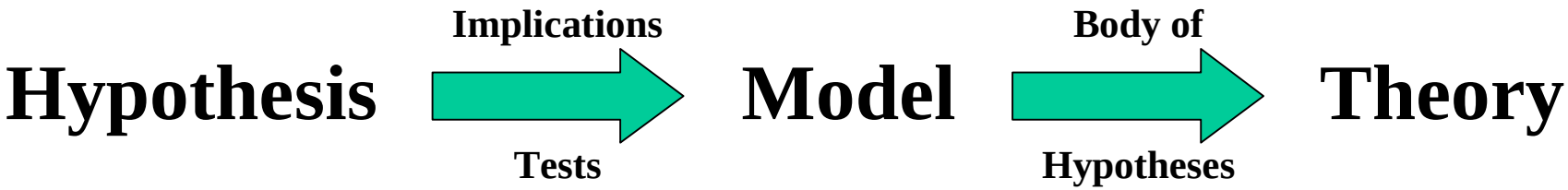
Scientific Method



Gather data	Form a Theory	Test the Theory
Careful design Understand errors	Reproduce observations	Controlled experiments

No theory is irrefutable. All theories must be able to make predictions and must hold for all valid observations (e.g. general Relativity).

Small Angle Approximation

- Size, angle and distance are related

$$D = \frac{\alpha\, d}{206265}$$

D: linear size
d: distance
α: angular size (arcseconds)

- 206265: There are 360^o or 2π radians in a circle
- Relation between size and angle
  - For a fixed size - further away (smaller)
  - For a fixed distance - larger object larger angle
- Note objects with the same angular size may have different linear sizes (due to distance).