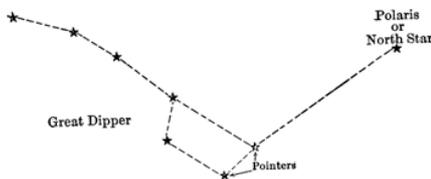


# Stargazing Guide: November 2019

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....

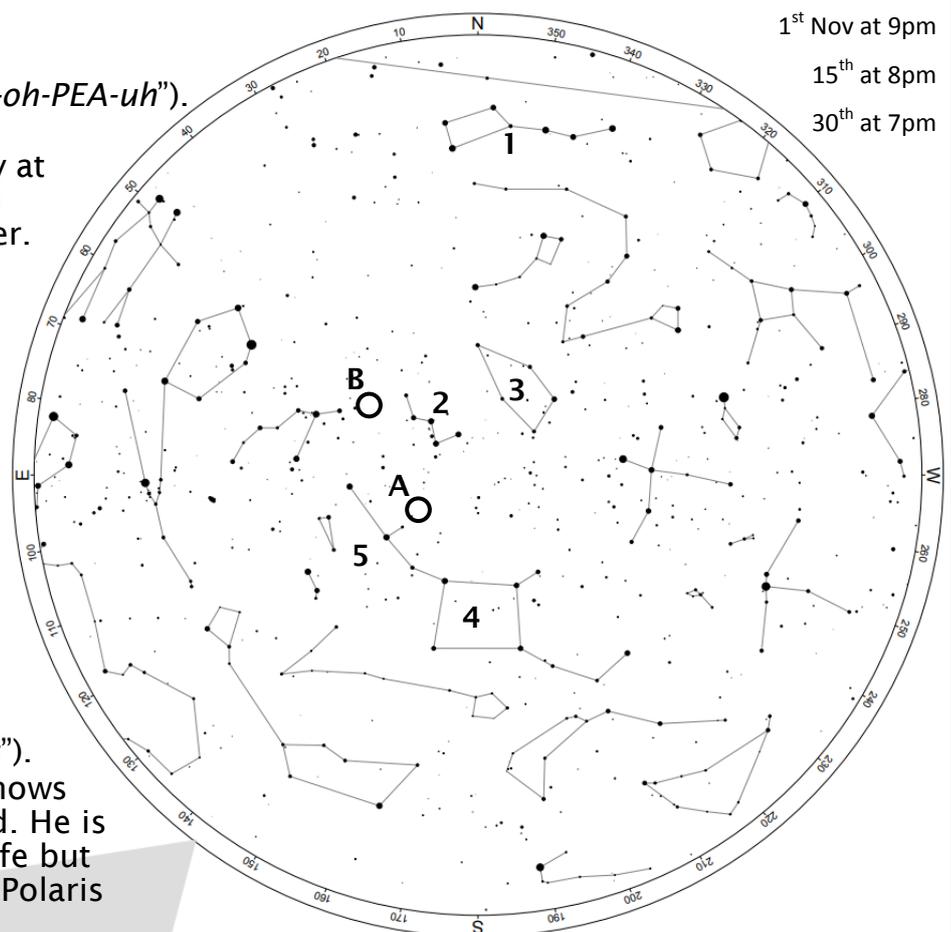
**5 Andromeda** (say "An-DRUM-eh-duh"). This is the beautiful daughter of Queen Cassiopeia and King Cepheus. Her body is shown as two curves of stars close by each other, stretching away from one of the corners of the Square of Pegasus.

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.



1<sup>st</sup> Nov at 9pm

15<sup>th</sup> at 8pm

30<sup>th</sup> 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.

# Stargazing Guide: November 2019

## The Moon

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



## Planets

**Venus, Jupiter** and **Saturn** are all visible close to the horizon as the sun is setting through out the month, though will set within a few hour of the sun setting in the early evening, Saturn and Jupiter stay in the same relative position to each other with Saturn trailing behind. Venus starts the month ahead of both Saturn and Jupiter, but throughout the month will move closer towards Jupiter, eventually passing it and ending the month in the middle between the two gas giants in the sky.

**Mars** rises in the early hours rising soon after 5am each day of the month, and will be visible before the sun rises throughout the month.

**Mercury** starts the month setting shortly after the same in a similar position as Venus but quickly moves closer to the sun making it difficult to spot, by the middle of the month it will appear ahead of the sun and visible just before sunrise, and appearing closer to Mars each day as we approach the end of the month

## 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 20,800,000,000,000,000,000 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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