

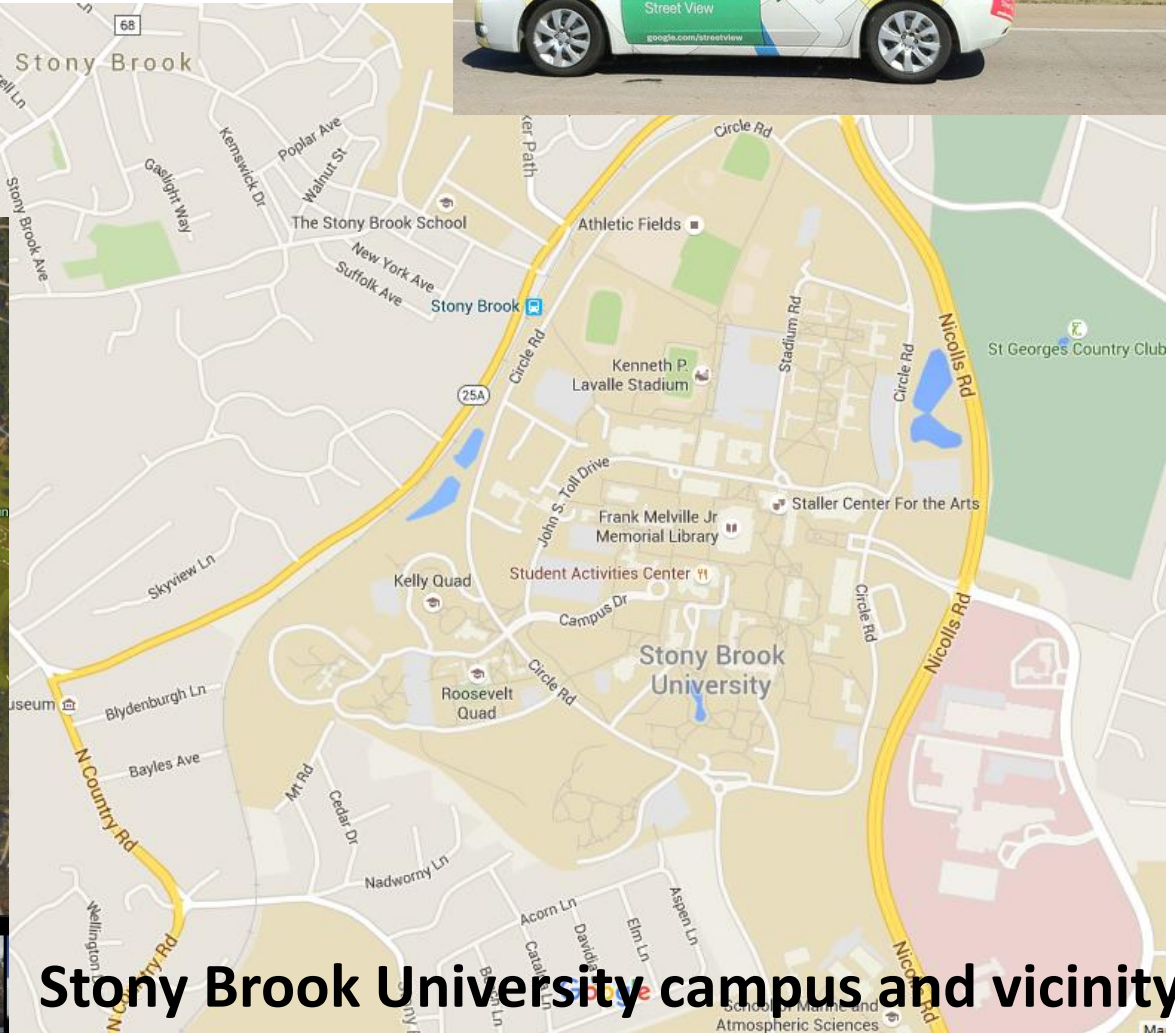
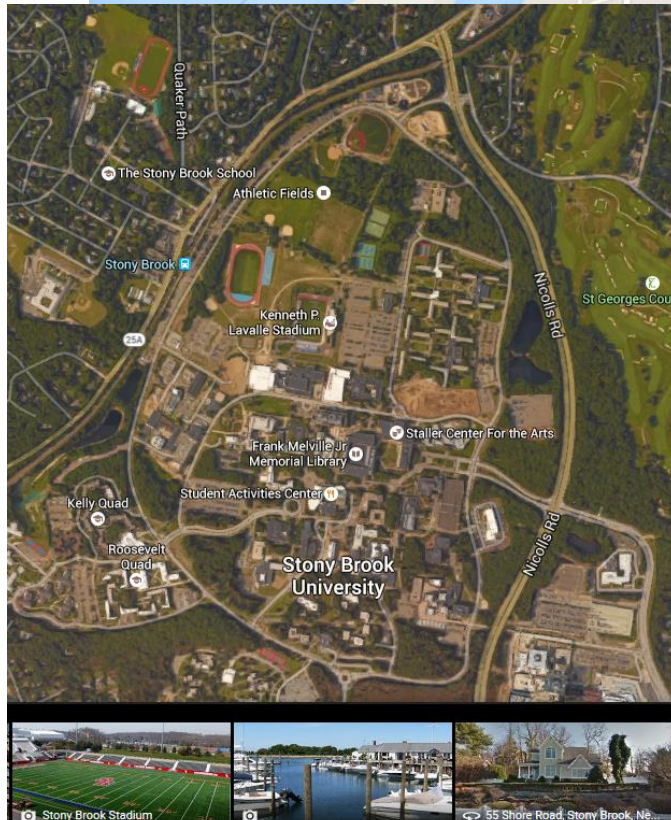
History of Cartography, the art and science of making maps

Oldest known maps are Babylonian clay tablets.



Inscriptions depict **small areas** like a village or a city.

Modern Resources ~2000 AD



Stony Brook University campus and vicinity

History: Greek and Roman Maps

Ptolemy's
(AD 85-165)
"world map"
shows
the Old World
from about
60°N
to 30°S
latitudes.



Note the *pretty accurate* depiction of Mediterranean, Arabian Peninsula and North Africa regions.

History: Medieval Maps

- Before 15th century, maps were hand drawn which made their distribution extremely limited.



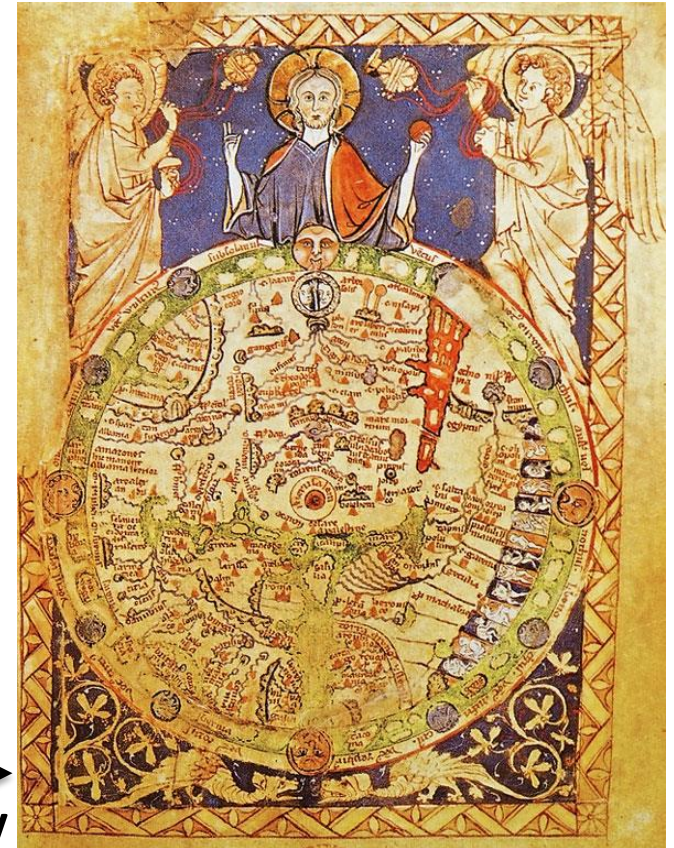
12th century



Isidore ↑
11th century



Hereford
~1280 →



Psalter →
13th century

- “**T-O maps**” appeared in religious books and were dominated by religious views, most maps centered at *Jerusalem*.

History: Renaissance Maps

Beginning in the 15th century, the invention of printing made maps much more widely available.



First map to use the name “America” to label the New World, ~1507

History: World Maps

First **whole-world maps** began to appear in the early 16th century following voyages by Columbus and others to the *New World*.



*Terrarum
Orbis*

by
Henricus
Hondius,
1633

**Which
two
continents
are
still
missing?**

Direction: Tricky Questions

Where are you going to get to if you go:

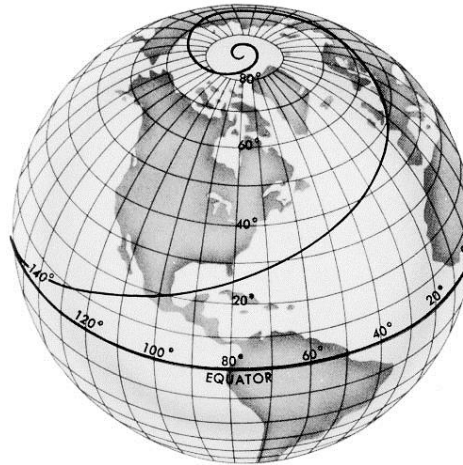
North? South?
West? East?



You will simply get back to where you started after completing a full circle!

Northeast?
Southwest?

ENE?
WSW?



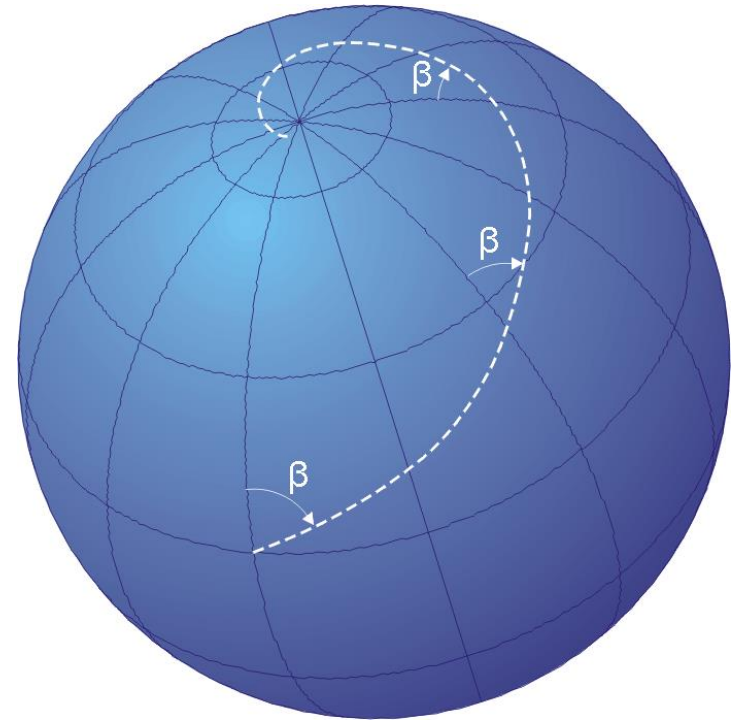
...the
corresponding
POLE (North
or South)!

You will follow
a spiral and
eventually
arrive at...

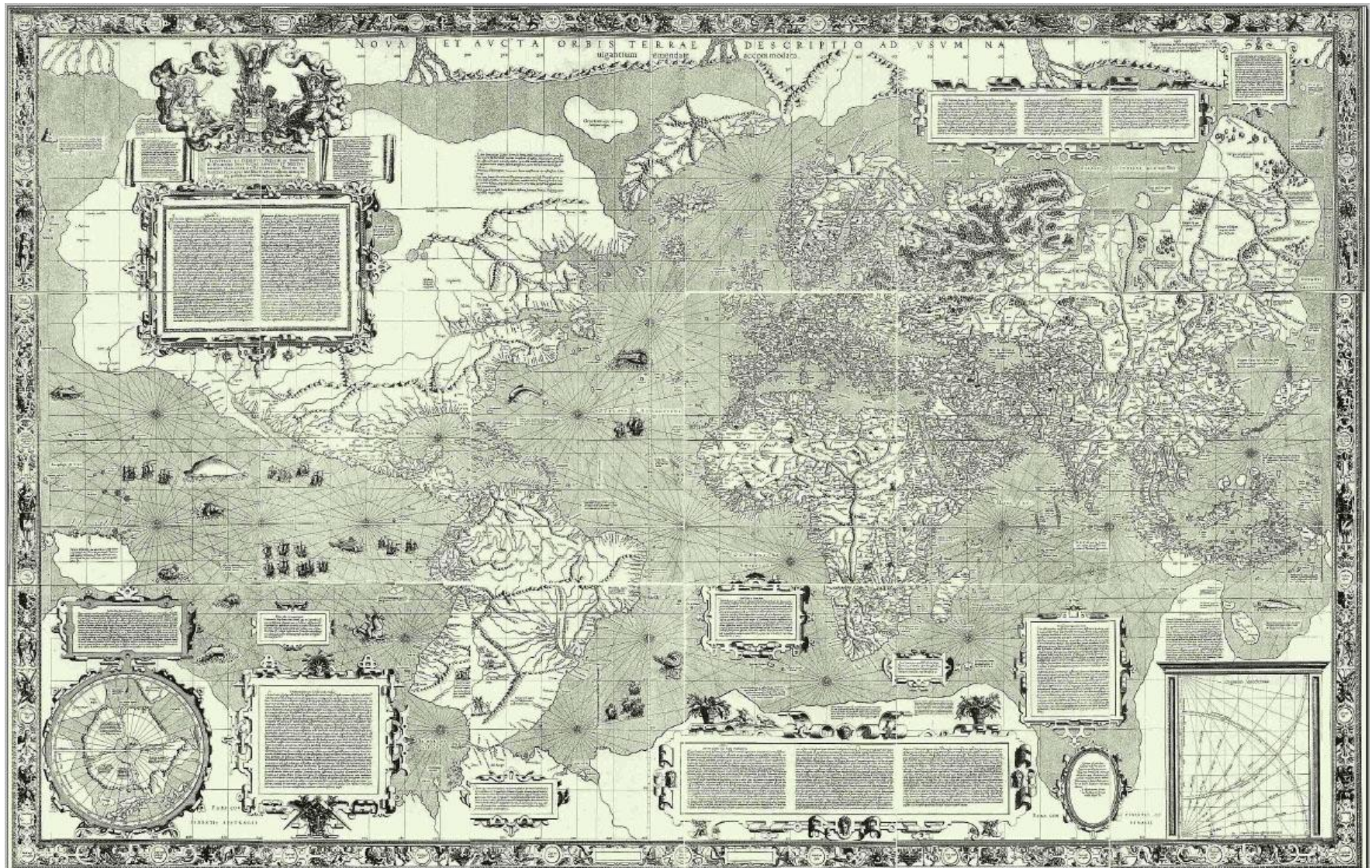


Direction on the Globe

- In navigation, a **rhumb line** (*loxodrome*) is a **path with constant bearing** (constant **COURSE**) as measured relative to true or magnetic north; it is an arc crossing all meridians of longitude at the same angle.
- Early navigators in the time before the invention of the marine chronometer used rhumb line courses on long ocean passages, because the ship's latitude could be established accurately by sightings of the Sun or stars but there was no accurate way to determine the longitude.
- On a **Mercator projection** map, **a rhumb line is a straight line**, which makes this projection uniquely suited to marine navigation!



1679 Mercator Map of the World

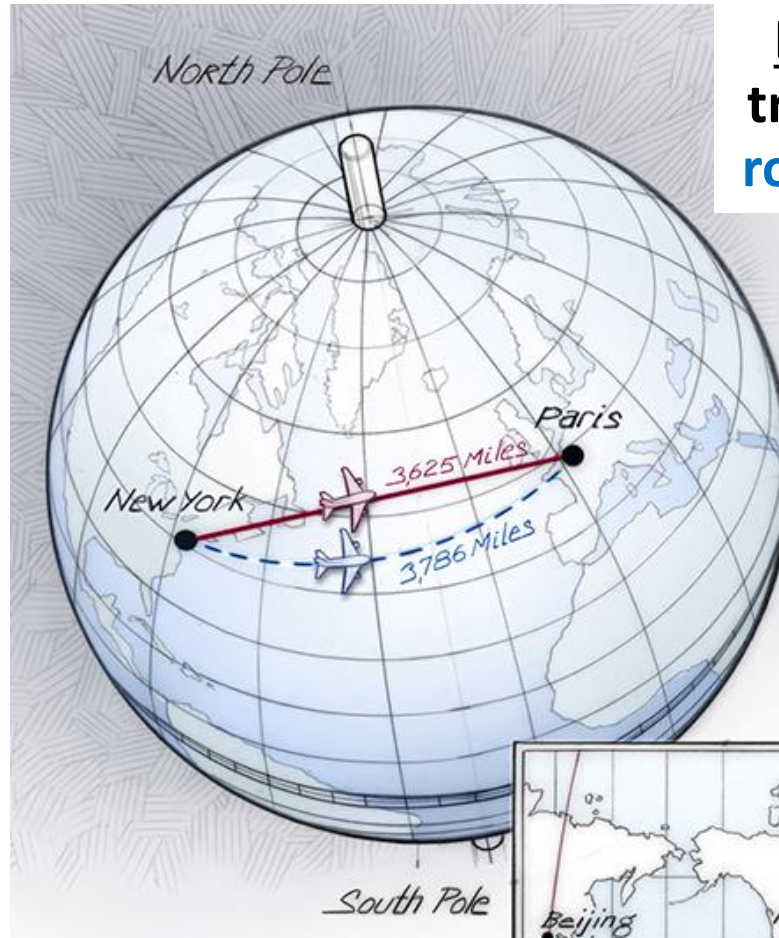


Distance and Direction

A **great circle** is the path of shortest distance between two points on the surface of a sphere (globe).

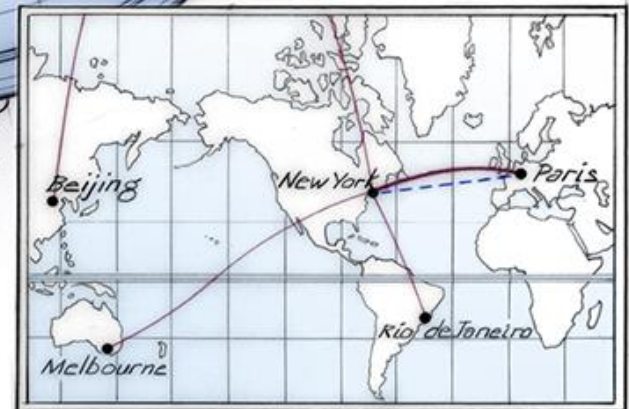


The difference between *great circle* course and *rhumb line* course is most dramatic near the Poles.



Long distance air travel – **great circle route** is often used.

Great Circle route
constant heading
(rhumb line course)



Geographic Map

Geographic maps can be classified into categories by:

- Purpose:

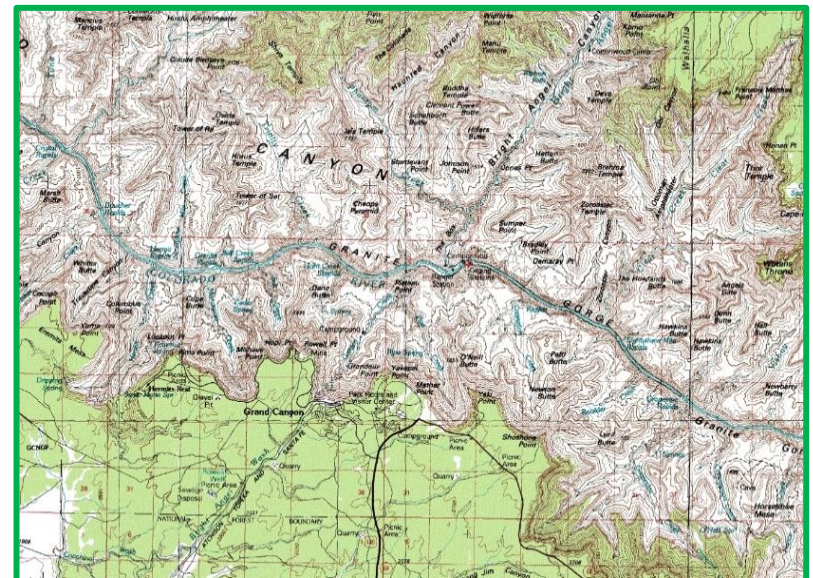
- **General** (variety of features for a general audience)
- **Thematic** (specific geographic themes)



NY City Subway Map

- Detail level:

- **Topographic** (detailed and accurate; large-scale detail and quantitative representation of relief using contour lines)
- **Topological** (simplified so that only vital information remains; lack of true scale, distance and direction)



Types of Maps



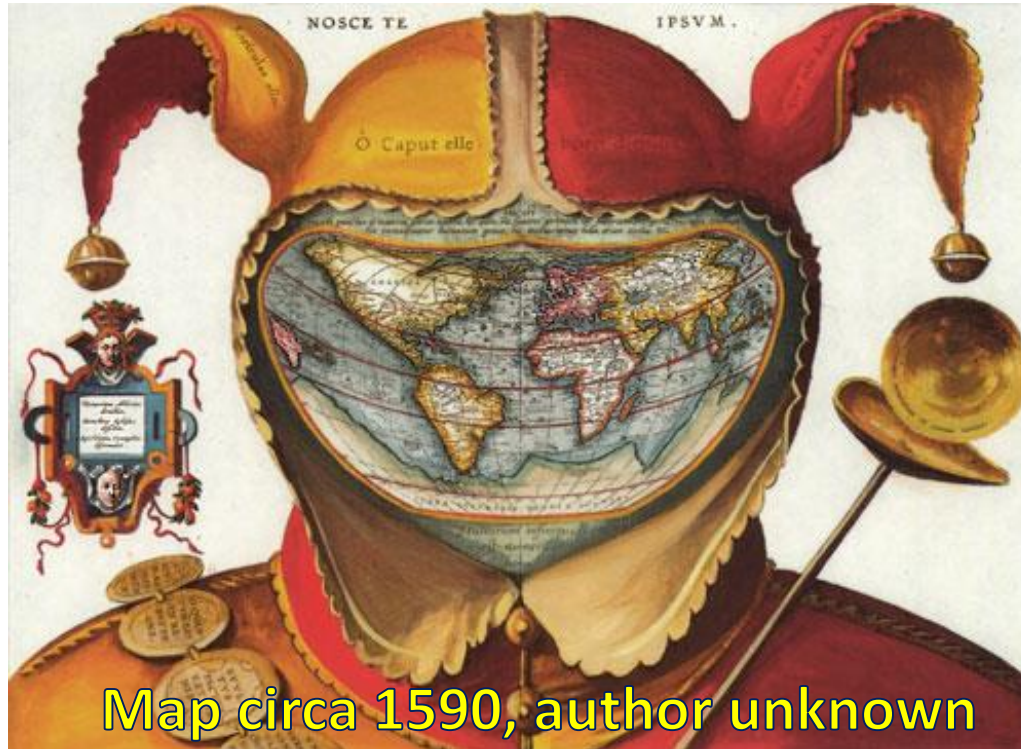
Physical



Political

The Fool's Cap World Map

Are maps realistic representations of the actual world?



**Not
really!**

Map circa 1590, author unknown

A map can display **only** a *few selected features*, usually in *highly symbolic styles* (even the most modern ones!).

All maps are **estimations**, **generalizations**, and **interpretations** of true geographic conditions, made according to certain basic **assumptions** which are not always true or verifiable.