

Cosmological Simulations of the Formation of Dwarf Galaxies

OU REU 2019

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Background

- Dark energy plus cold dark matter (Λ CDM) cosmological model
- There are challenges...
- Solution is unclear

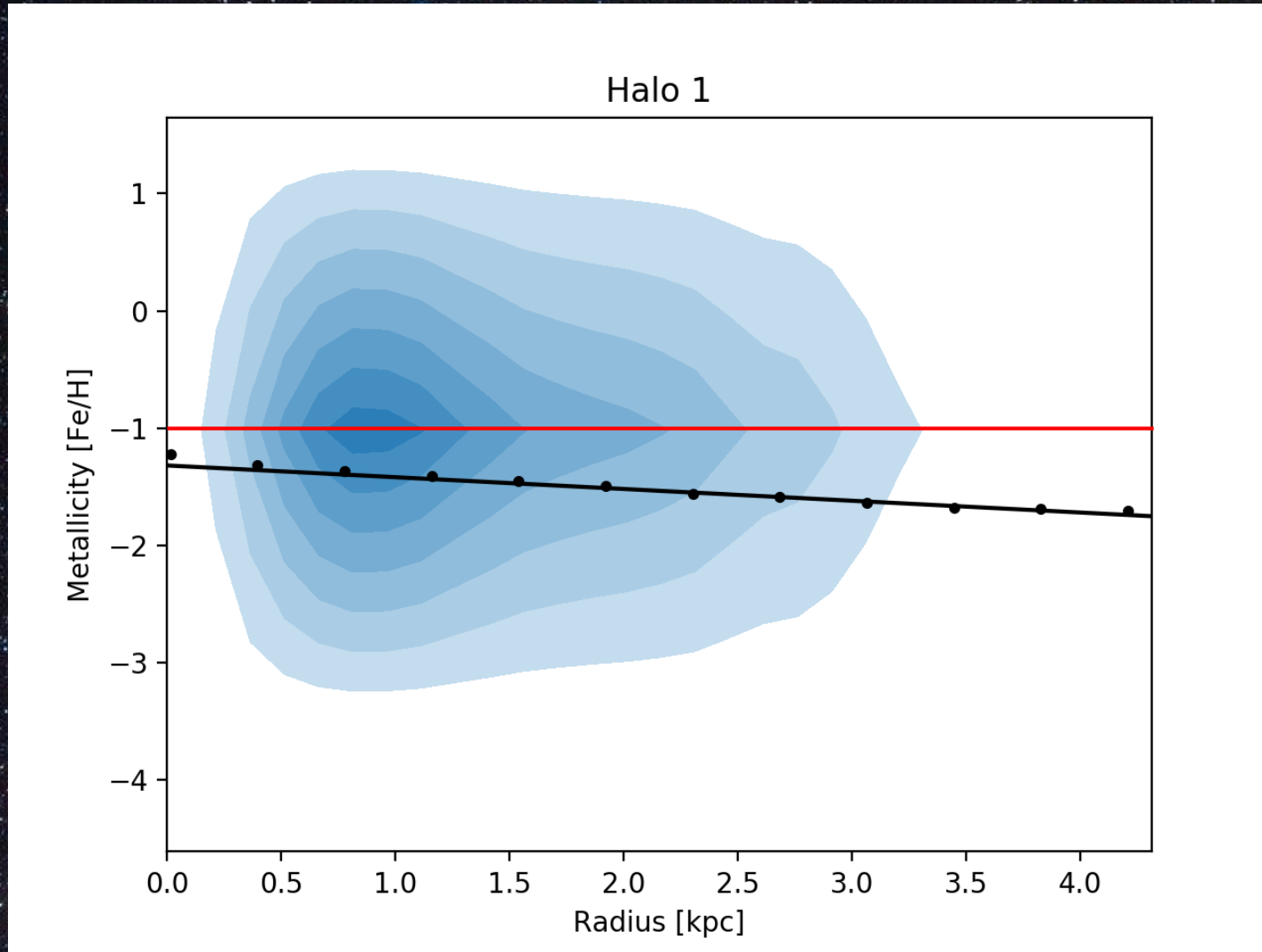
What is a Dwarf Galaxy?

- Perspective: Milky way: $(0.8-1.5)\times 10^{12} M_{\odot}$ & M31: $(1.5\pm 0.5)\times 10^{12} M_{\odot}$
- Adopted Dwarf Galaxy Naming Conventions:
 - Bright Dwarfs: $M^* \sim 10^{7-9} M_{\odot}$
 - Classical Dwarfs: $M^* \sim 10^{5-7} M_{\odot}$
 - Ultra-Faint Dwarfs: $M^* \sim 10^{2-5} M_{\odot}$
- Prior to 2004, the smallest galaxy known was Draco.
- Today, we know of galaxies that are 1000 times less luminous.

Dwarf Galaxies

- Young Stars \rightarrow center
- Old Stars \rightarrow edges
- Young Stars = \uparrow Metallicity
- Old Stars = \downarrow Metallicity
- BUT... observers saw...
- So...

My Project



Picture created by another student named Claire.

Questions?

THANKS FOR YOUR ATTENTION



**IF YOU HAVE ANY QUESTIONS, MY FRIEND
GOOGLE WILL ANSWER THEM.**