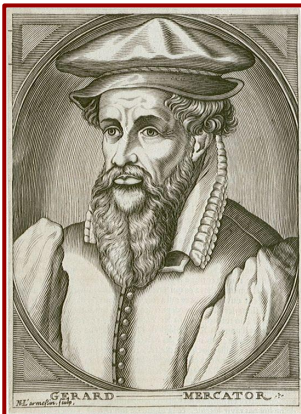


# Mercator Projection **Facts**



A map's depiction of the Earth's surface is a distortion because it is attempting to fit a curved surface onto a flat sheet. This is explained by the Mercator Projection, which is a cylindrical projection of a map in a way that all latitudes have the same length as the equator. This is usually used in modern cartography, marine charts, and several maps used for climatology and meteorology.

## GERARDUS MERCATOR



**Gerardus Mercator**

- ★ He was known originally as Gerard de Cremere.
- ★ Mr. Mercator had his graduate degree in University of Louvain in 1532.
- ★ He produced most of his maps in Louvain and Duisburg.
- ★ He was also appointed as the Court Cosmographer to Duke Wilhelm of Cleve.

# Mercator Projection Facts

- ★ Gerardus was charged with heresy back in 1544 due to the travels made related to his cartographic works and was jailed for 7 months.
- ★ He was the first one to use the term atlas.
- ★ Atlas is a collection of maps.
- ★ He also invented paper-mâché to offer a more efficient way of mass production for globes.
- ★ Mass produced paper engravings shaped like 12 gores were glued to hollow globes with 2 additional circular polar end caps.
- ★ Gores are shapes that narrow when approaching the poles.
- ★ Back in the day, labor-intensive processes were followed in mass-producing globes. This included engraving on solid spheres.
- ★ He made terrestrial and celestial globes placed in wooden stands.

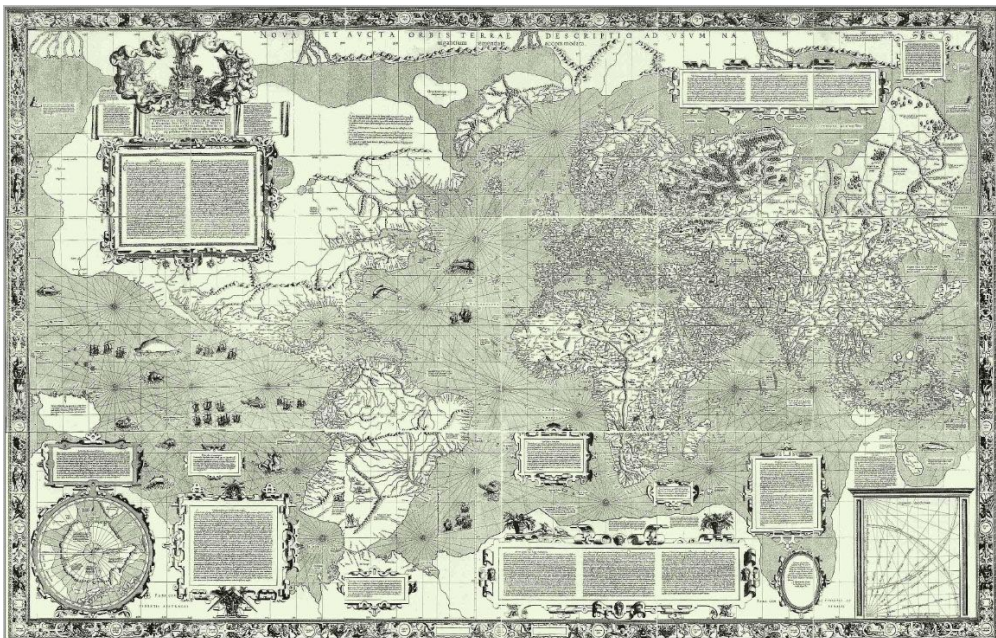


*Celestial globe, 1551*

# Mercator Projection Facts

## HISTORY

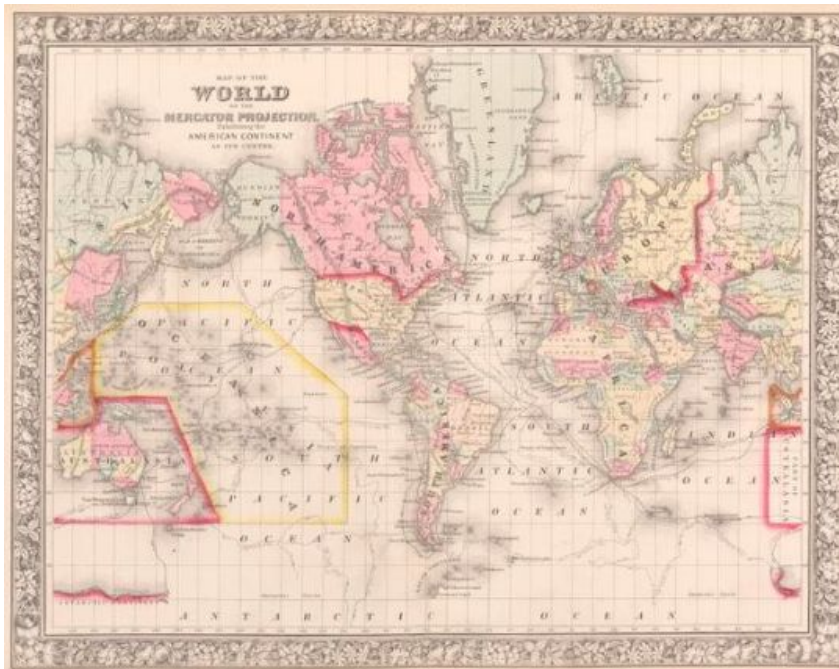
- ★ The Mercator projection was developed by Gerardus Mercator in 1569.
- ★ When Gerardus developed the concept, top cartographers and explorers in Europe used elliptical projections.
- ★ The elliptical projections were derived from Ptolemy's grid of latitude and longitude.
- ★ Even if these elliptical projections were accurate, it was very difficult to use for navigators and explorers because it required recalculation as they cruised.
- ★ The maps created before Mercator's principle were based on Ptolemy's principle and it displayed that every latitude and longitude degree were the same based on size.
- ★ This had an effect on sailor's rhumb lines.
- ★ Rhumb lines are imaginary straight lines on Earth used by navigators that follow a single path of compass bearing.



*Mercator world map, 1569*

# Mercator Projection Facts

- ★ Back when sailing ships was common, since longitudes could not be determined accurately, the distance being travelled was not important and the same went for the direction taken.
- ★ The Mercator projection also explains that as the distance from the equator increases, the extension of the East-West distances also increase.
- ★ The poles display a very distorted image because these two points turn into lines at the top and bottom of the map.



*World map on Mercator projection*

## CONS OF THE MERCATOR PROJECTION

- ★ The Mercator projection doesn't allow the charting of angles.
- ★ The projection delivers a very distorted area.
- ★ One example is that Greenland is shown to have the same size as Africa but in reality, Africa is much bigger than Greenland.
- ★ Africa is shown on the map to have the same size as Europe but in reality, Africa is much larger.

# Mercator Projection **Facts**

- ★ Alaska is the same size as Brazil on the map, but Brazil is much larger in reality.
- ★ Antarctica appears to be the biggest continent on the map, but it is actually the fifth out the seven in terms of area.
- ★ Due to the great land area distortions, the projection is not suited for world maps.
- ★ Most modern atlases do not use the Mercator projection for world maps or for relevant areas far from the equator due to its distortions and instead use other forms of equal-area projection.
- ★ The distortion given by the Mercator projection near the equator is very minimal.