

Humanism to Motion

Humanism

secular concerns v. sacred ones

art, music, literature

God hath endowed us with all of these abilities... let's USE THEM

MAJOR THEMES

- ★ **Individualism (everyman)**
- ★ **Personal religion (devout Christians)**
- ★ **connection to the past**
- ★ **Anti-Aristotlelianism**

What a piece of work is a man, how noble in reason, how infinite in faculties, in form and moving how express and admirable, in action how like an angel, in apprehension how like a god! the beauty of the world, the paragon of animals...

open rebellion

Desiderius Erasmus: "classical and scriptural works written by men"

"take your lessons from Jesus not from the church"

laid the egg that Luther hatched

The Reformation

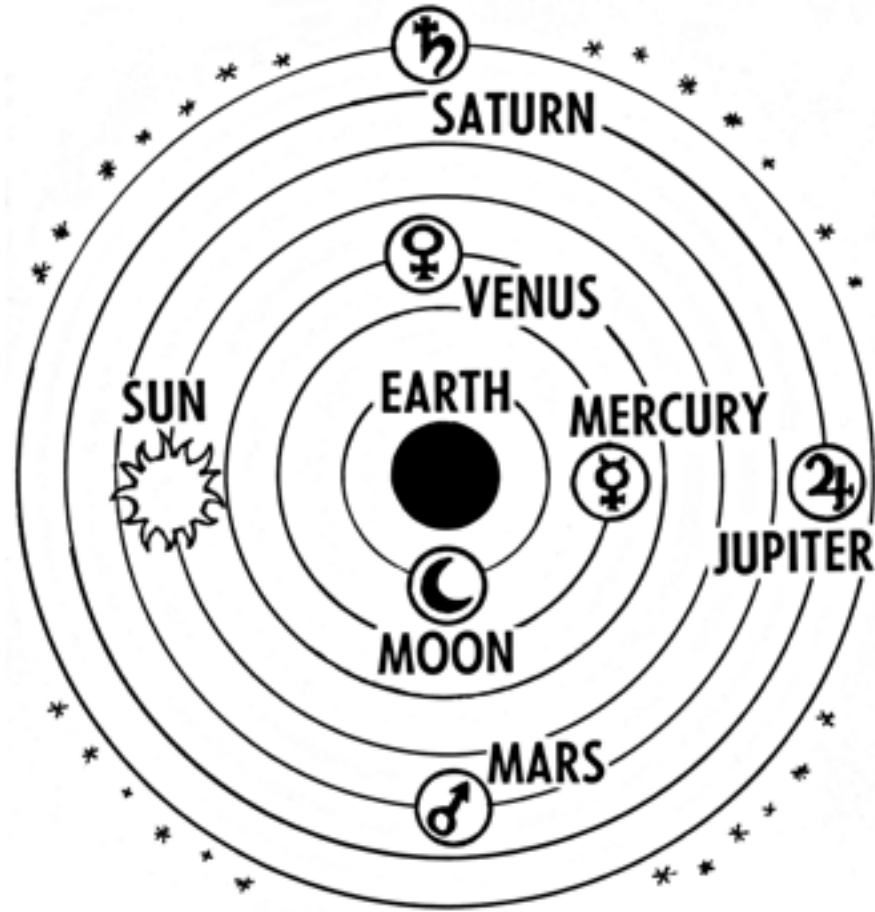
95 Theses

Martin Luther: questioned the need for church hierarchy.

Issues with Scholasticism / Aristotle: eternity of world, mortality of human soul, **Grace cannot be understood as habits and acts**

"If the foreknowledge and omnipotence of God are admitted, we must be under necessity"

heavenly bodies



Ptolemaic: equants

Aristotle → dogma → wrong

fits well with senses, gives humans central place and **made reasonable predictions**

Copernicus: unified system
Appearance v. reality

Ockham's razor

rationalism v. empiricism

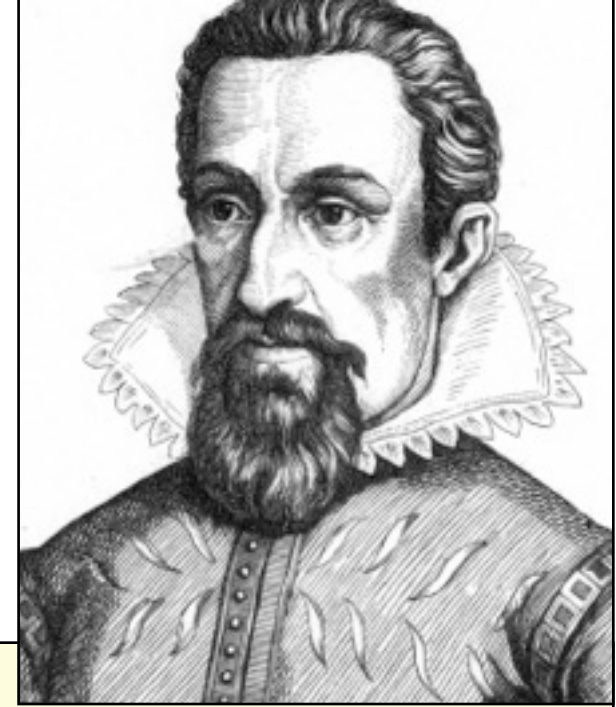


Johannes Kepler

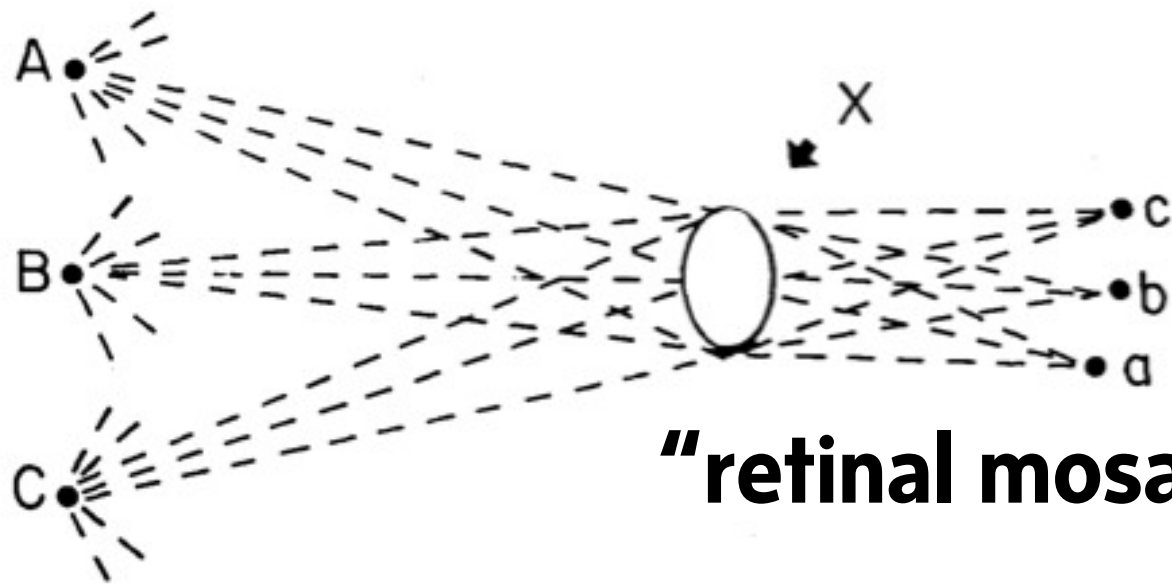
focus on mathematical harmony
(reality as mathematical formalism)

mixes mathematics with physics

deductions be substantiated by empirical observation



Recall Alhazen... a cheat



"retinal mosaic"

Vision is the sense of the stimulated retina . . .
To see is to be aware of the extent that the
retina is stimulated. The retina is painted with
colored rays of visible things. This picture or
representation . . . does not complete the act of
vision until the image so received by the retina
passes . . . to the brain Inside within the
brain is something called the *sensus communis*,
on which is impressed the image....

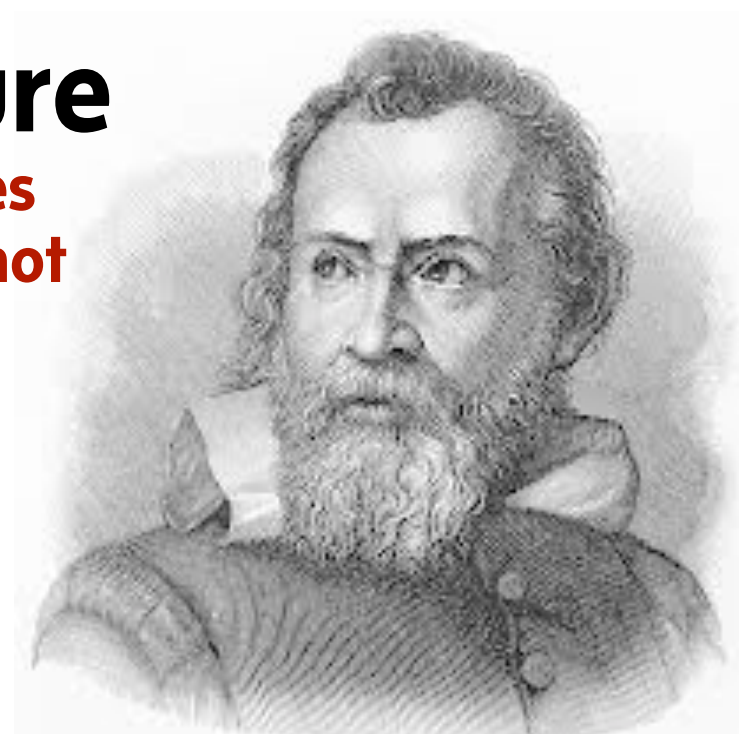
distance cannot be seen: has no physical basis

computed rationally (Descartes)

treatment of light accepted by Berkeley and followers (Helmholtz)

Nature's Inherently Mathematical Nature

"Philosophy is written in that great book which ever lies before our eyes — I mean the universe — but we cannot understand it if we do not first learn the language and grasp the symbols, in which it is written."



A phenomenon is knowable if:

- (i) nature's math is known and
- (ii) can be applied to the phenomenon.

physical laws = mathematical formalisms of empirically observed phenomena = (sort of) Plato's forms.

physics \neq metaphysics

Is this within the proper domain of physics?

Yes for size, shape, number, motion (purely objective, primary properties, physics)

No for smells, colors, tastes, sounds (mere appearances, secondary properties, not physics)

*** see Hobbes**

a science of conscious experience?

knowledge is problem of psychology, rather than metaphysics

what problems do we encounter?

Objective and subjective reality

objective exists independent of anyone's experience

subjective reality is personal



Primary and secondary qualities

HOT

WARM

COLD

primary: absolute, immutable, and capable of precise mathematical description (real)

secondary: purely psychological experiences that have no counterpart in real world (nominal)

2 arguments: design and relativistic

Only primary qualities may be studied scientifically

Properties prominent in our experiences are not there in the object, unless also prominent in science.

human experience inferior (human rationalism inferior too)