

ANDROMEDA

The Chain Maiden

by Teoh Hui Chieh

“Left with no choice, poor Andromeda was punished for her mother's boast...”

In the evening night of November and December, hanging almost overhead is the easily recognisable Autumn Square. This Square is so prominent that usually is the first thing that caught your attention when you look up.

Many of us thought that the Autumn Square – or sometimes also known as the Great Square of Pegasus – belongs to the constellation Pegasus; almost correct, but not quite... Three of the stars that made up the northwest, southwest and southeast corner of the Square do belong to Pegasus, but the one on the northeast corner – the brightest star of the Square named Alpheratz – actually belongs to Andromeda.

We can forgive people for the confusion though; Alpheratz has long been treated as being in Pegasus and simultaneously in Andromeda. Johann Bayer, a celestial cartographer of the 17th century, had catalogued it as both *alpha* (α) *Andromedae* and *delta* (δ) *Pegasi*.

Even the name Alpheratz itself shows its historical association with Pegasus. Alpheratz (or Sirrah, as it also sometime known as) was derived from Arabic meaning “the navel of the horse”.

However, in modern star chart, many of the constellations have been redefined so that every star in the sky is exactly in only one constellation – and Alpheratz is now officially placed in Andromeda. If you look at the modern star chart for Pegasus, you will realise that now there is no such star as δ *Pegasi*.

With the help of Autumn Square, the constellation Andromeda can be easily located. Alpheratz, as was

mentioned before, is located at the northeast corner of the Square, which marks the head of Andromeda the chain maiden.

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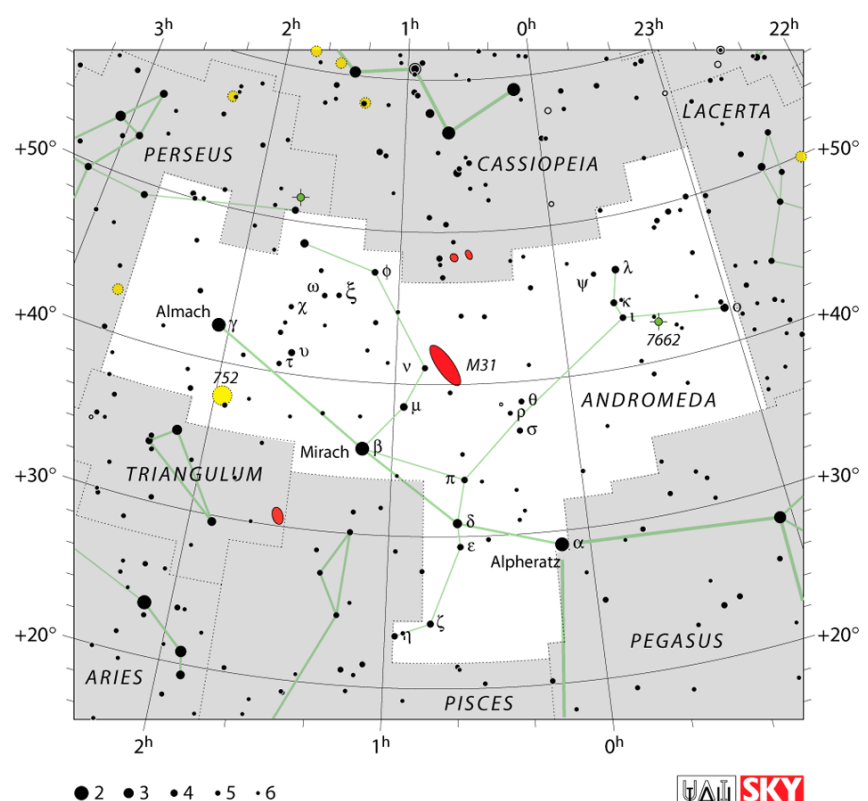
From Alpheratz, move northeast to find the second brightest star in Andromeda – Mirach. Continue moving northeast and you will end up at Almach, the third brightest star in the constellation.

Now, with a lot of imagination and help from the chart attached, try

to imagine these three stars forming the head, waist and left leg of a maiden, and the dimmer stars to the northwest forming the right hand and leg. Got it? It's difficult, I know...

Andromeda belongs to the royal constellations in the Greek mythology which includes her father constellation Cepheus the King of Ethiopia and her mother Cassiopeia the Queen.

Cassiopeia was a vain and boastful queen. She claimed that she was so beautiful that even the Nereids (sea nymphs) could not surpass her beauty. Her claimed angered the Nereids and they complained to Poseidon, the Sea God, and demanded that Cassiopeia be punished.



Constellation

Poseidon agreed and sent a terrible sea monster Cetus to destroy King Cepheus' land. Cetus set upon his mission and began the slaughter. King Cepheus' people were so frightened that they pleaded the king to save them.

King Cepheus consulted the Oracle of Ammon for a solution and the oracle told Cepheus that he had to sacrifice his daughter Andromeda if he wished to stop the slaughter. Left with no choice, poor Andromeda was punished for her mother's boast. She was chained to the rocks by the sea and left for the dreadful Cetus to devour.

Andromeda was terrified, pale and weeping pitifully when the hero Perseus passed by. Perseus was on his way back from victory against the Gorgon Medusa – the woman with snakes as hair and a direct look would turn any mortal into stone.

At first, Perseus thought Andromeda was a statue, but as the wind ruffled her hair, he was overwhelmed by her beauty and saw that she was crying. He stopped and asked her name and the reason she was there. Shy Andromeda did not at first reply, but after Perseus insisted, she told him the story of her boastful mother and the advice the oracle had given her father.

Before Andromeda could finish her story, sea monster Cetus arose from the sea and headed for her. Perseus quickly turned to Cepheus and Cassiopeia and requested Andromeda's hand in marriage if he kills the monster.

Cepheus agreed. Perseus then draws his sword and leapt into the air to the attack. There are two versions of story how Perseus kills Cetus: the first said that Perseus slays the monster with his sword. The second

version said that he used Medusa's head to turn Cetus into stone and saved the princess.

The final ending is the same though – Andromeda is set free, marries Perseus and led a long, happy life together with six children. It is said that their first-born son, Perses, have given rise to those people who became known as Persian, and Gorgophonte, father of Tyndareus, King of Sparta.

When Perseus and Andromeda died, they were given honoured places among the stars by the goddess Athene. Today, we can see Andromeda in the sky being pursued by Cetus to the south with Perseus right besides guarding her.

For the king Cepheus and his queen Cassiopeia, they were also given honoured places among the star to the north of Andromeda. 🌟

<u>Abbreviation</u>	<u>Genitive</u>	<u>Area</u>	<u>Order of Size</u>	<u>Brightest Star</u>	<u>Magnitude</u>
And	Andromedae	722 degree ²	19	Alpheratz (α Andromedae)	2.05

Notable Objects:

M31 (NGC224) – Andromeda Galaxy

M31 is the closest and biggest spiral galaxy to us. For a long time, before the true nature of galaxy was known, M31 was called the Great Andromeda Nebula and was thought to be located within our Milky Way galaxy. It was only until Edwin Hubble in the 1920s found the first Cepheid variable in the galaxy that established the intergalactic distance and the true nature of M31 as a galaxy.

- M31 is situated 1 degree west and slight north of ν Andromedae (magnitude 4.5).
- M31 is easily visible as a faint smudge without any optical aid on a clear dark sky. It is one of the farthest objects visible to the naked eyes.
- A good pair of binoculars will reveal the galaxy elliptical shape and its two satellite galaxies, M32 and M110.
- A small aperture telescope will reveal a bright oval nucleus. Under a clear dark sky, the galaxy's numerous dust lanes are visible. Large aperture telescopes will be able to identify some individual globular clusters in M31.

<u>Type</u>	<u>Magnitude</u>	<u>Size</u>	<u>Distance</u>	<u>Location</u>
Spiral Galaxy	3.4	190.5' × 61.7'	~ 2,300,000 light-years	RA 0h 42.7m Dec +41° 16'

NGC752

NGC752 is a bright but very scattered open cluster. It contains over 60 stars of magnitude 9 and fainter. It is approximately 1.6 billion years, unusually old for an open cluster.

- NGC752 can be found near the left leg of Andromeda. It is about 4.5 degrees southwest of Almach.
- The stars of NGC752 are scattered over a large area, thus it is best appreciated with binoculars.

<u>Type</u>	<u>Magnitude</u>	<u>Size</u>	<u>Distance</u>	<u>Location</u>
Open Cluster	5.7	60'	~ 1,300 light-years	RA 01h 57.8m Dec +37° 41'