# FINDING NORTH BY THE STARS

The POLE STAR (POLARIS) lies directly above the Earth's geographic North Pole and always sits in the same position in the sky which is due North. All the other stars (and planets, sun & moon) appear to rotate around it, making a full rotation each day.

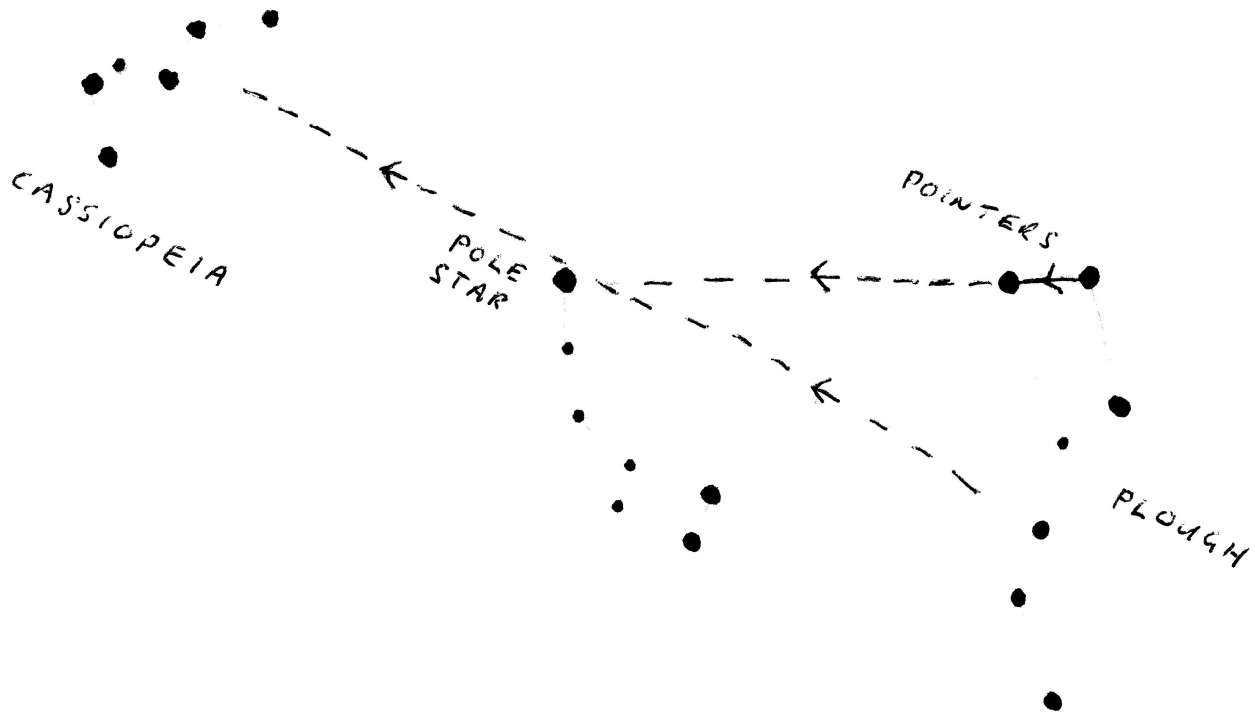
So if you can find the Pole Star, its direction will show you where North is.

The Plough (sometimes known as the Big Dipper and looks like a saucepan) which is part of the constellation Ursa Major or the Great Bear is easy to find and as it is visible all the year can be used at any time to locate Polaris.

The two stars on the end of the Plough are known as the pointers and a line from these, about 5x the distance between them will lead to Polaris.

As a check, a line from the bears tail (or saucepan handle) through Polaris and carried on for the same distance will arrive at another easy to recognize constellation called Cassiopeia, which looks like a letter M or W depending on where it is in the sky.

If the sky is dark enough you may also be able to see that Polaris is part of the Little Bear, looking like the Plough, in which it is equivalent to the end star in the tail. The rest of the tail is not easy to see as the stars are dim, but you should be able to make out the equivalents of the two pointers.




As well as always being in the same direction, North, the Pole Star is always the same height above the horizon in any particular place.

Sailors used to use the Pole Star to aid their navigation as its height gives the LATITUDE of their location. At the equator it is on the horizon, zero degrees; rising to directly overhead, 90 degrees at the North Pole (if they could get there)

In St Albans it is about 52 degrees above the horizon. This is the latitude of St Albans.

## Some other thing to see in the night sky at the moment.

As well as rotating each day round Polaris, the stars also appear to make a separate rotation of one complete circuit over the course of a year.

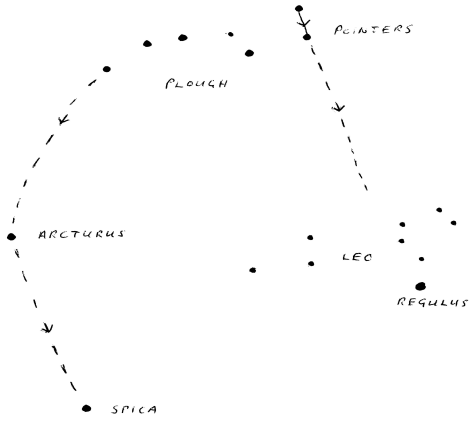
Those of you who were there when we have looked at the stars in the past at autumn camps may remember that the saucepan was the right way up and the handle pointed down to the ground. Cassiopeia was high in the sky.

Now at a different time of year the Plough is high in the sky and Cassiopeia is lower down. So stars that were not visible then may be now and vice versa.

Follow the curve of the tail away from the plough and some distance away is one of the brightest stars in the sky, called ARCTURUS. This is a RED GIANT and you should be able to see a definite orange colour to it.

Continue on the same line and you may see before it sets another bright white star. This is called SPICA in the constellation Virgo. It is about 12,000 times brighter than the sun.

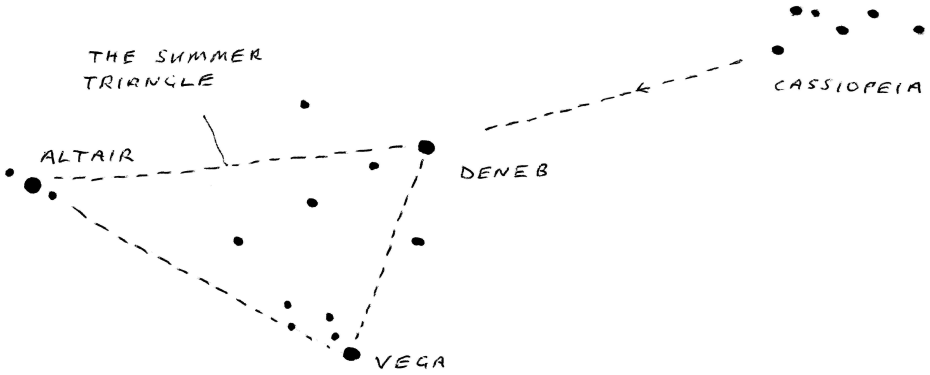
Using the pointers on the Plough away from the Pole Star, again you may catch before it sets the bright star REGULUS and its constellation LEO.




Using Cassiopeia as a pointer as shown below, you should be able to locate three bright stars. First find DENEB in the constellation Cygnus (the Swan which does look vaguely like a swan). This is one of the brightest stars known, a blue-white SUPERGIANT at least 50,000 times brighter than the sun.

To the left (and almost overhead) is VEGA in the constellation LYRA, a similar star to the sun.

Further on and lower down is the star ALTAIR also similar to the sun, in the constellation **AQUILA** which with the other two makes up the SUMMER TRIANGLE




Unfortunately now is not a good time to view the planets unless you get up in the early hours of the morning.