

## Looking South

The aim of this exercise is to help you learn the names and positions of a few of the first magnitude stars visible at this time of year.

First magnitude stars are the brightest and so the first to be seen after dusk. Thus if you begin your study of the sky shortly after sunset, during the next hour you will be able to locate the objects mentioned in this article.

You need a location free from light and atmospheric pollution and with an unobstructed view to the south.

The first thing is to remember that we live on the surface of a sphere which means that we can't see all of the stars at the same time. In fact some we can never see from the northern hemisphere, one needs to move south of the equator.

The second thing is that we live very near to a star. Our star is the Sun and from where we live it seems to be very bright, so bright that when it is in the sky it is impossible to see the stars even though they are there – the Sun's light swamps them. If it is dusk the Sun has just gone down and so as the minutes tick by the sky will gradually get darker and stars will become visible.

The second brightest thing in the sky is the Moon, shining in reflected sunlight. Again its brightness makes it difficult to see some of the stars but if it is less than full it won't cause too many problems.

The Moon orbits the Earth at a distance of nearly 400,000 km meaning that light (and radio messages) from the moon take about 1.25 sec to reach us.

Before we go any further, if the Moon is visible in the sky (it may not be later in the month) you should make a mental map of where the moon is right now.

Of the planets visible to the naked eye: Mercury, Venus, Mars, Jupiter and Saturn, only Mars and Saturn are visible in the sky at present and they will be amongst the first objects you will see.

Look South. Notice where the Sun has set (just North of West) and trace an arc from that bit of the horizon, up about 55 degrees when looking due south and then back down (passing the Moon if it is in the sky) to the eastern horizon.

The line you have traced is called the ECLIPTIC and is the path followed by the Sun, Moon and all the planets. They are always on or very close to this line, as are the constellations of the zodiac.

On the Ecliptic are several objects which you can recognise once they become visible.

Starting in the West and following the ecliptic you should come across a bright red star. This is Aldebaran a red giant star in the constellation Taurus.

Further round but below the ecliptic is another bright red star Betelgeuse, the top star in the constellation Orion.

Carry on following that imaginary line, the ecliptic and now looking SW and up at an angle of about 50° - I am assuming the time is about 8.30pm - you will find the red planet, Mars and just above it two bright stars, Castor and Pollux in the constellation Gemini.

Moving on, next we find another pairing Saturn and the bright red star Regulus in the constellation of Leo.

And lastly, low on the eastern horizon is Spica in the constellation Virgo.

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Finally, following round the ecliptic, you cannot have failed to notice three other bright stars. Low down in the south west is the brightest star in the sky, the brilliant Sirius, the Dog Star in the constellation Canis Major.

Higher up but in the same direction is Procyon in the constellation Canis Minor.

Finally, about 25° above the Eastern Horizon is the bright yellow star, Arcturus.

These are the eight objects you should learn to recognise in the southern sky in spring. You will then be able to use these as signposts to guide you around the sky.

Learn to find them as darkness falls as they will, being first magnitude objects, stand out clearly as most other stars will not be visible early in the evenings. Once it gets truly dark, with so many stars visible things can be more confusing.

You remember the mental map you made of where the moon was? Go back and look at the Moon; you should notice it is in a slightly different position.

What has happened is that because the Earth is spinning on its axis, our viewpoint has changed and we are actually looking in a new direction but, as we think we have stayed still, it seems to us that the sky has moved above us carrying the Moon and stars with it.

Good luck. I hope that you can find the objects mentioned. Look out for the guide to the view North which will appear next.

Also, do come to a CADSAS event in the future. Event details are posted on the CADSAS website [www.cadsas.com](http://www.cadsas.com)