

February 16, 2021
MSE 2103 topics

- The proton-proton chain revisited:
collision → weak decay → heating → capture → replay →
final collision
- Issues with the model
- Kinetic theory of gases, quantum tunneling to the rescue!
- So how long before the Sun burns out?
- Looking up to other stars ... but uberlarge distances!!!
 - are brightnesses intrinsic, extrinsic or both?
- How would *you* measure a distance to a star?
- Trigonometric parallaxes
 - recall the definition of a parsec
 - Proxima has the largest parallax: 0.747''
 - How far is Vega, if its parallax is 0.129''?
 - What is the parallax of Antares, if its distance is 190pc?
- The fundamentals of light
 - continuous or corpuscular (particle-like)?
 - speed in vacuum, speed in a medium
 - wavelength and color – Wien's law
 - color and temperature – Planck's law
 - temperature and brightness – Stefan-Boltzmann's law