

An Introduction to the Night Sky

I'm sure you've all looked up at the night sky before and thought for a moment about the stars you've seen. You may even be lucky enough to have had a constellation or two pointed out to you, constellations such as Orion or the Big Dipper which you may have been told leads nicely into the Pole Star. A constellation is very simply a pattern of stars in the sky that have no relevance to each other except that when viewed from Earth they form a distinctive pattern.

For as long as people have looked up into the night sky, they have wanted to put a sense of order to it. By the ancients, this was done by associating the stars with mythical figures, something that we still do today: as scientists by keeping those primeval names or by astrologers by associating more myth with them.

The best place to begin is to look up and find three stars in a near horizontal row (pointing slightly up to the right). Each star is about (what appears to be) a millimetre away from the other. This is a very distinctive star pattern called Orion's belt. It is the belt of a Greek hunter called Orion. In some parts of the world, it is known as the Three Kings, of biblical fame.



Looking at Orion's belt, you should see two stars above and two just as far below. These are clearly interpreted as Orion's head/shoulders and feet. If you are lucky, you will be able to see Orion's sword just under his belt. If you are very lucky, you may see his bow and arrow to the right of the constellation. However, we're going over and above what we set out to do, identify stars in the night sky.

Of course, all the stars in this constellation have common and scientific names. I won't bore you with them but will point out some interesting ones. The top left corner of the rectangle that is Orion's body (some may say his shoulder but I won't be as generous as some of the artists who have depicted Orion superimposed on his constellation) is a star called Betelgeuse. It is an absolutely huge red supergiant. Its radius is larger than the distance between our sun and Mars. Orion's sword incidentally is actually M42, the Orion nebula. (A nebula is a cloud of dust and gas.)

That's a good start and a good introduction to just one constellation. Once you've found Orion, however, you will be able to use it to guide you to other notable stars in the night sky.

Follow the three stars of Orion down to the left and you will see the brightest star in our skies, Sirius. It is part of the constellation Canis Major, the big dog. Going horizontally to the left of Orion's belt you'll see the brightest star in Canis Minor, the small dog. The star is called Procyon and is also fairly bright. No doubt you'll have guessed, the dogs belong to Orion.

It would take forever to go through the eighty-eight constellations of the night sky in this interesting, yet cumbersome, form. Much more exciting for you would be to have a look around the internet for a star map of the view from your part of the world, take it outside and see what you can see.

I'd suggest a piece of software called StarCalc available for free from <http://www.m31.spb.ru/StarCalc/main.htm>.

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