Galileo Galilei (1564-1642)

“Here, a simple tube and two lenses had made a rod for beating the Aristotelian”

Life - Childhood
- Born in Pisa, Italy, Feb. 15, 1564
- Father - Vincenzo Galilei
  - Musician and Mathematician
- Formal Education
  - Monastery Santa Maria di Vallombrosa
- Interests
  - Music, mathematics, physics, philosophy
- Medical
  - University of Pisa (1581)

Life - Adulthood
- 1585 - Florence without a degree
- Math Professor
  - University of Pisa (25 years old)
  - University of Padua
- 1604 - Studied Astronomy
  - Celestial observations
- 1609(33) - Galileo’s trial
- 1642 - Galileo’s death

Accomplishments in Terrestrial Physics
- Founder of Modern Experimental Science
- Mechanical
  - Isochronous motion of pendulum
  - Pendulum Clock
  - Military Compass
  - Parabolic motion of a projectile
  - Strength of materials

Accomplishments in Terrestrial Physics
- Inertia
  - Laid Foundation for Newton’s Law of Motion
  - Law of Falling Bodies
- Dynamics
  - Studied the phenomenon of heat
  - Thermometer

Accomplishments in the Field of Astronomy
- Telescope Improvements
  - Upright-image telescope
  - Greatly improved the lenses for better views (better focus)
  - Eliminated chromatic aberration problem
  - First thirty-times magnification telescopes
### Astronomical Observations
- Craters & mountains on the moon
- Four satellites of Jupiter
- Phases of Venus
- Rings of Saturn
- Individual faint stars of Milky Way

### Astronomical Conclusions
- Moon & Celestial bodies
  - Not perfect, smooth bodies
  - Subjected to change and decay
- Copernican Theory
- Mutable, Heliocentric Universe
- Theory of Tides

### Books
- “Starry Messenger” (1609)
  - His celestial observations
- “The Assayer” (1623)
  - Mechanics and comets
- “Dialogue Concerning The Two Chief World Systems” (1632)
- “Discourses on Two New Sciences” (1638)

### Galileo’s Famous Trial
- Case of the century (1633)
  - Tried by Roman Catholic Church
- Rational
  - Publishing “Dialog on The Two Chief World Systems”
    - Defended Copernican Theory of the Universe
    - Strongly rejected well-accepted Aristotelian Theory

### Social & Scientific Influences
- Most important scientist in the 16th Century
- Started the Age of Reasoning
- Greatly admired & inspiring
  - His courage for standing against a wrong system of beliefs
- Father of the Space Age