Science Presentations

Basic Structure

- Introduction
    - Title slide. This should give the audience an idea of where the talk is going.
    - Introduce the topic (e.g. “stellar flares” or “titan and its atmosphere”) and explain basic concepts, background information
    - Tell the audience the problem. This should include both “big” and “small” picture questions. “We want to know {something} because it will help us understand {small picture} which is important because {big picture}”

Basic Structure

- Methodology
    - Talk about how you approached the problem and why
    - “To study {something} we use this {tool/ simulation/data} and then do {tests} to get the information we need”
    - Common Problem: DO NOT GO INTO TOO MUCH DETAIL. Generally one or two slides is enough.

Basic Structure

- Results
    - This is the bread and butter of your talk. Here is where you spend most of your time
    - FIGURES! People want to see plots or other figures that illustrate your results, **not text**!
    - Don’t forget to keep brining things back to your big and small questions.

Basic Structure

- Discussion
    - What are the implications of your findings? **Remember to connect it to the big picture!**
    - Talk about any errors/short comings of your methodology

What do you put on slides?

- **Titles!** These can help guide both you and your audience
- **Be Concise!** Each slide should have a single point that the audience should take away.
- **Figures!** Text is boring and people won't read it. One or two figures per slide. Make sure they are clear and readable!
- Limit the number of equations. Explain most things in words. Only use if they will add to or help your conceptual explanation
- Any text should be short and concise.

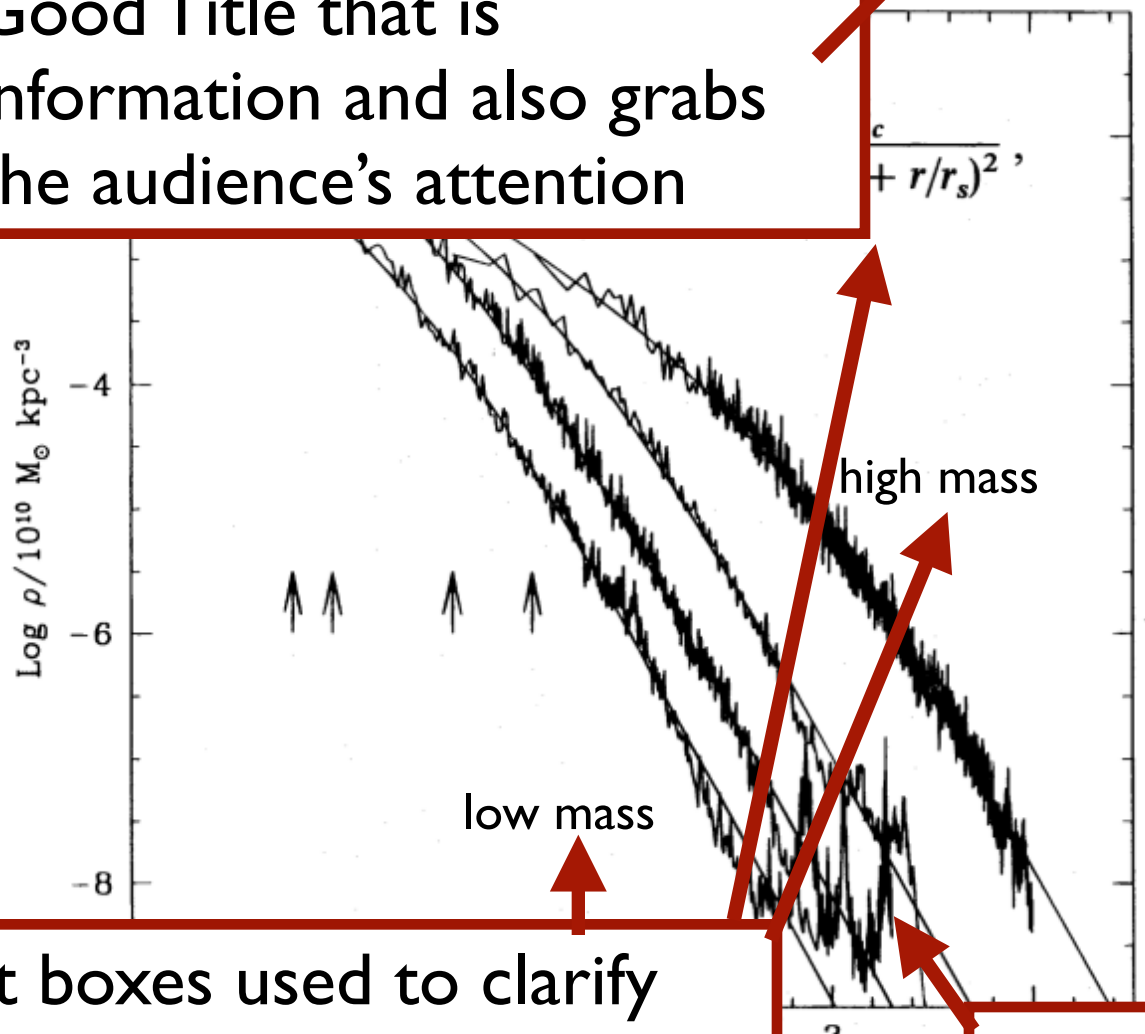
Misc. Presenting Tips

- Do not read from your slides!
- Talk with energy and authority. Do not be monotone. Keep up the momentum!
- Don't move around the room too much
- User pointers. Do not try to point to things with your finger.
- Know your audience. Think about what you need to explain and what you can skip. Think about what people care about
- For plots: it might be a good idea to use text boxes to make axes labels, etc more readable. Make sure to thoroughly explain each plot. ("this is a plot of {...} vs {...}. It shows that {...} which implies {...}")
- Practice Practice Practice!

Example: A Good Slide

A Universal Density Profile

Good Title that is information and also grabs the audience's attention



Log(density)

- The profiles follow the same functional form over four orders of magnitude in mass
- This implies self similar structure formation

Minimal text

Text boxes used to clarify where needed

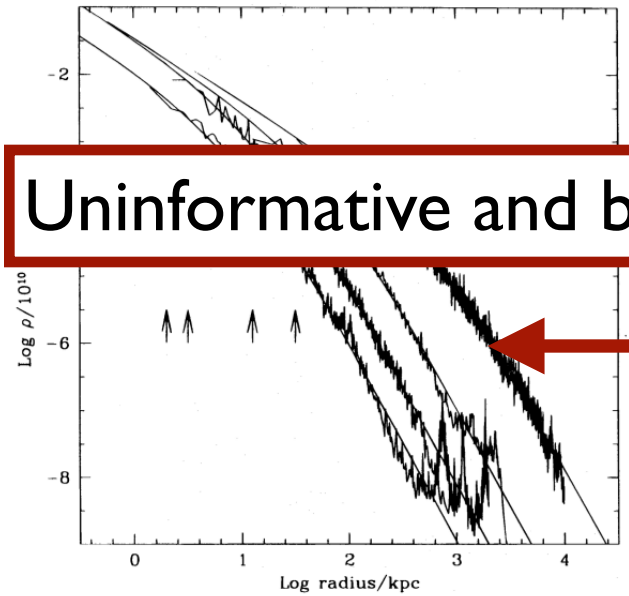
Plot is large and readable

Log(Radius)

Example: A Bad Slide

Results

Uninformative and boring title



$$\frac{\rho(r)}{\rho_{crit}} = \frac{\delta_c}{(r/r_s)(1 + r/r_s)}$$

$$\delta_c = \frac{200}{3} \qquad c^3$$

Too Many Equations

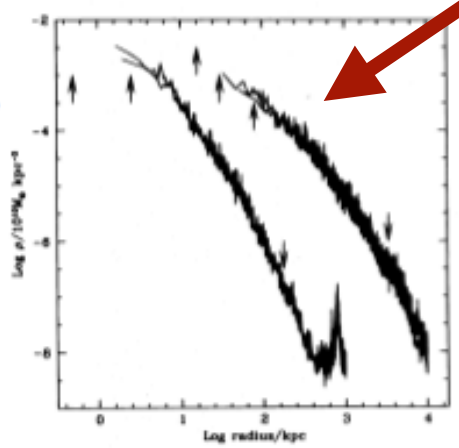
Too many plots! And they are way too small! No one can read the axes

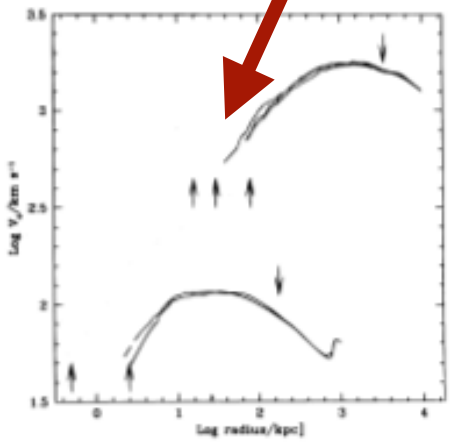
- f the
- f the

radius for four dark matter halos of different masses

o density matter halos, solution.

ws the velocity profile of the same two halos





- Resolution is not a factor on the simulations. The top plot reveals that dark matter halos follow the same profile regardless of mass. Thus, this implies self-similar structure formation!!!

WAAAAY too much text