



LOCATING TRUE NORTH

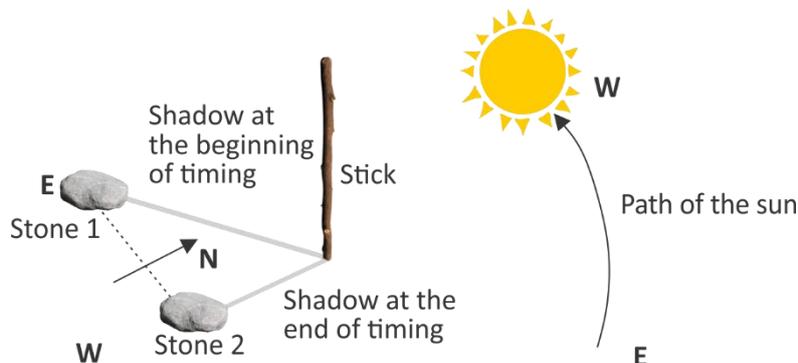
When positioning solar panels, the instructions always say, face the panels **true north** as opposed to magnetic north. The question is if your compass can only point to magnetic north how do you know where **true north** is? What's more, you may be out in the back of beyond and not have a compass, so once again, how does one locate **true north**?

There are a number of ways of achieving this but here we will look at just two ways, one using nothing more than a stick and two stones, and the other, using your analogue wrist watch.

1. **Using a stick and two stones.** Cut a straight stick, about 0,61m long. (2 feet) Find an open space of flat clear ground in direct sunshine and insert the stick vertically into the ground. If the ground is very hard you may need to make it of pilot hole with a fencing standard or knife blade. Once the stick is in place and is supported firmly upright in a vertical position, note where the end of the shadow it casts is and mark this point with a reasonable size stone.

Wait about 20 to 30 minutes, and then again mark the point where the end of the shadow is now cast by the stick with your second stone. (Note: The sun would have been moving from East to West so the shadow would have moved from West to East.)

Now, put your left foot on the point where the first stone was placed (East) and your right foot on the place the second stone was placed (West) - you will now be looking true north. Alternatively, draw a straight line on the ground between the two stones. This will give you an East-West axis, and halfway along this East-West axis line draw a line at right angle to this axis line. This line will be pointing **True North**.



Finding true north without a compass

2. **Using your analogue wrist watch.** (Southern hemisphere) Hold the watch horizontal and point the 12 o'clock mark in the direction of the sun. The North-South line is halfway between the hour hand (the short pointer) and the 12 o'clock mark. (Note- using a watch to determine direction within the tropics is more complicated because there are two solar maxima.)

And what if it's overcast? If you really need to know where the sun is hold a pencil or stick over lightly coloured ground, or over a sheet of white paper, and the light will cast a dull shadow indicating where the sun is.