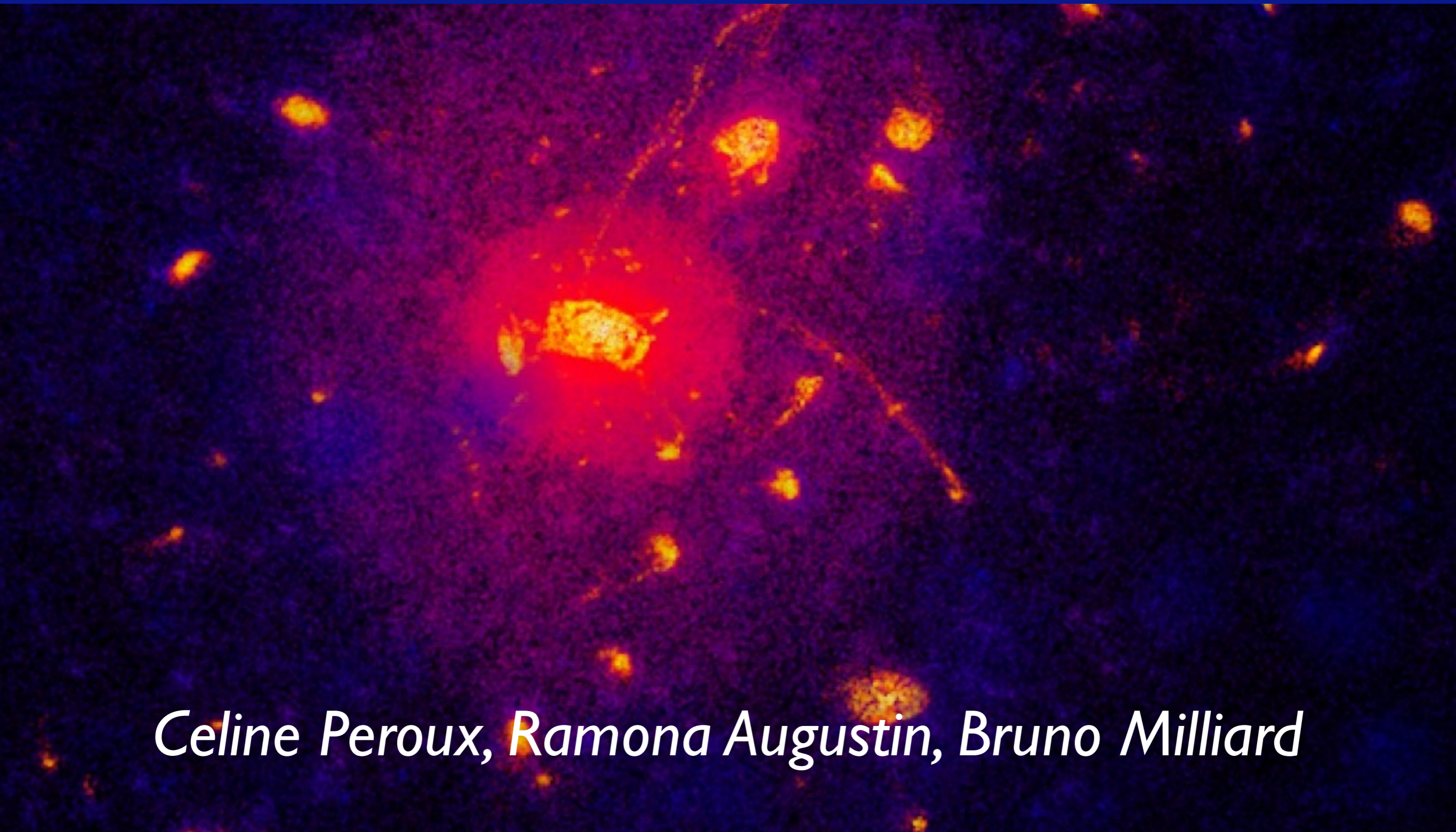
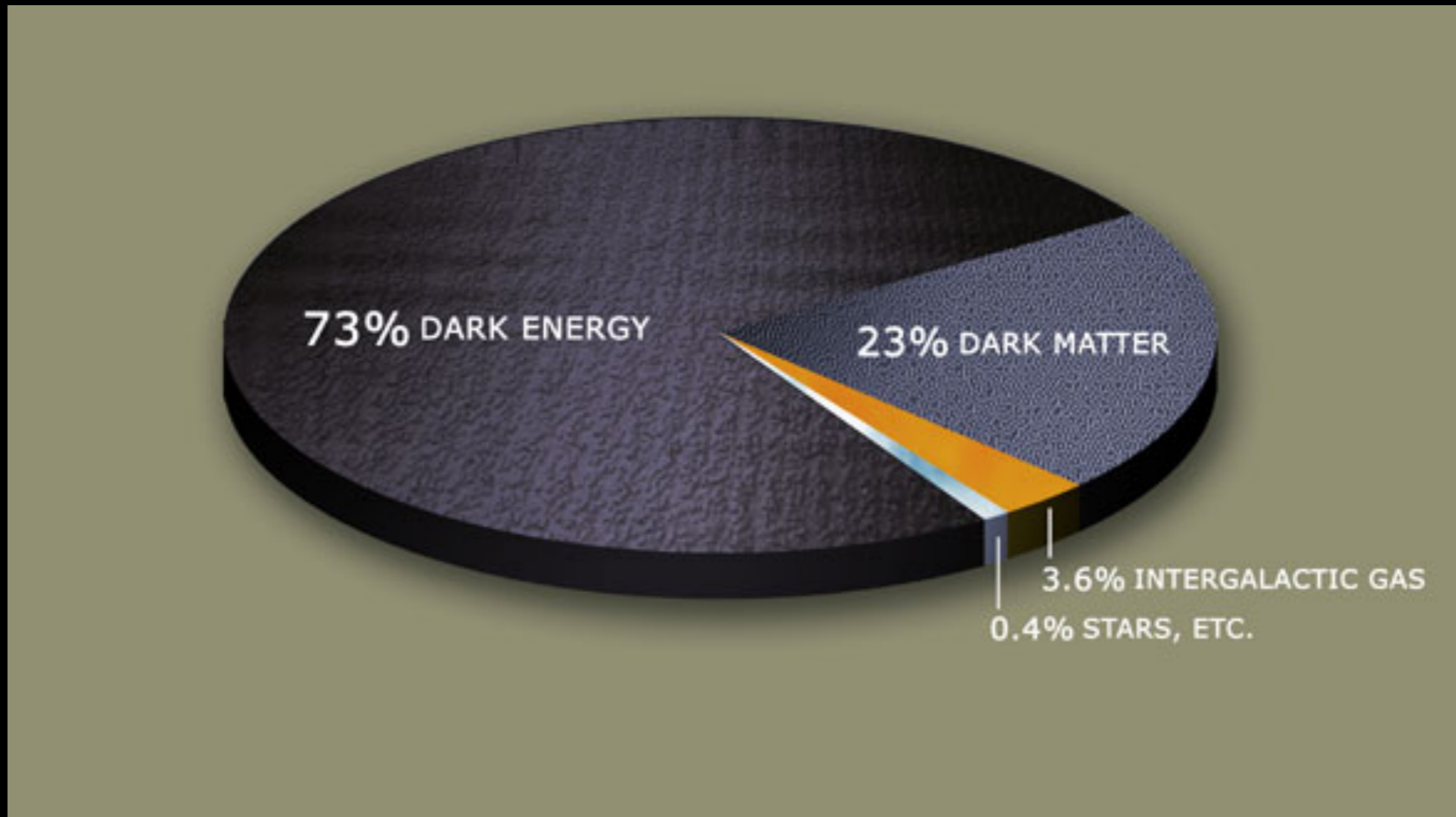


The Circum-Galactic Medium



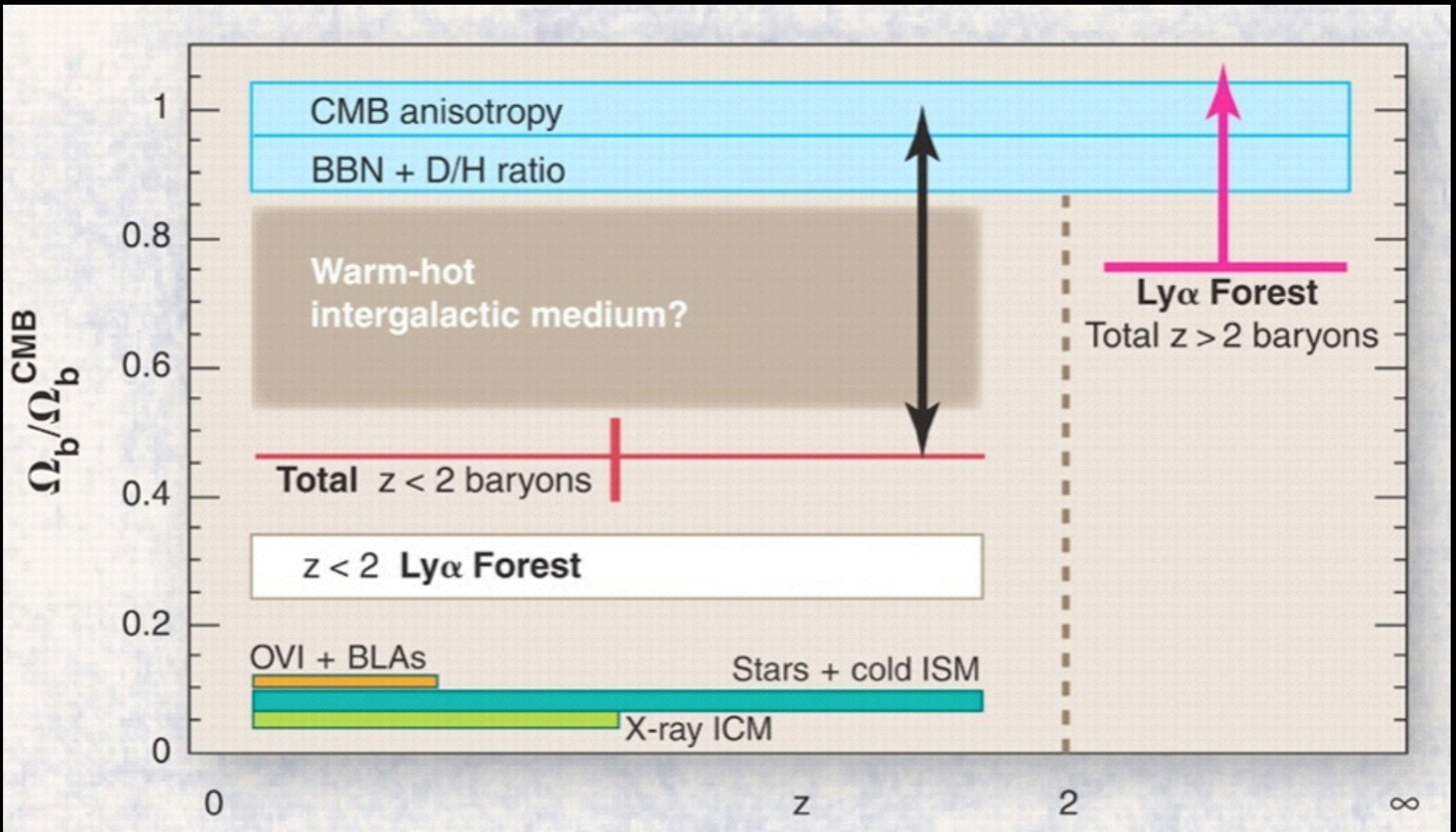
Celine Peroux, Ramona Augustin, Bruno Milliard

Universe Constituents

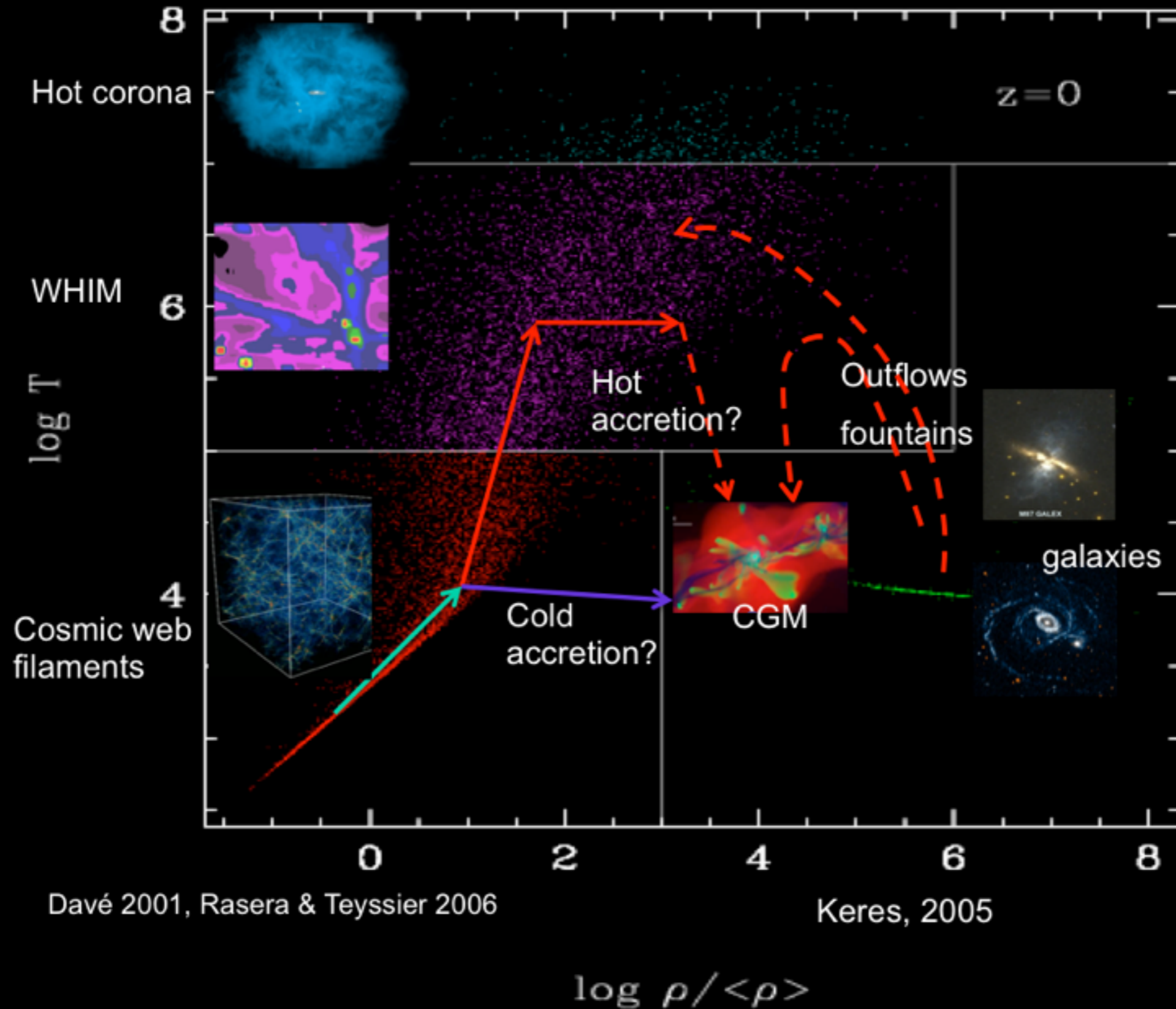


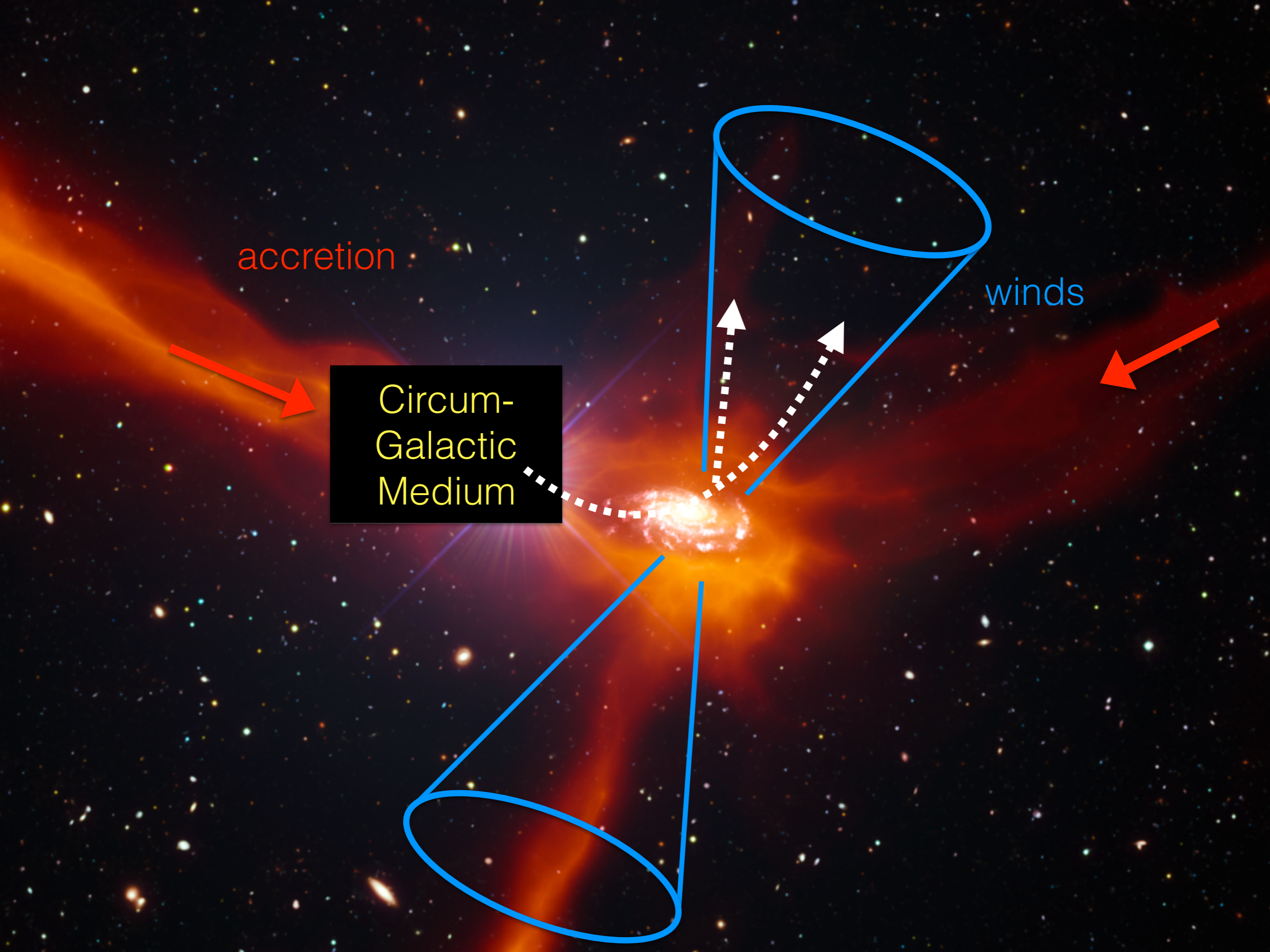
- only 10% of baryons in stars

Where are the Baryons?



The Baryon Cycle





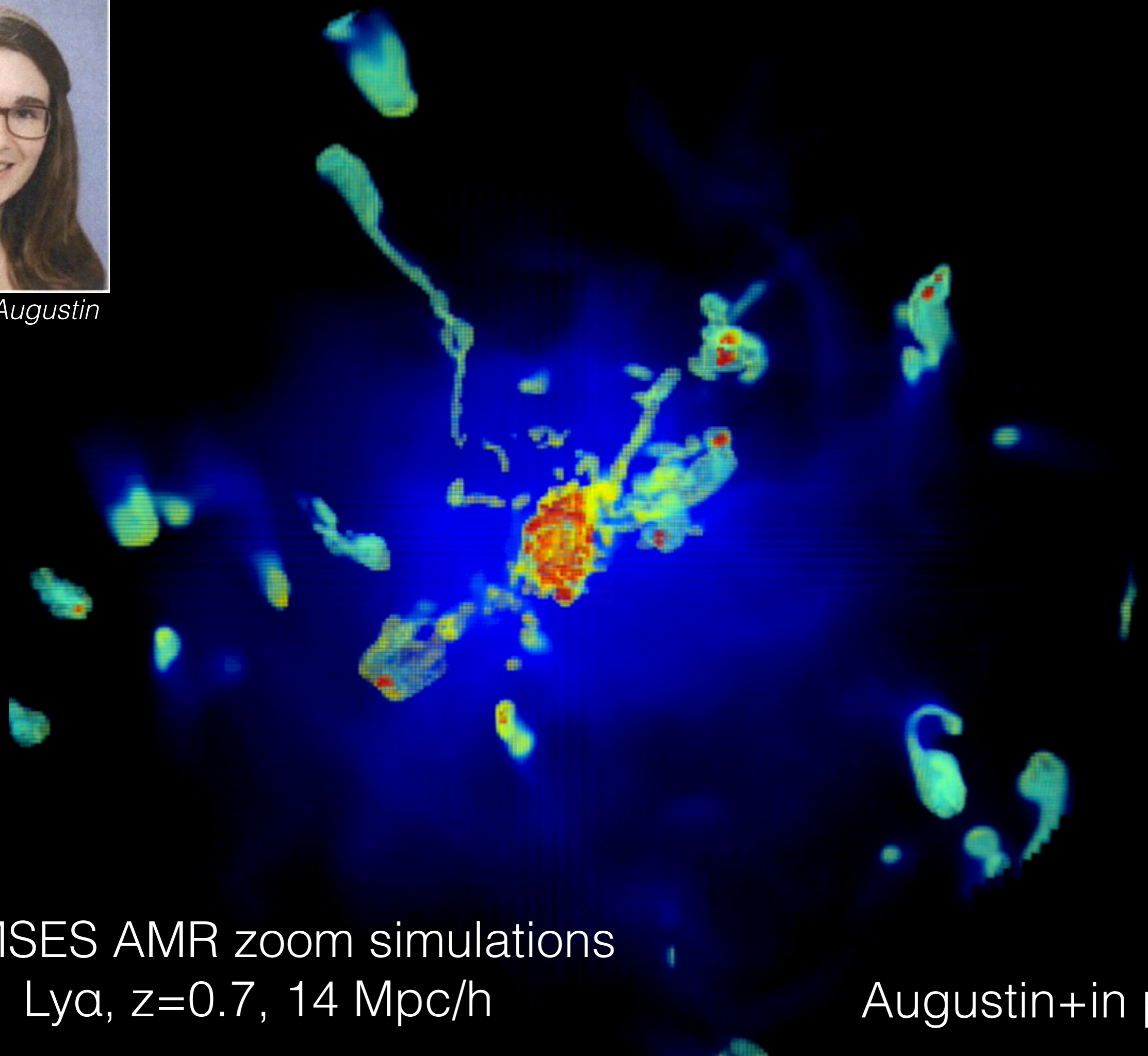
accretion

winds

Circum-Galactic Medium



Ramona Augustin



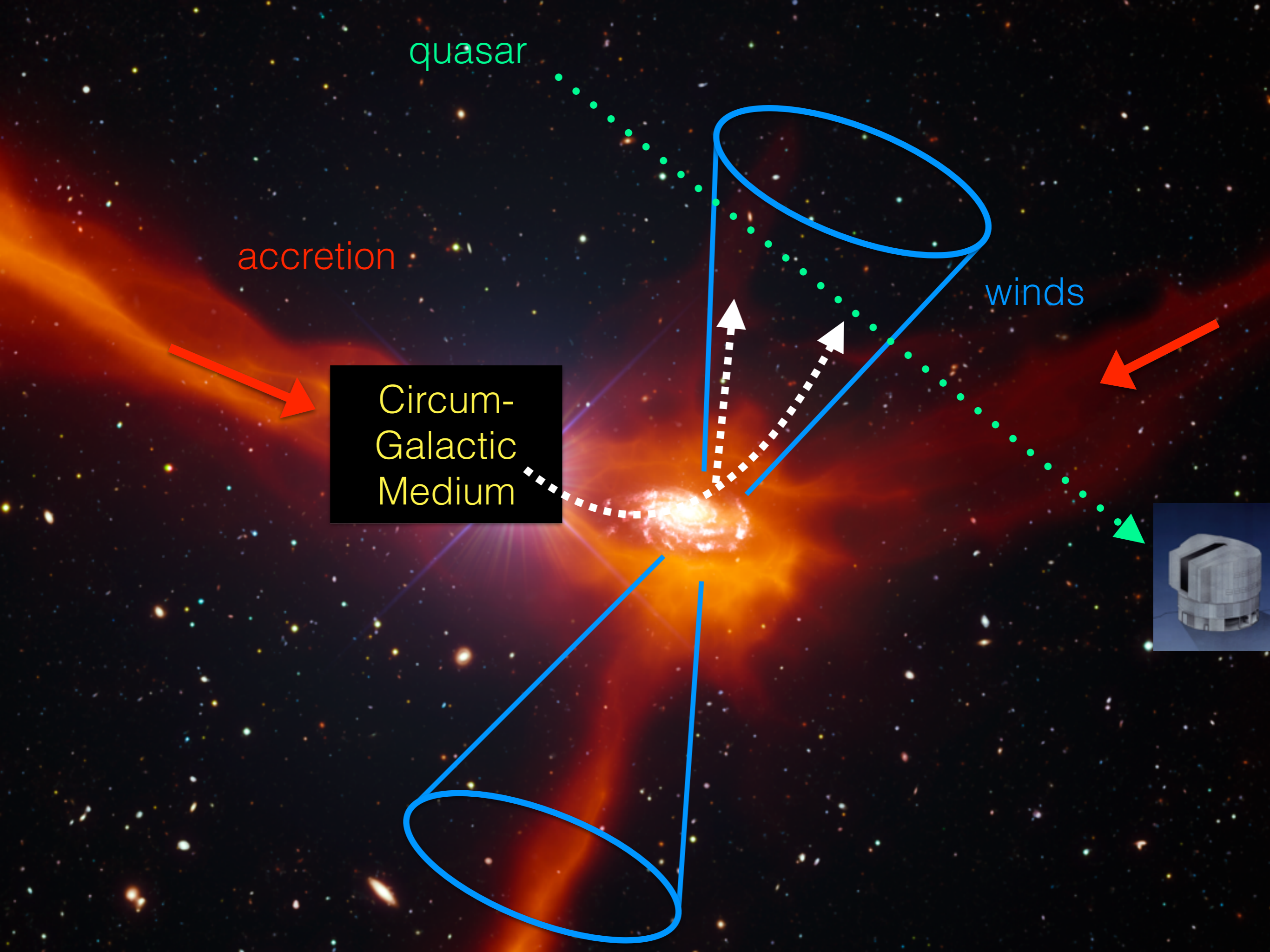
RAMSES AMR zoom simulations
 $\text{Ly}\alpha$, $z=0.7$, 14 Mpc/h

Augustin+in prep

Questions to Address

1. how do galaxies accrete gas?
2. how much mass/energy do winds carry?
3. how far do they travel?
4. how much gas falls back?
5. what are the dynamics of flows into and out of galaxies?

How to probe this gas?



quasar

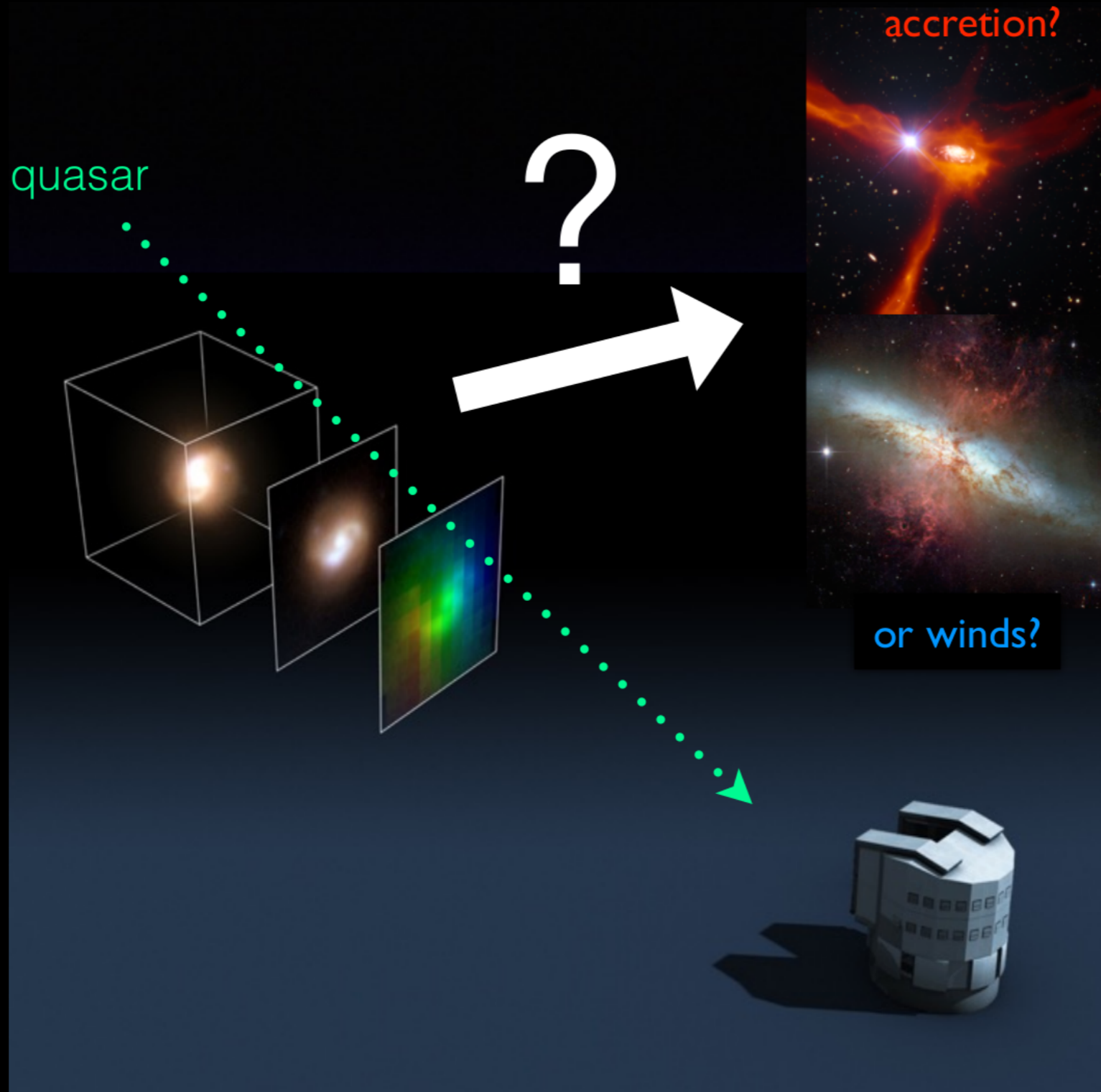
accretion

winds

Circum-Galactic Medium



3D Spectroscopy



Why 3D Spectroscopy?

1. Search machine when location poorly constrained
 2. Get spectrum of everything in the field
 3. Circumvent slit-loss
 4. Spatially resolved kinematics
 5. Disentangle nearby objects on plane of sky
- => tomography of the CGM

Current State-of-Art: MUSE

CP+17

