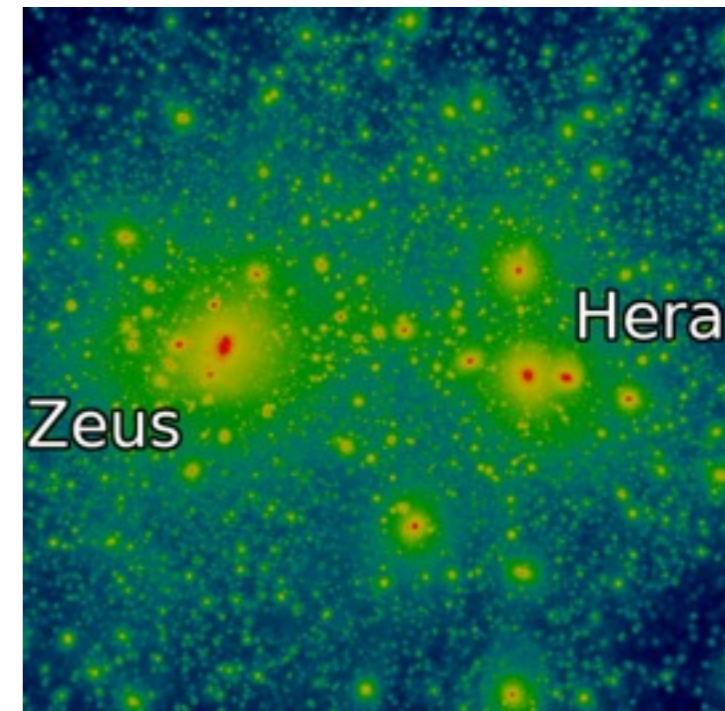
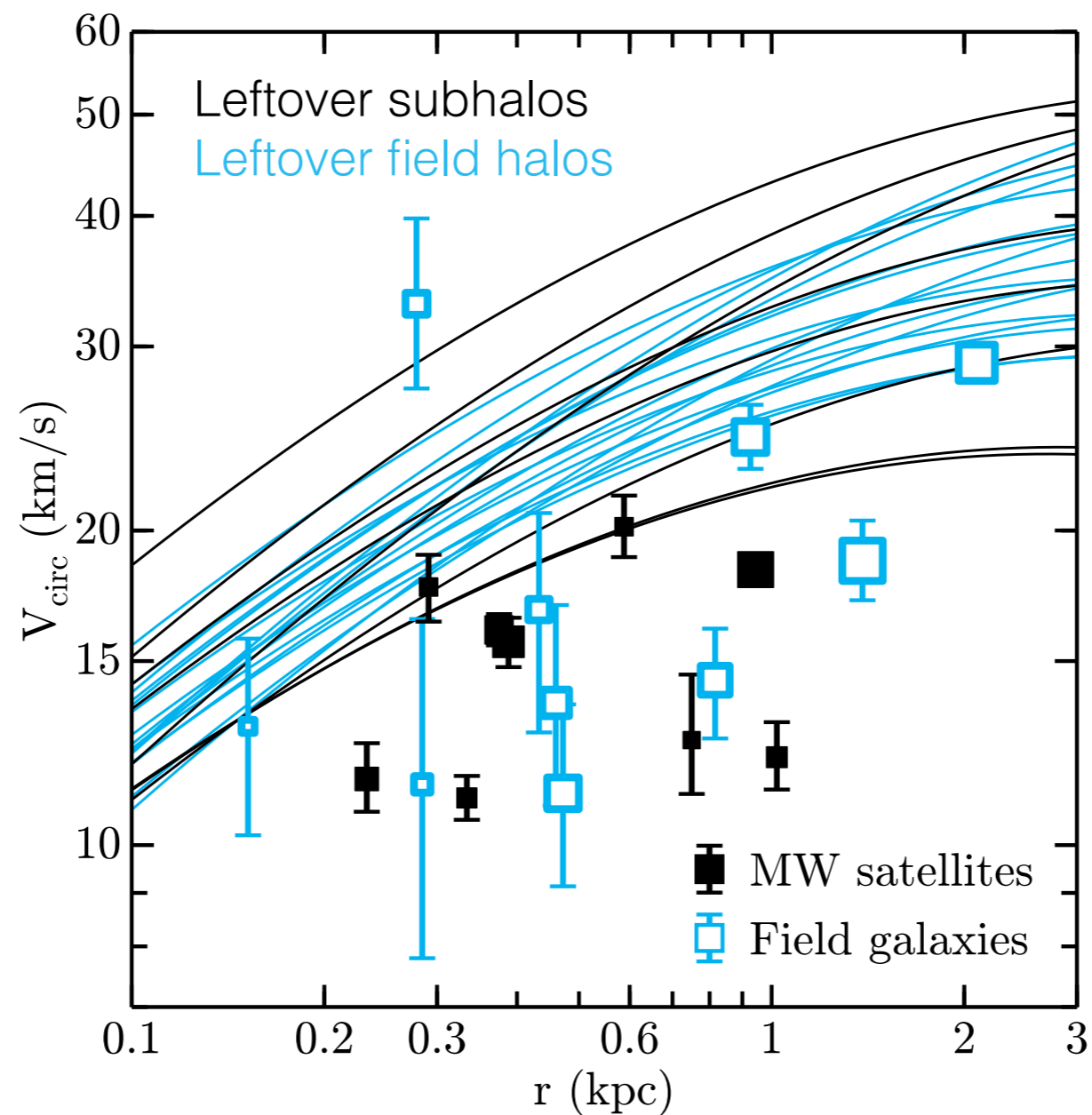
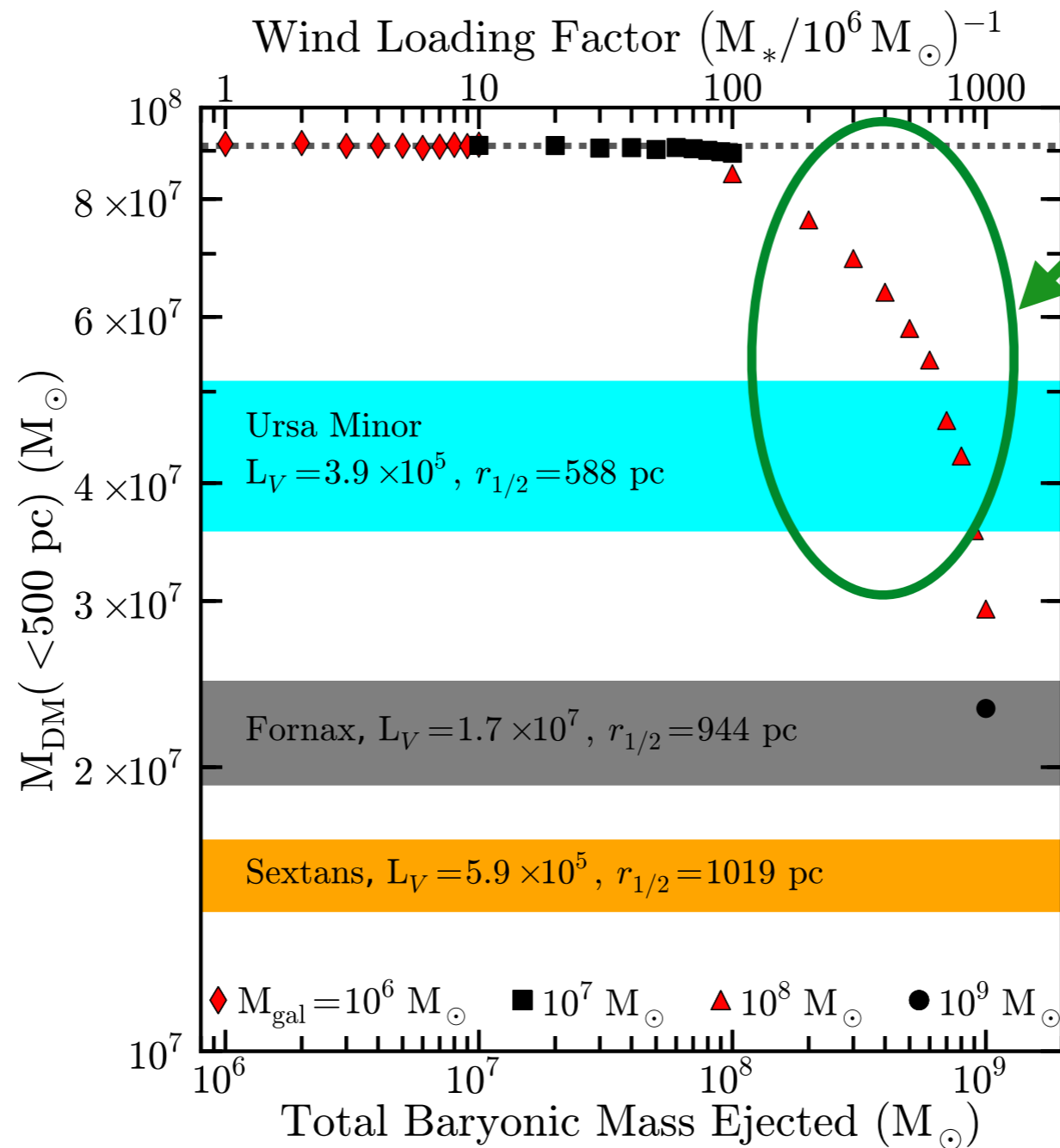


1) We need to disentangle various baryonic processes (e.g. feedback and ram pressure stripping)



Leftover subhalos might be explained by, e.g., ram pressure stripping, but these arguments don't hold far from the MW/M31

2) Simulations and analytical arguments predict that dwarf galaxy outflows must be large to form cores

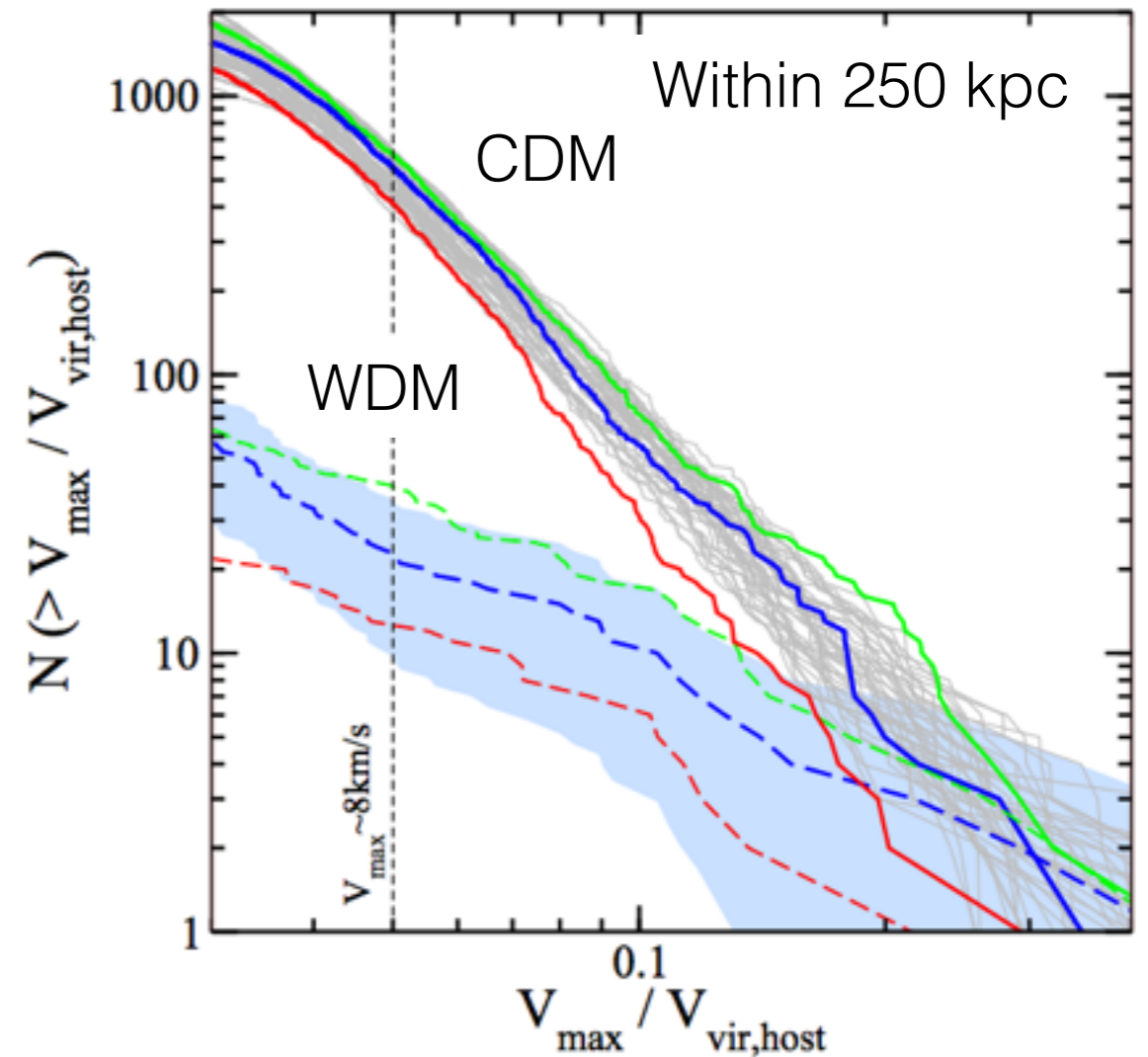
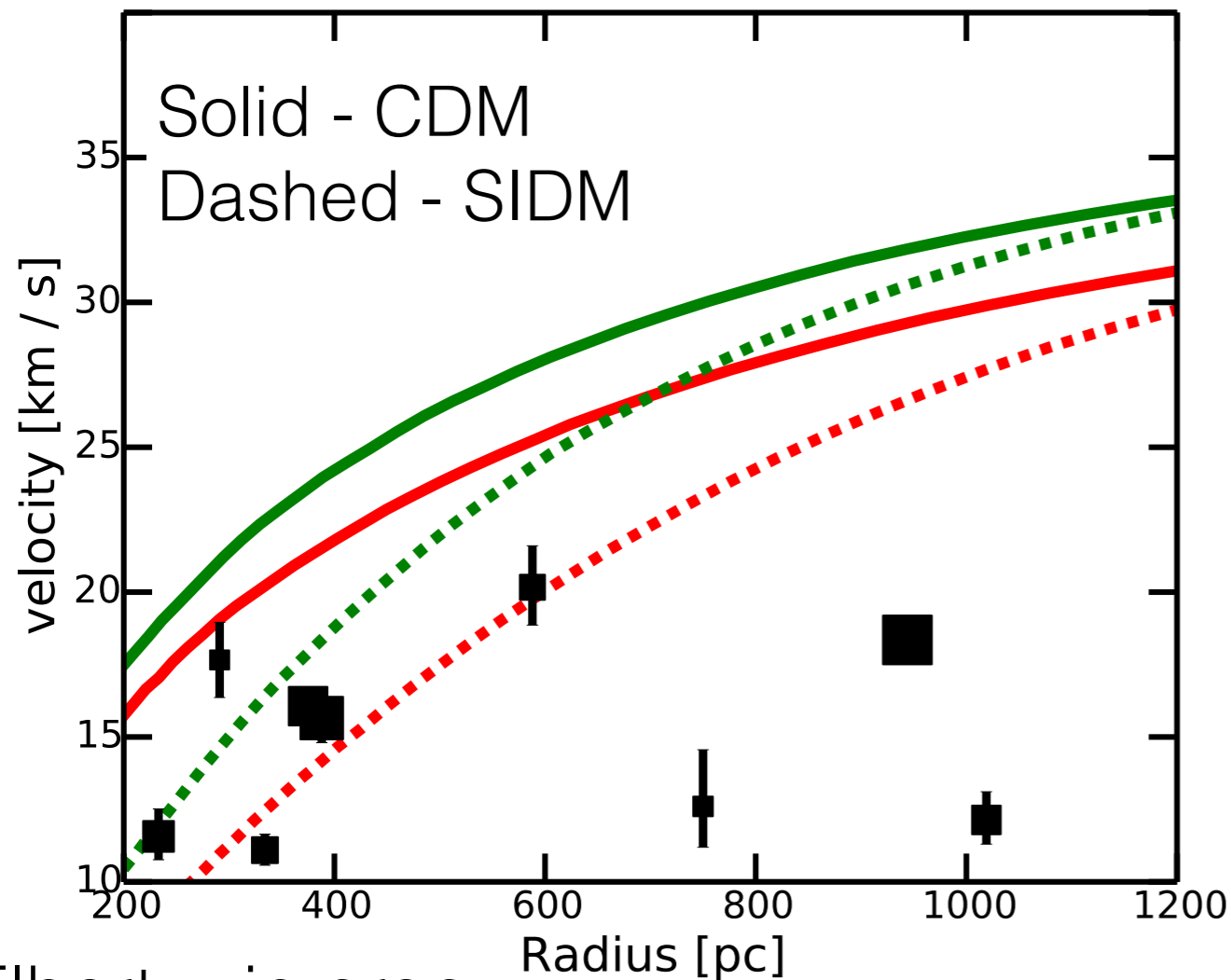


Need blowouts
of $\sim 10^8 M_{\text{sun}}$

Can we see
these?

Are there observational signatures of these outflows (e.g. from simulations that form cores), and can we find them?

3) Different types of dark matter can alter density profiles and halo counts as strongly as baryons



Elbert+, in prep

Horiuchi+ 2014

It's important that we get a better handle on the nature of dark matter, e.g. by looking at the 3.5 keV line in M31 with Astro-H

- 1) Disentangle various baryonic processes, e.g. by studying galaxies unaffected by environment
- 2) Can we find observational signatures of outflows, as predicted by simulations that form cores in dwarf galaxies?

LSST + a thirty meter class telescope

- 3) How much can we trust our model for dark matter?
Variations on the CDM model can have drastic consequences for DM dominated objects.

Astro-H, ...