

September 9, 2020
MSE 2101 topics

- Solar system facts:
 - orderly motion of large bodies
 - two types of planets (terrestrial and jovian)
 - small bodies
 - notable exceptions
- The nebular theory:
 - initial contraction and disk formation
 - formation of the protostar and planetesimals
 - condensation and accretion
 - clearing the nebula
- So why two types of planets?
- Ok, I get ice and other water compounds, but *gases*?
- Examples of alternative models
 - the fast-spinning Sun
 - Comte de Buffon's collision hypothesis
 - Chamberlin-Moulton's close encounter hypothesis
 - Schmidt's Sun passing through an interstellar cloud
- Challenges to the nebular theory
 - weird exoplanets – hot jupiters
 - stellar formation typically a violent process
 - planetary disks can linger a long long time