Angular Size, Angular Momentum, Degrees Altitude, Bearing

In investigating UFO reports, it is often of enormous help if the sighting can be reported in terms of **angular size**, **angular momentum**, **degrees altitude**, and **bearing** (**Figure 1**). While this sounds complicated, it is actually quite simple.

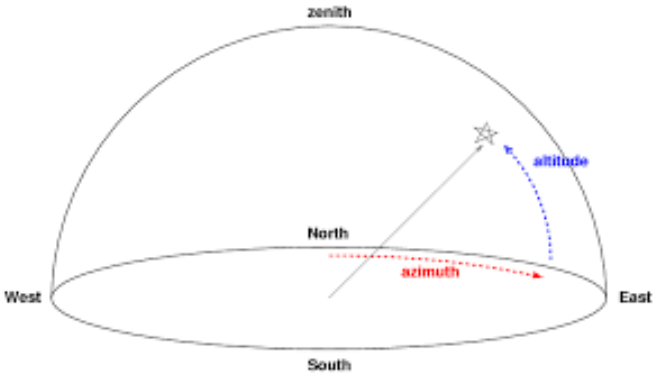

Figure 1

Degrees altitude

Degrees altitude, Figure 2, requires splitting the arc from the horizon to the zenith (directly overhead) into 90 degrees - with 0 being level with the horizon, 45 degrees halfway up the sky, and 90 degrees directly overhead.

If a sighting involved an object passing overhead and continuing towards the opposite horizon, the arc can be extended to 180 degrees, following on from 90 overhead, through to 135 degrees halfway down to the opposite horizon, and 180 degrees when level with that horizon.

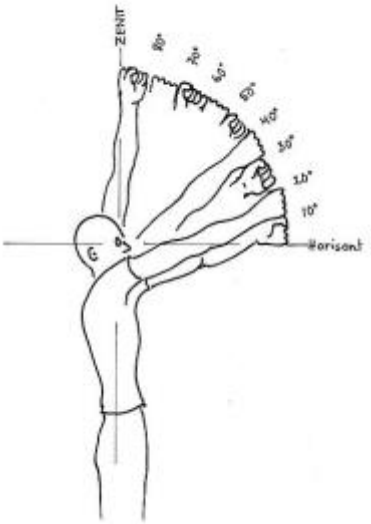

Figure 2

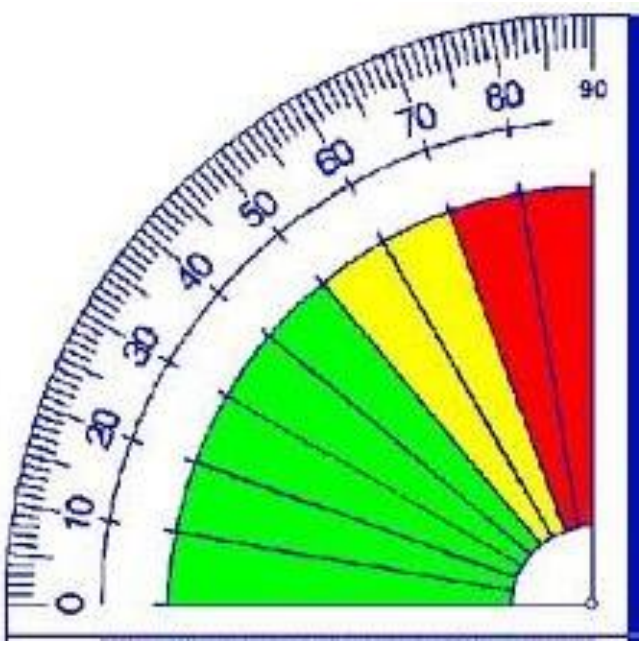

Figure 4

In order to measure this accurately, you simply need to hold a straight edged object such as a ruler close to your eye and sight along it to where the object was when sighted.

Then by holding an arc with the full 0-90 degrees marked upon it **(as included – Figure 4)** against the edge of the ruler, one can simply read off the appropriate angle.

Bearing

Bearing, or azimuth, requires considering a 360 degree circle that begins at 0 directly to the North, through 90 directly to the East, 180 to the South, and 270 to the West, as in **Figure 3**.

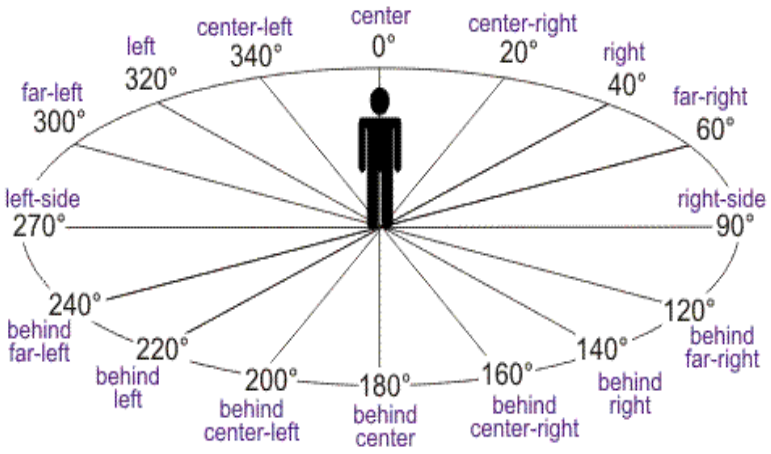

Figure 3

Again, by using a straight object to point directly to the position where an object was sighted, and placing this on a sheet marked with the relevant arc (**Figure 5**), the correct bearing is easily established.

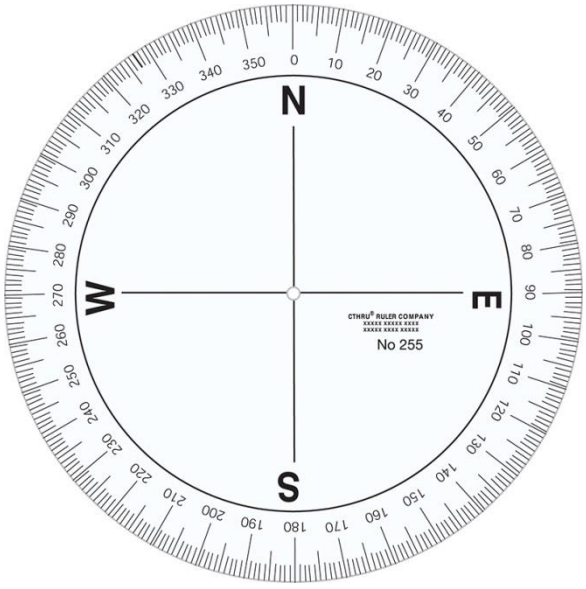

Figure 5

Alternatively, using a compass, one can state bearing in terms of degrees either side of the closest compass point. For example, a position precisely between halfway between South and East could be stated as either 45 degrees East of South, or 45 degrees South of East.

Angular Size

Angular size simply refers to the size of an object compared to the 'degrees of arc' which were used in measuring altitude or bearing. It is often easiest to use the size of the full moon, which is 0.5 degrees across, as a basic unit against which to estimate the angular size of an object. For much larger object, you can estimate the different position of the opposite edges or ends using the instructions already provided. So, for an object 10 degrees long horizontally, one end may be found to have been at 45 degrees bearing, and the other at 55 degrees. Or if 10 degrees vertically, the lower end may be at 30 degrees altitude, and the top at 40 degrees altitude. It can also help to use a fist held at arms' length, which is very roughly 10 degrees high (see **Figure 2**)

Angular Momentum

Finally, in order to establish '**angular momentum**' you need only state how long it took an object (or a specific part of an object if it was large in angular size) to move from one point to another, stated in degrees bearing, degrees altitude, or both if its path was diagonal across the sky so that its position changed in both the horizontal and vertical planes.

Ideally, if an object was observed changing course, its position in altitude and bearing should be provided for each point, as well as the time elapsed as it moved between each. So an object taking a straight course would be described by giving the position when it first appeared, the position when it was last seen, and the time that passed in between. An object that made a right angle turn, however, would require that the position be given of where it first appeared, then the position where it turned, with how much time had passed between, followed by its position when lost to sight, and again the time between this and the previous position.

If an object took a highly erratic course, it is sufficient to describe a small, representative portion of the sighting. Likewise, if the object moved at different speeds, it would be sufficient to describe the fastest movements and the average speed.