

April 9, 2019
MSE 2103 topics

- Things are getting tricky, be sure to consult the book!
- Recap: why is Hubble constant not a constant?
- Expectation about the rate of expansion through time
 - coasting or decelerating?
- Why would one care about the rate of expansion through time?
- How would one measure the rate of expansion through time?
- Binary stars in a nutshell
- White dwarfs in binaries and the Chandrasekhar limit
- Type Ia supernovae
 - 700 million K and the large-scale ignition
 - $O \rightarrow Si \rightarrow Ni$ leaves 40-60% of the white dwarf in Ni
 - $Ni \rightarrow Co$ (6 days) $\rightarrow Fe$ (77 days)
 - $Fe \rightarrow \alpha$ particles, cooling of the core
 - α particles $\rightarrow p, n, e$
 - $p, e \rightarrow n$ – how does this happen again?
- Other types of supernovae
- The rates of supernovae
- SCP (Perlmutter) vs. HzSS (Schmidt)
- Einstein's cosmological constant and dark energy