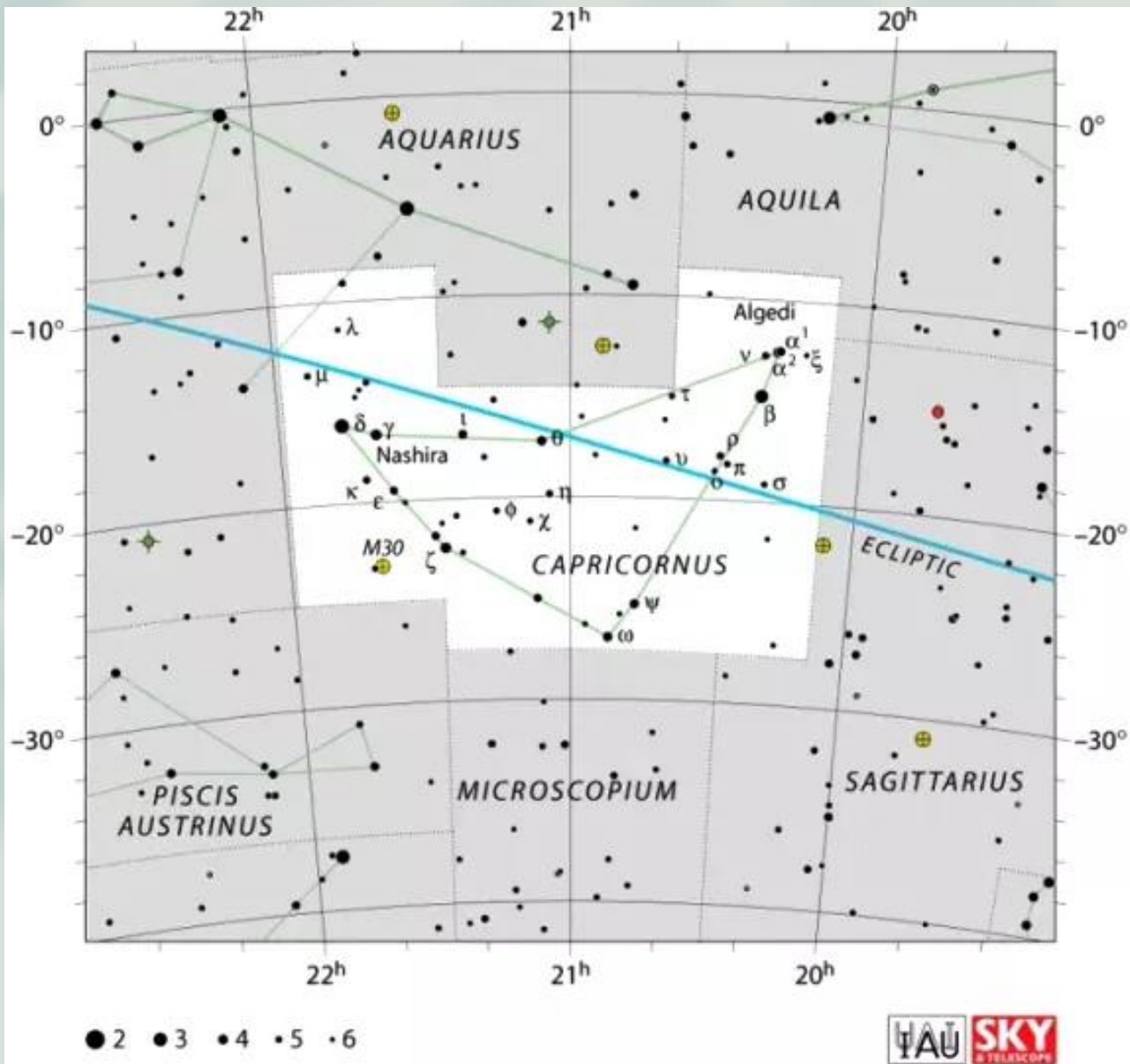
Sagittarius



Capricornus Constellation

- To the east (left) of The Teapot lies a large curve of stars which lie in Capricornus.
- I imagine a large open mouth asterism.





Capricornus