The Autumn Night Sky

By Naomi Francey, Education Support Officer

I just happened to be coming home late last night and gazed up at the night sky as I got out of my car. I couldn't help but notice the beautiful display that was above me, there was not a cloud in sight, a perfect night for stargazing. Autumn is a great season for observing the heavens because you are more likely to get a clear night and it's not as cold as winter so you don't freeze! In the spring night skies we use the Plough to find constellations like Leo the lion and Boötes, in the summer we use the Summer Triangle to find our way about the sky and in the autumn we use the Great Square. The Great Square can be found facing a south westerly direction and is part of the constellation Pegasus. Pegasus is the legendary flying horse and the Great Square is part of its body. The Great Square is made up of four bright stars which are quite bright compared to other Autumn stars. In Fig 1. the Great Square is the red outline which is used to find other constellations. The more stars you can see inside the Great Square the less light pollution at your location. So if you only see a few stars inside the square you would benefit greatly from stargazing in a more remote location.

The first constellation that we will look at is Andromeda which is attached to the tip of the square (Fig. 1). Andromeda looks like an upside down capital "A" in the night sky with twigs for arms and where her head meets the corner of the great square is a star called Alpheratz. Andromeda was the daughter of Cepheus the King and Cassiopeia the Queen, and was meant to be sacrificed to Cetus the sea monster. Cetus was terrorising their country and the king and queen hoped that feeding him a princess would make him take his anti-social behaviour elsewhere. Thirty years ago the Andromeda Galaxy could be seen using the naked eye, but in the 21st Century with increasing urbanisation viewing this galaxy becomes quite difficult, even in the countryside. The Andromeda Galaxy is the largest in our local group of about thirty galaxies, and is the closest spiral galaxy to the Milky Way at about 2.5 million light years distance. The very appropriately named constellation of Triangulum (see Fig.1) can also be found just to the right of Andromeda but it is very faint.

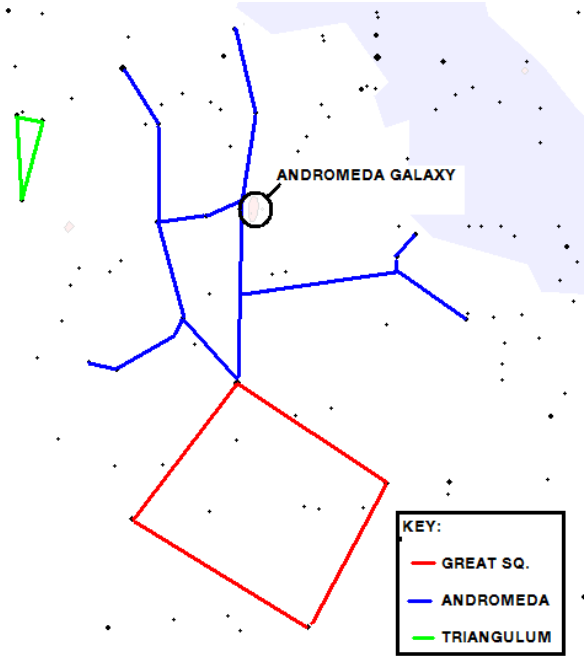

Image Credit: Naomi Francey, Education Support Officer

Figure 1: The Great Square and Andromeda Triangulum is also shown.

In the south east, you find the constellation of Perseus just below the constellation of Cassiopeia (Fig. 2). Did you watch the meteor shower there in August? Perseus was a hero and the son of Zeus who beheaded the evil gorgon Medusa. He carefully placed her head in a bag, because if anyone looked at the face of Medusa they were automatically turned to stone. Perseus flew away on Pegasus and,

as he was flying home, he noticed Andromeda chained to a rock, so he rescued her just before the sea monster devoured her. He used the head of Medusa to turn the sea monster to stone and it was the usual happily ever after fairytale ending.
There is something special within the constellation of Perseus that is worth looking for. It is a star called Algol which, every 68 hours, dims for several hours and brightens again. This can be witnessed with the naked eye so no telescope is required. Due to this behaviour Algol is sometimes referred to as the winking star. Why does it do this? Algol is part of what astronomers call an eclipsing binary system. This means another dimmer star is orbiting Algol, in such a way that when it passes in front of Algol, Algol's light dims. The Algol system was the first of these systems to be discovered.

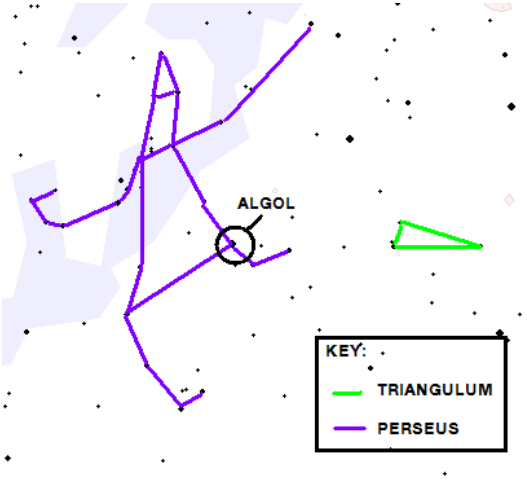

Image credit: Naomi Francey, Education Support Officer

Figure 2 Perseus Many constellations do not resemble the creature or object they are supposed to. Thie constellation Perseus is an exception, resembling a human figure.

Any earlier risers out there should look east just before sunrise. You will see a glorious bright star blazing away. This is no star, it is our neighbouring planet, Venus!

These are just a few things to look out for in the autumn sky and no previous astronomy knowledge is required. So get your coats and hats on and go outdoors and explore the wonders of the autumn night sky!