Phil (Fajardo) Hopkins Group in TAPIR: Astrophysical Theory on Large Scales - Formation of Galaxies, Stars, Planets, Super-Massive Black Holes: the Universe's big stuff



Phil



Kung-Yi Su



Ivanna Escala (observer, but did some theory!)



Mike Grudic





Recent

Grad Students (Physics & Astronomy)

Denise Schmitz



Ge (Wendy) Chen

lliaria Caiazzo



Andrew Emerick











Lina Necib

Current **Postdocs** (Working with Students & Phil)



Panapoulou

Cameron Hummels



Coral Wheeler

Gina





Cosmology & Galaxy Formation (+Stars & Black Holes)

- How do we go from Big Bang to Milky Way?

(numerical simulations to link the two...)



- Formation of structure in the Universe
- Probes of dark matter & dark energy
- Galaxy formation: why do our models fail so badly?
- Stars (Supernovae) + Black Holes (Quasars): they matter!



Phil Hopkins & Group

From Galaxies to Planets - Scales ~ 10¹² - 10²⁸ cm





(Collapse of a disk around a young star to form a giant planet by gravitational instability)

- How do stars form? Why isn't everything a star?
- How do planets form? Why are there planets unlike anything in our solar system?
- How do the "seeds" of super-massive black holes form? How do they grow/merge?
- Chaos, turbulence, radiation, magnetic fields, gravity, fluid dynamics, together at last!

