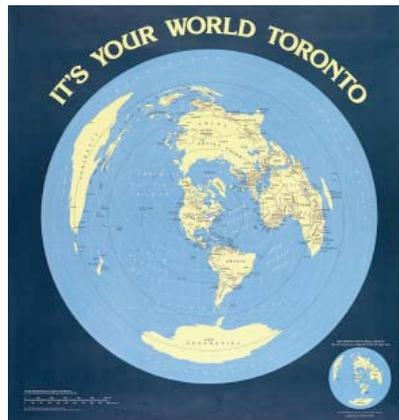


Indispensable World Maps for Everyone

By Len Guelke

Everybody knows the world is like a round ball with no beginning or end, a continuous surface without edges or sharp corners. One might think the best two-dimensional maps of the world would try to replicate these characteristics of the globe as closely as possible. Yet most of us (at least in the map trade industry) recognize that a round surface cannot be flattened without distortions of some kind. It has always surprised me that conventional world maps are often rectangular in shape (or nearly so), with sharp corners and arbitrary edges giving the map user an impression that travel ends at the borders of the map. These distortions of locational and distance relationships (as they are actually experienced on the real, round earth) are evident on most conventional world maps currently in circulation. The general map using public may be occasionally aware that the world is not well represented by such rectilinear maps, but has regrettably been prepared to accept their limitations. This is probably because the typical map-user knows of no better alternatives.

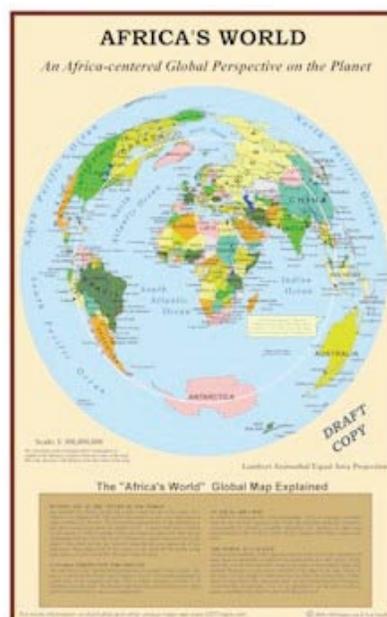
But an alternative is available that is capable of representing the round, continuous surface of the spherical earth in two dimensions, while at the same time preserving locational and distance relationships. It is an unheralded map projection, known to cartographers as the Azimuthal projection. The way Azimuthal maps are constructed makes it necessary for the cartographer to produce individual world maps for different places and regions of the world, but this requirement far from being a drawback actually makes it possible to create maps that are more useful for the inhabitants of each location in the world and mirrors the reality of the human condition. Because people have unique experiences of the world depending on the different locations and countries they occupy on the planet, the ideal world map would be a map that takes this basic fact into account, and makes a particular place or country, wherever it is, the center of the world on that particular map.



My first experiment with creating a city-centered map was this Toronto-centered world map first published in 1979. See image at www.odtmaps.com/detail.asp_Q_product_id_E_Toronto-cen-30x31

The Azimuthal projection makes this type of world map possible.

Any person's home or homeland can be the center of the world, enabling special one-of-a-kind maps to be produced in which the world unfolds around the particular place selected to be at the center of the world. Further, the essential characteristics of the round world are maintained in this process: the world is represented as a continuous surface with locational and distance elements preserved in relation to the center point of the map. The circumference of the map represents the point opposite the center (the antipode) and demarcates the farthest point it is possible to travel from the chosen center point of the map without starting back to one's beginning point.



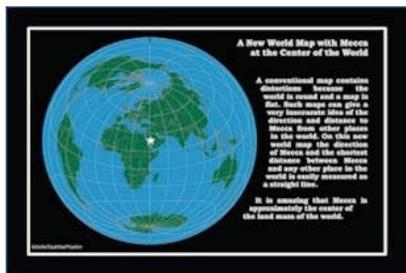
This Azimuthal map is an Africa-centered global perspective on the planet. The map is centered on the Equator and 15 degrees East as a convenient geographical center point of the continent. See image at www.odtmaps.com/detail.asp_Q_product_id_E_Africa.Tabloid.11x17

This bounding circle at the perimeter of our Azimuthal map is no arbitrary line.

It represents the limits of the spherical earth, plotted in two dimensions, for any one who might travel the world from the selected center point. It is admittedly a cognitive stretch to have the antipode point expanded into a circle,

but this maneuver allows the world to be represented as a continuous surface with no gaps, edges or sharp corners. One cannot go beyond this boundary without traveling back to the starting point. In much the same way a North Pole traveler who reaches the South Pole cannot get any further away from the North Pole, because traveling further necessarily brings this hypothetical traveler closer to his or her starting point at the North Pole.

In expanding the antipode from a point to a circle one introduces shape elongation of areas that get progressively more pronounced as one gets closer to the circumference of the map. These shape distortions are reasonably well controlled when the antipode is in a large expanse of ocean (as is frequently the case, since the surface of the world is 2/3 ocean), allow for the creation of fine world maps that are tailor made for the inhabitants of any selected city, country or region of the earth, and permit users to see the world as it is experienced by them in their particular global location.



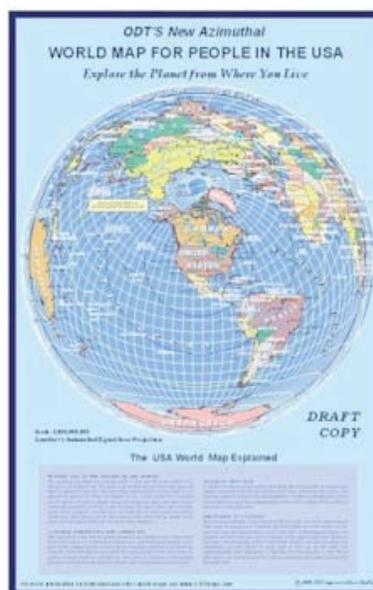
The Canadian Islamic Congress wanted an Azimuthal map with Mecca in the center. Draw a straight line from wherever you are in the world, and you get the exact compass direction to Mecca (so

you know where to pray). This version was done as an equal area Azimuthal map. See image at www.odtmaps.com/detail.asp?Q_product_id_E_Mecca-PC-4x6

The Azimuthal projection comes in two important forms. First, there is the Azimuthal equidistant projection, which provides the most accurate view of any place set to be the center of the map by showing the direct route to all other places on earth as straight lines at a constant radial scale. Second, there is Lambert's Azimuthal equal area projection, which has all the characteristics of the equidistant projection save that the radial scale is not constant, but in compensation it shows every country, however misshapen, at its correct earth area. For the custom maps we produce for clients, we recommend that the city-centered approach (Toronto, Chicago) employ Azimuthal equidistant maps,

and regional maps (Africa, USA) and very small scale mapping such as our Mecca postcard map above employ the equal area approach. As with any other map projection formula, each choice offers certain trade-offs.

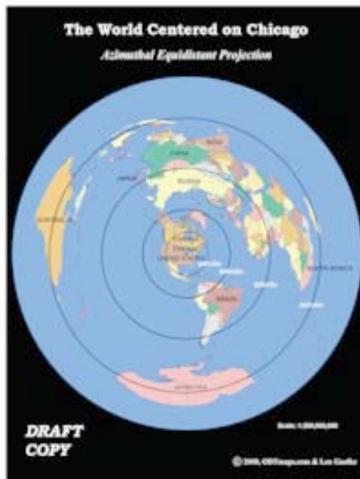
The Azimuthal map is special in its portrayal of the round earth as a two dimensional round figure of the three dimensional spherical world. And it preserves locational and distance relationships more precisely than any other map is capable of doing.



This Denver, CO-centered map is an example of a city-centered Azimuthal equidistant map, which we call our "World Map for People in the USA." It provides information about distance from Denver (a convenient geographical center point of the USA) to every other location in the world.

See image at www.odtmaps.com/detail.asp?Q_product_id_E_Denver.
[Tabloid](http://www.odtmaps.com/detail.asp?Q_product_id_E_Denver)

ODT's new series of Azimuthal maps can help you understand the world as never before by putting your city, region or country at the center of the world and providing you with the most accurate understanding possible of where you are located relative to the rest of the world on a two dimensional map. We've produced these maps for chambers of commerce, businesses, trade groups and even been commissioned by individuals who want to see the world as it unfolds from their home location. If you want more information about a specific project we have a dedicated web page which allows you to see your choices as you decide how you might proceed with an azimuthal map project, and we offer our clients a Custom Map Checklist form that outlines all the formats that are possible.



This Chicago, IL- centered map is an example of a city-centered Azimuthal equidistant map. It provides information about distance from Chicago to every other location in the world. See image at www.odtmaps.com/detail.asp?product_id_E_Chicago-centered8.5x11

In summary, Azimuthal maps are not only accurate for people of a given

location, but functional, and aesthetically pleasing as well. ODT publishes these maps on a short-run POD basis of 50-100 maps at a time for the 8.5x11" and 11x17" formats. ODT does one-off versions for the larger sizes, and prints can be made on synthetic paper, or laminated, and both varieties can be mounted on wooden rails for a nominal additional cost. We all recognize that the future of map publishing is shorter runs, more custom work, and tailoring the product to customers' needs. The Azimuthal maps fit the bill on all counts.

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