

September 9, 2015  
MSE 2101 topics

- The changing view on Life in the Universe
- Are we done with gravity? Or is there more to the story?
- The methods of scientific deduction
  - Hypothesis – an educated guess
  - Building the model
  - Testing predictions by observation
  - Refining the model
  - Creating the theory
- Exploratory research, serendipity
- *Hallmarks* of a successful scientific model
  - explanations based exclusively on natural phenomena
  - models as simple as possible: *Occam's razor*
  - must yield testable predictions and verifiable observations
- Science vs. pseudoscience
- Scientific objectivity and bias
- Science and religion – in true or apparent conflict?