

This shows the Earth is not a perfect sphere.

- The Earth is flattened at both ends (poles) like an orange. This shape is called Geoid (Earth like).
- There are many ways to prove that the Earth is spherical. They are as follows:

- » **Circumnavigation of the Earth:** The first voyage by Sir Magellan around the world proved that the Earth, if not a sphere, for sure was not of a shape which had abrupt edges. It was also discovered that once you start at one point, you are bound to reach that place completing a circular path. Modern day air routes and ocean navigations are based on the assumption that the Earth is a sphere.
- » **The circular horizon:** The distant horizon as seen from a ship or a cliff or a landmass is often seen as circular in shape. In fact, with increase in altitude, the circular horizon broadens. This is a feature only of a spherical body.

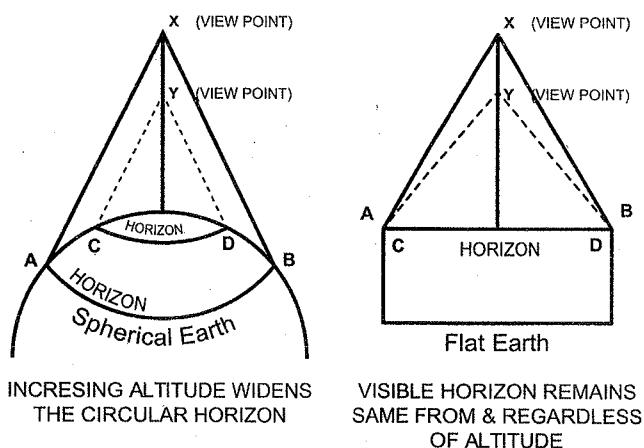


Image 1.1: Evidence of spherical earth

- » **Ship's Visibility:** When a ship appears over a distant horizon, the mast of the ship is seen first followed by the hull. Similarly, when the ship leaves the harbour, the disappearance of the ship over the curved surface is gradual. This would not have happened had the Earth been flat, the entire ship would be visible or obscured from view.

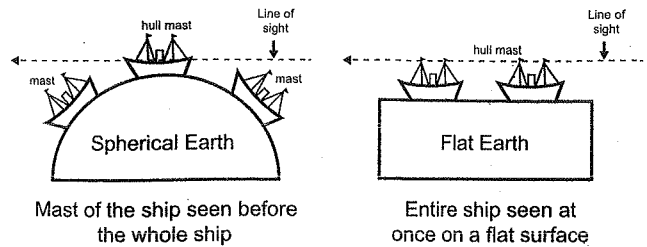


Image 1.2: Evidence of spherical earth

- » **Sunrise and Sunset:** The Sun rises and sets at different times at different places in the world. As the Earth rotates from west direction to east direction, places in the east see Sunrise before the places in the west. Had the Earth been flat, the entire Earth would have had Sunrise and Sunset at the same time.
- » **The Lunar Eclipse:** The shadow cast by the Earth on the Moon is always circular during the lunar eclipse. It takes the shape of an arc of a circle on the Moon.
- » **All planetary bodies are spherical:** When looking through a telescope, all the planetary bodies like the Sun, the Moon and other planets appear circular or spherical in nature, no matter they are viewed from whichever angle. Earth, by analogy, cannot be the only exception.
- » **Aerial photographs:** The pictures that are taken by satellites always show the curved edge of the Earth. This is the most convincing and modern proof of Earth's sphericity.
- » **Driving Poles on Level Ground on a Curved Earth:** Engineers when drive poles of equal length at regular intervals on the ground find that they do not get a perfect horizontal level. The centre pole normally projects slightly above the poles on either side because of the earth's curvature.

## The Earth's Movement

- The Earth moves in Space in two different ways: Rotation and Revolution.