directions from the north pole point southwards, and all directions from the south pole point northwards. If a person stands on the north pole with his arms outstretched and looks in the direction of 0°, his back is turned to 180°, his right hand points to 90° W and his left hand to 90°E. All these directions are verifiable simultaneously on the antipodes map.

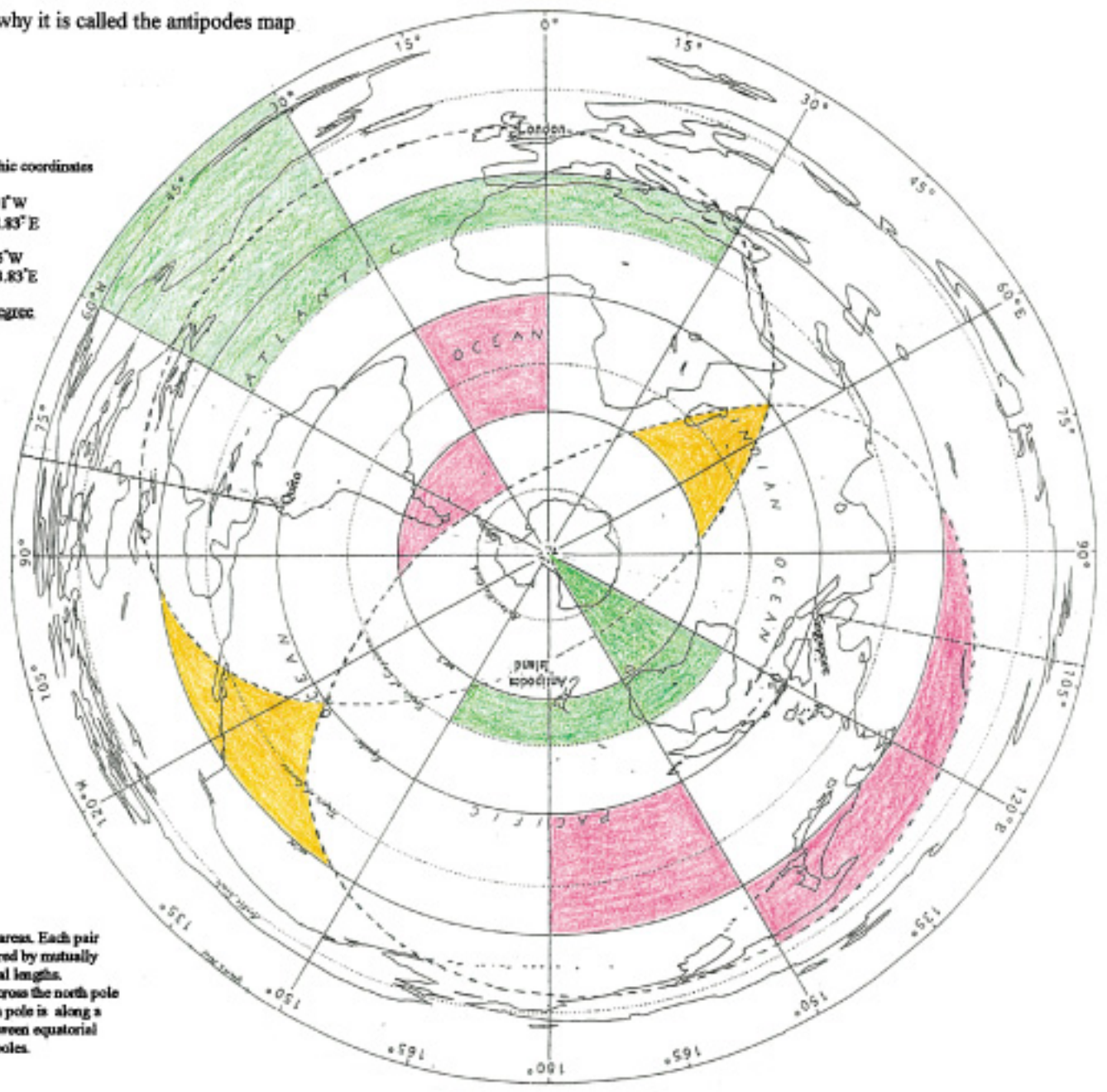
Of great circles, arcs, arc-angles, distances, areas and earth-times (E.T.)
There is a close relationship between the angle at the centre of a sphere and the arc it supports at its surface. The distance of that arc can be calculated from the angle and the circumference of the sphere. Such distances are termed arc-angle distances. This can be applied to the antipodes map, but within the limits of the earth's actual oblate spheroid shape. The earth's rotation round its own axis and its revolution round the sun causes our earth-times for sunrise, midday, sunset and midnight and all the seasons. The E.R.S.C. is based on these geographic facts. Through its rotation there is a direct relationship between distance and E.T. which can be calculated mathematically. Thus an angle of 180° at the earth's centre could support a semi-circular arc at its surface that could connect two mutual antipodes. The distance between the antipodes could be half the earth's circumference, and the E.T. differential between them could be 12 hours. Only the poles are exempted from this generalisation during the equinoxes when they have the same times simultaneously.
The equator is the only great circle that appears as a perfect circle in the antipodes map. All the other great circles appear oval or as lop-sided parabolas, except the polar circumferences which appear as straight lines composed of meridians and their anti-meridians. Each of the great circles divide the earth into two equal hemispheres.

Sphere-bound constancy in shape and size
Just like the mapped out countries on a globe have definite shapes and sizes which vary only in ratio to the size of the globe, so too the countries in the antipodes map have definite shapes and sizes, which vary only in ratio to the size of the antipodes map. This is because the map is a faithful representation of the globe, and as such it is governed by the unalterable and consistent dimensions of the sphere. This constancy in distance and area is easily visualised in the globe for any part of it because it is a sphere. However, since the antipodes map is a flat representation of a spherical globe, distances and areas have to be visualised from a central zenithal point. There is equidistance only along meridians. Any pair of antipodal arcs, latitudes or areas within the map could appear with one within the pair seemingly diminished in the southern hemisphere and its antipodal counterpart expanded in the northern hemisphere, although the components of each pair are essentially equal in all respects. This is a comprehensive and pervading feature of the antipodes map and it has to be conceptualised mentally, just like the poles are equal to each other.

A diagramatical explanation of why it is called the antipodes map

| Mutual antipodes | *decimalised geographic coordinates |
|---|---|
| London | 51.53°N, 0.01°W |
| Antipodes Island | 49.7°S, 178.83°E |
| Quito | 0.23°S, 78.5°W |
| Singapore | 1.36°N, 103.83°E |

*minutes to decimalised degree
divide minutes by 60




Reference
- - - - - - - - great circles
Similarly shaded areas are mutual antipodal areas. Each pair of such areas are equal in area and are bordered by mutually antipodal arcs that have correspondingly equal lengths.
---------- distance between antipodes across the north pole
Distance between antipodes across the south pole is along a meridian and its anti-meridian. Distance between equatorial antipodes is along the equator or across the poles.