

Stargazing Guide: November 2017

What to look out for...

Constellations (star pictures) and interesting stars:

1 The Plough always the easiest place to start! Find it to the north-west. The last two stars point to the North Star, **Polaris**. Polaris is always seen to the North as it is above the North Pole.



4 Pegasus the big square of stars marks the winged horse's body. This constellation is a useful reference when looking for other things, like....

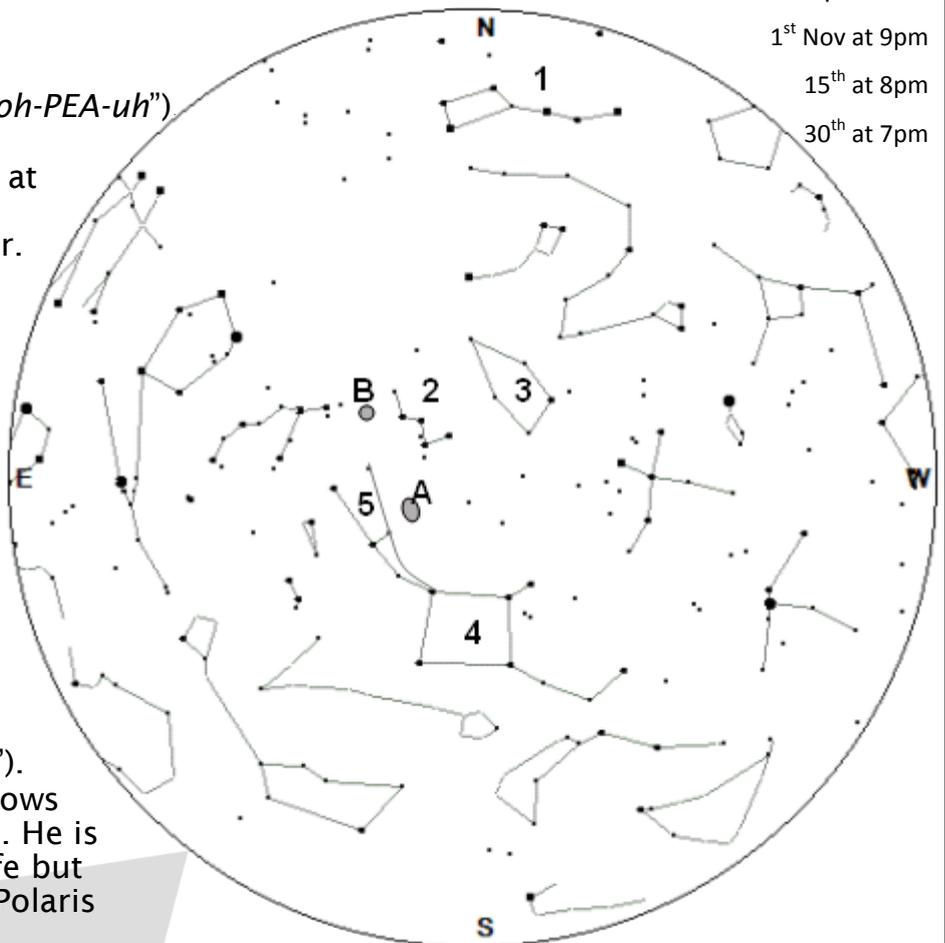
5 Andromeda (say "An-DRUM-eh-duh"). This is the beautiful daughter of Queen Cassiopeia and King Cepheus. Her body is shown as two curves of stars close by each other, stretching away from one of the corners of the Square of Pegasus.

See next page for **A & B**... Map shows:

2 Cassiopeia (say "kass-ee-oh-PEA-uh") Her "W" of stars is an easy shape to find in the sky at any time of year, but is seen particularly high in the winter.



3 Cepheus (say "SEA-fee-us"). This house-shape of stars shows Queen Cassiopeia's husband. He is less easily found than his wife but you can use Cassiopeia and Polaris to help you spot him.



1st Nov at 9pm

15th at 8pm

30th at 7pm

How to use this chart:

Imagine the chart flat & upside-down above your head. The circle around the outside shows the horizon all around you. Turn the chart to have North (N), South (S), East or West at the front depending on which direction you are looking.

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Other things to see...

The Moon

Best viewed when lit from the side, as the craters throw long shadows.



Planets

Saturn and **Mercury** are following the Sun in the sky. Both set shortly after the Sun. Saturn is slowly setting earlier as the month progresses, but Mercury sets at approximately the same time each evening (6.30pm) throughout November.

Mars is visible each morning throughout the month before the dawn. Look for a bright, salmon-pink dot towards the East just before the Sun rises.

Jupiter and **Venus** rise in the early hours, Jupiter is visible at approximately dawn at the start of the month, at rising earlier before as the month goes on, whereas Venus rises later as the month progresses. Both will be near Mars but closer to the horizon.

The Andromeda Galaxy

A galaxy is an enormous group of stars in space. Last month's guide explained how to see our own galaxy. The next closest large galaxy is the Andromeda Galaxy, shown as **A** on the map.

You'll need dark skies to see this as it's very faint. Using the corner of your eye, look for a very dim smudge of light about the size of the full Moon. This is just the bright core; the whole thing is six times this size. This galaxy is the most distant thing you can see by eye, being over 20,800,000,000,000,000 km away. That's 145,000,000,000 times further than the Sun!

The Perseus Double Cluster

Shown as **B** on the starmap, two lovely open clusters of stars that appear very close together from our viewpoint. On a very dark night they can be seen as one tiny fuzzy blob by eye.

Using Binoculars

If you have binoculars, these can help you find the Andromeda Galaxy and will show the Perseus Double Cluster as two separate gorgeous groups of stars..

Tip of the Month

Winter is great for stargazing but do remember to wrap up warm else you won't want to stay outside for long! If you can find somewhere out of the wind, this will also help.

Download this star guide and those for other months from:
<http://www.winchestersciencecentre.org/starguides>

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Stargazing Guide: General Information



What might I see?

Stars! In a city you might see only a few stars because the city lights light the sky so much. But in dark countryside it's possible to pick out thousands of stars against a truly black sky.

You might also see the Moon or planets; these are lit by the Sun and reflect its light to us. Planets look just like stars and can be very bright. Also look for 'shooting stars' (trails left by tiny rocks falling from space) or slower-moving satellites.

If you're lucky enough to be somewhere very dark you could also try to spot nebulae (huge clouds of gas and dust) or even other galaxies. Both look like very faint smudges of light.

Why do I see different stars at different times?

As the Earth spins every 24 hours, carrying us with it, our view of space spins too. We see new objects come into view to the east, whilst others go out of view to the west. The best example of this is the rising and setting of our closest star, the Sun.

Because the Sun is relatively close to us (millions of times closer than the night-time stars), it looks incredibly bright. This means we can't see much else while it's in the sky and so we are unable to see other stars in that direction.

However, as the Earth carries us on our yearly orbit around the Sun, we get to see the Sun from different angles. This means different stars will be 'hidden' behind it. So you'll be able to see different stars depending on the time of the year.

Where will the Moon and planets be?

The Moon and planets are always moving (the Moon orbits around the Earth, the planets orbit the Sun). This means we see them against a different background of stars at different times, although they move across the stars too slowly for us to watch this motion by eye.

The Moon orbits the Earth every 27(ish) days, keeping the same side facing towards us. As it travels, it's lit from different angles by the Sun; this gives a clue as to when you'll see it:

If the near side is fully lit (Full Moon) it'll be up all night. If it's lit from the left you see it more in the morning, and if it's lit from the right you see it more in the afternoon. When only the far side is lit (New Moon) it'll be up all day.

Planets are more complicated as our view of them depends not only on where *they* are but also where *we* are as we orbit the Sun! You'll need a current sky guide to know where to look.

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