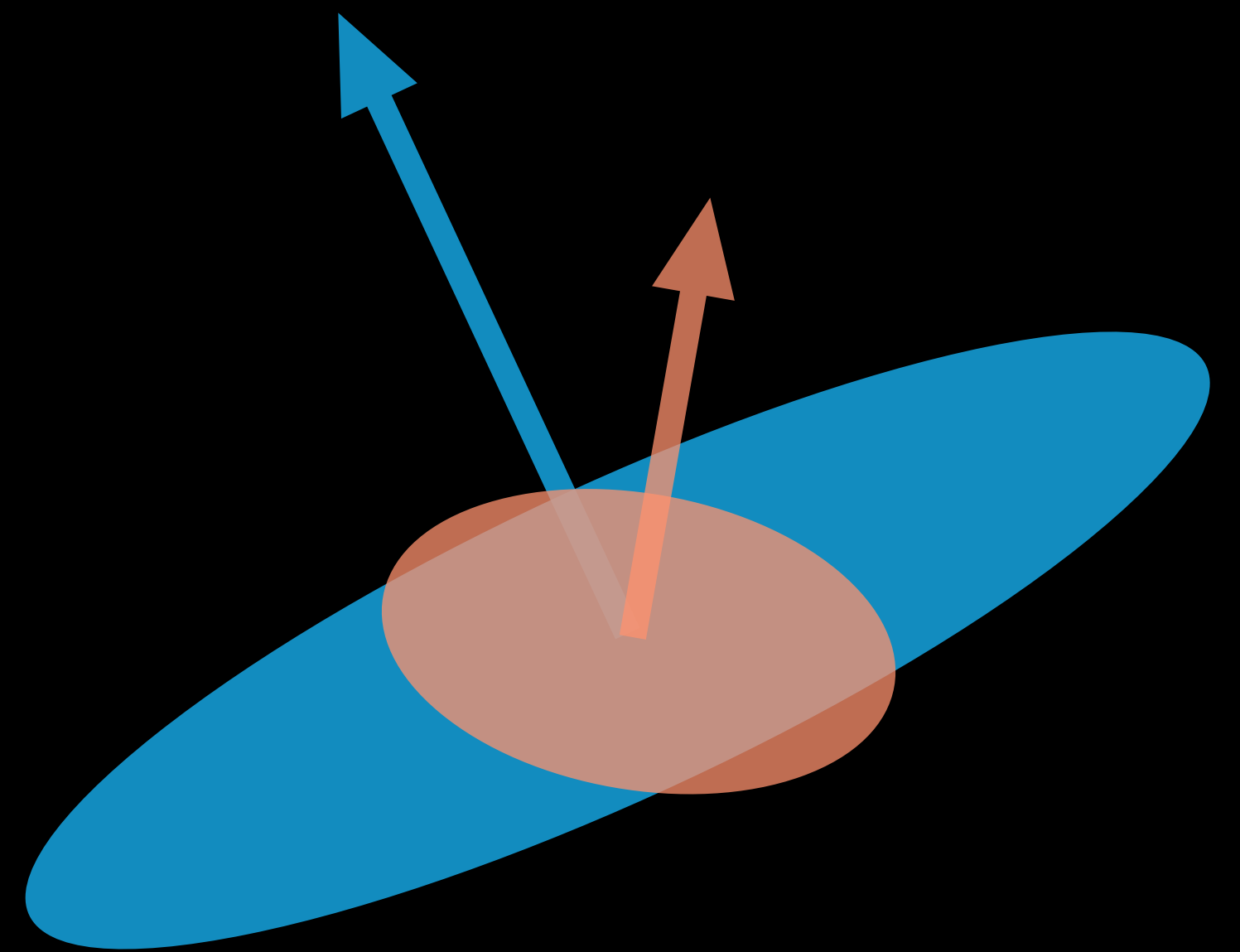


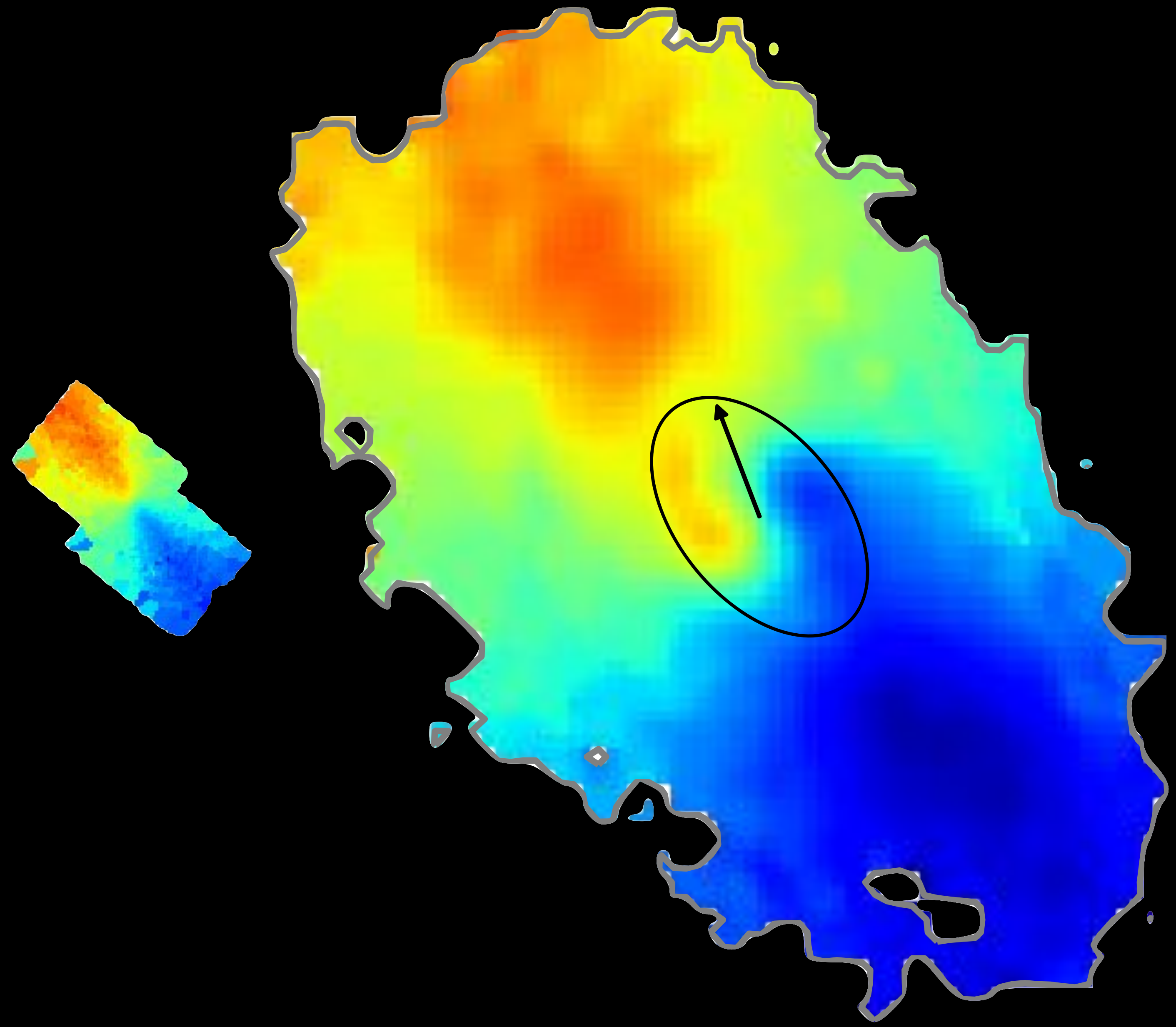


Astronomy and Space Science

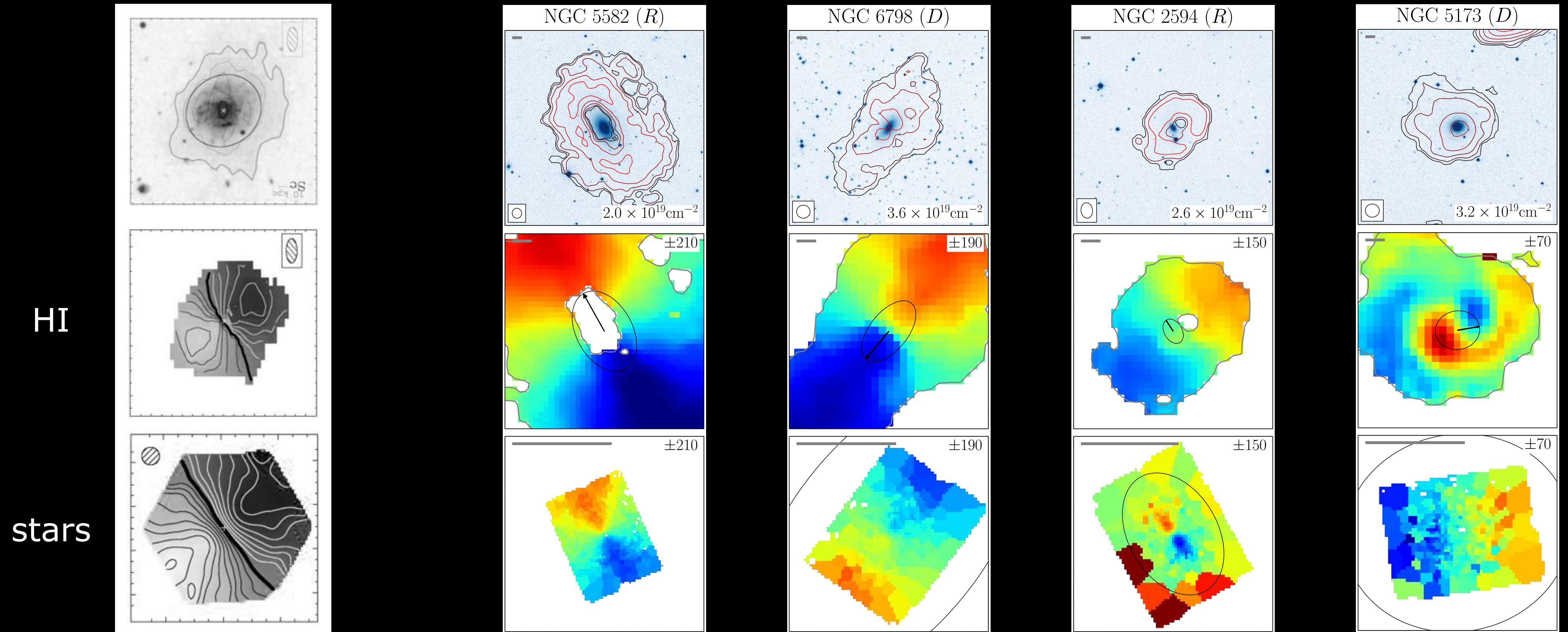
Kinematical misalignments in galaxies

Paolo Serra



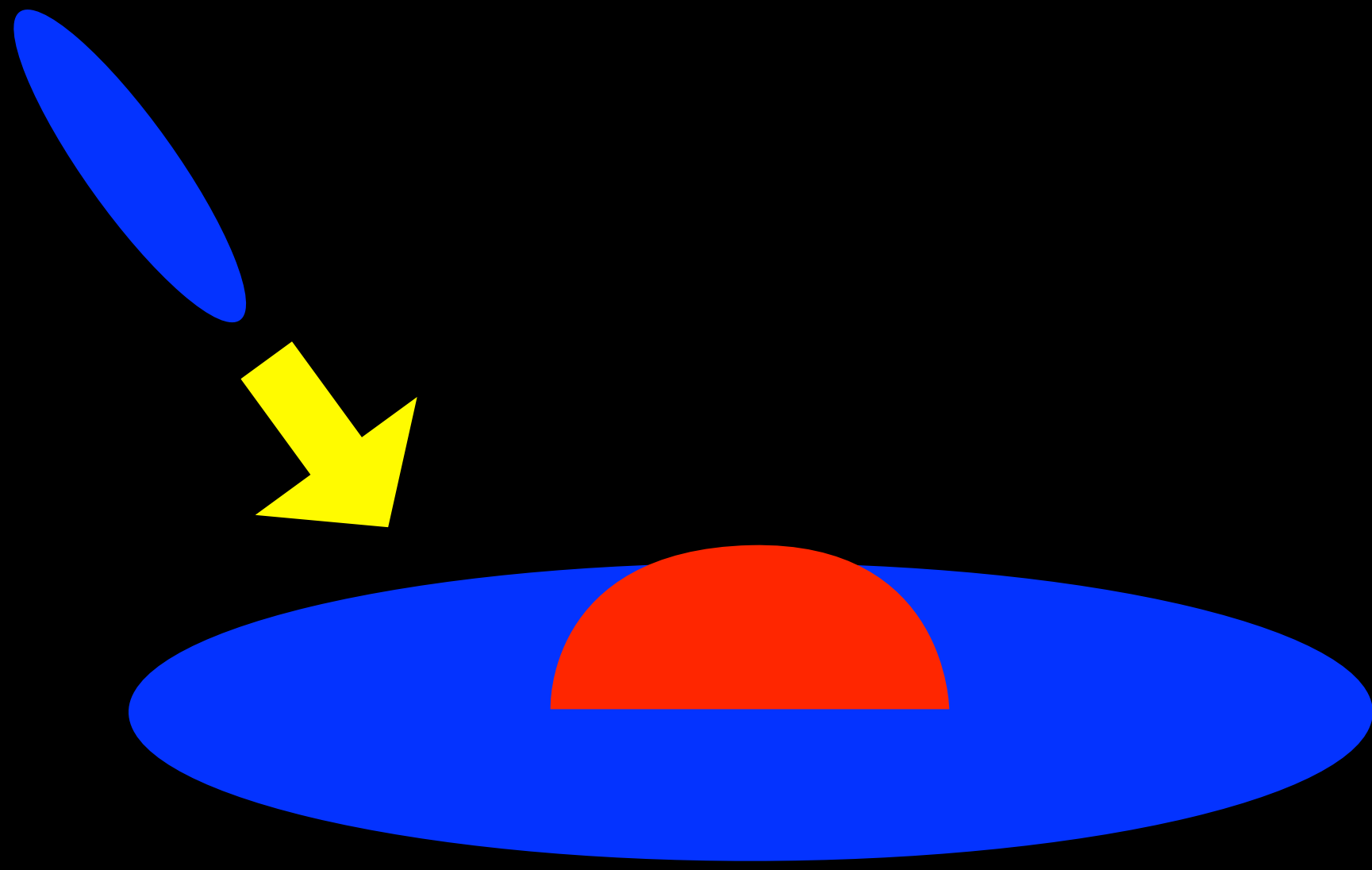


HI - stars kinematic misalignments

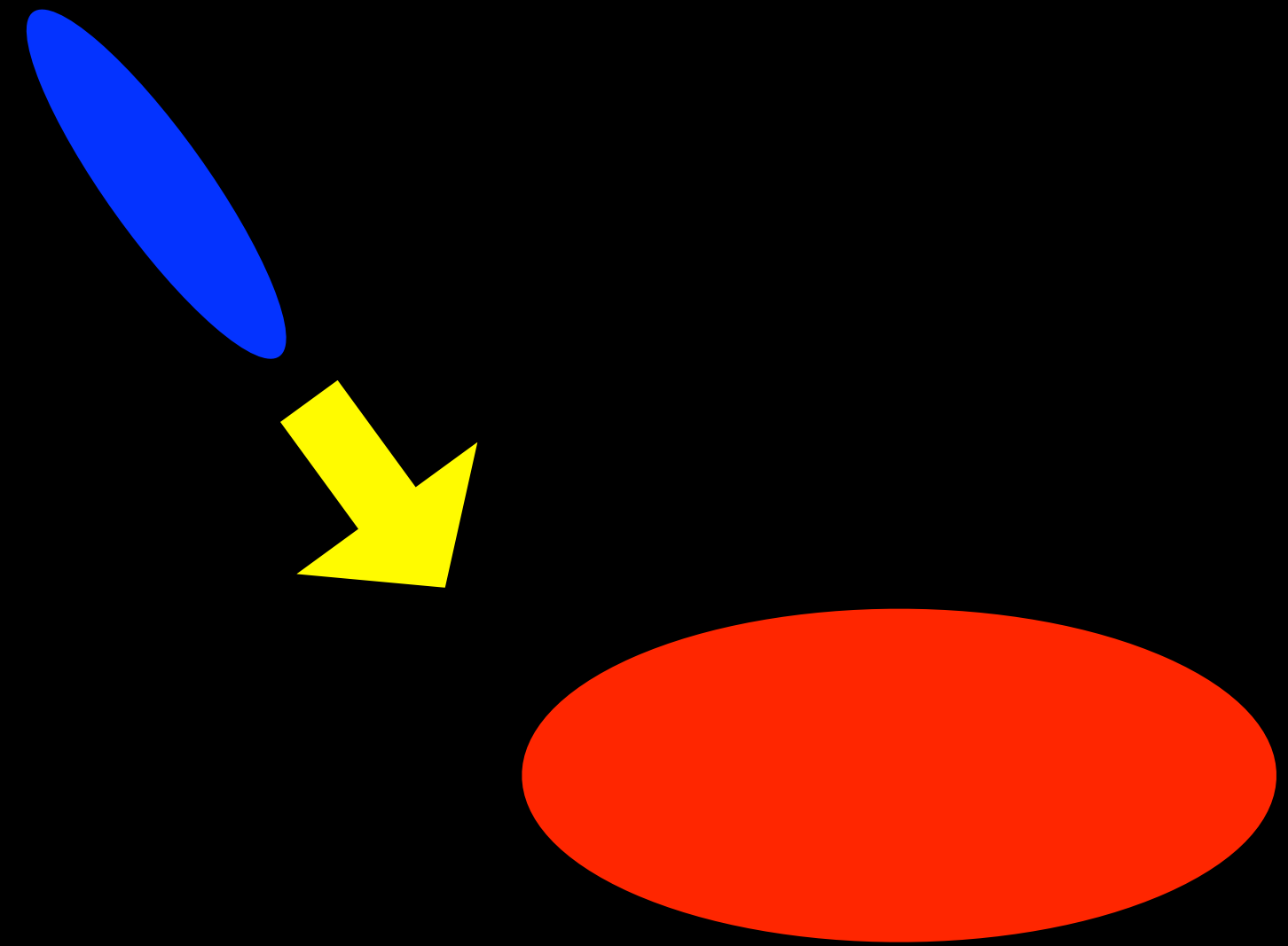


spirals (Martinsson et al. 2016)

ellipticals/lenticulars (Serra et al. 2014)



satellite accretion
by a spiral



satellite accretion
by an E/S0

EAGLE simulations

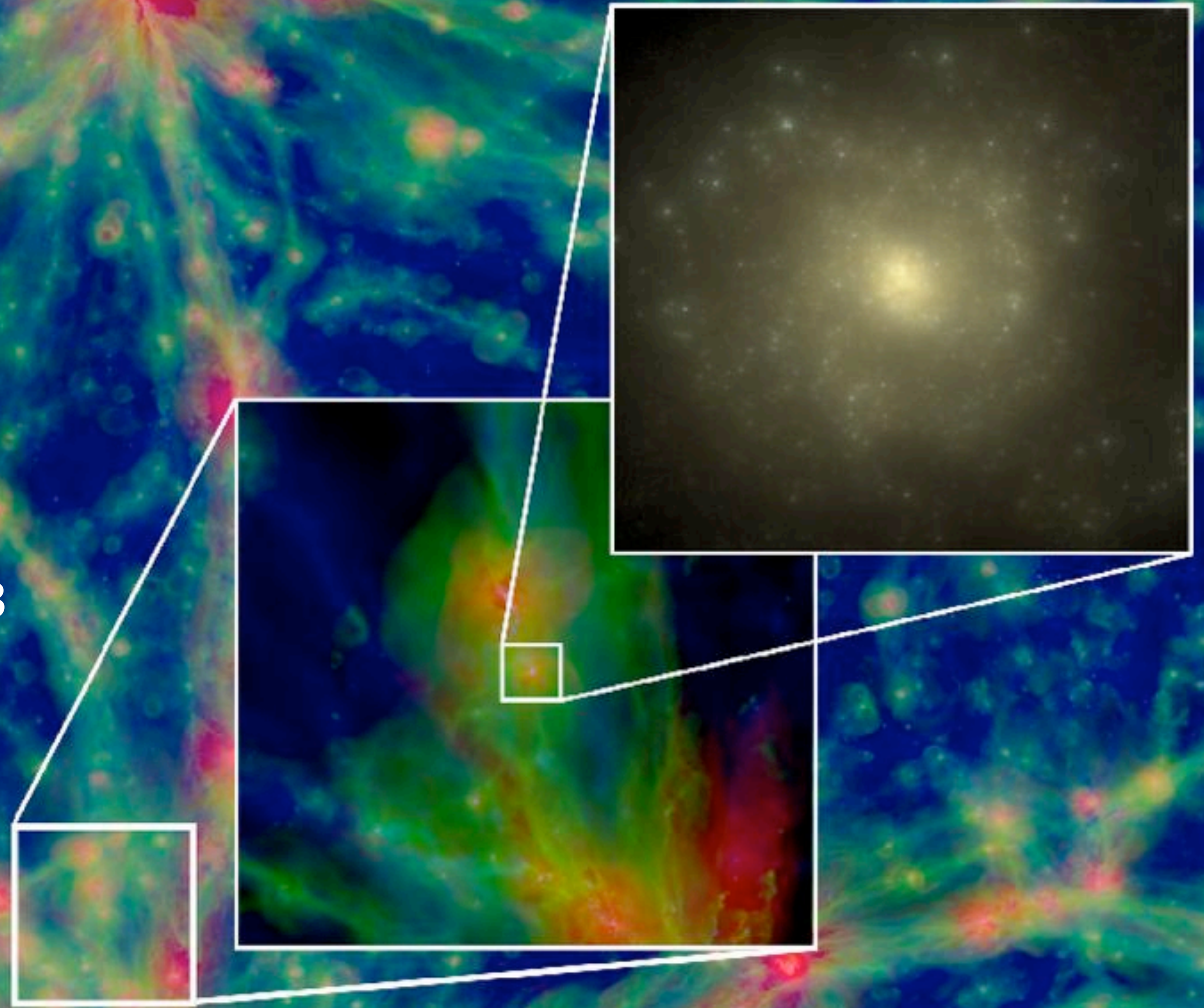
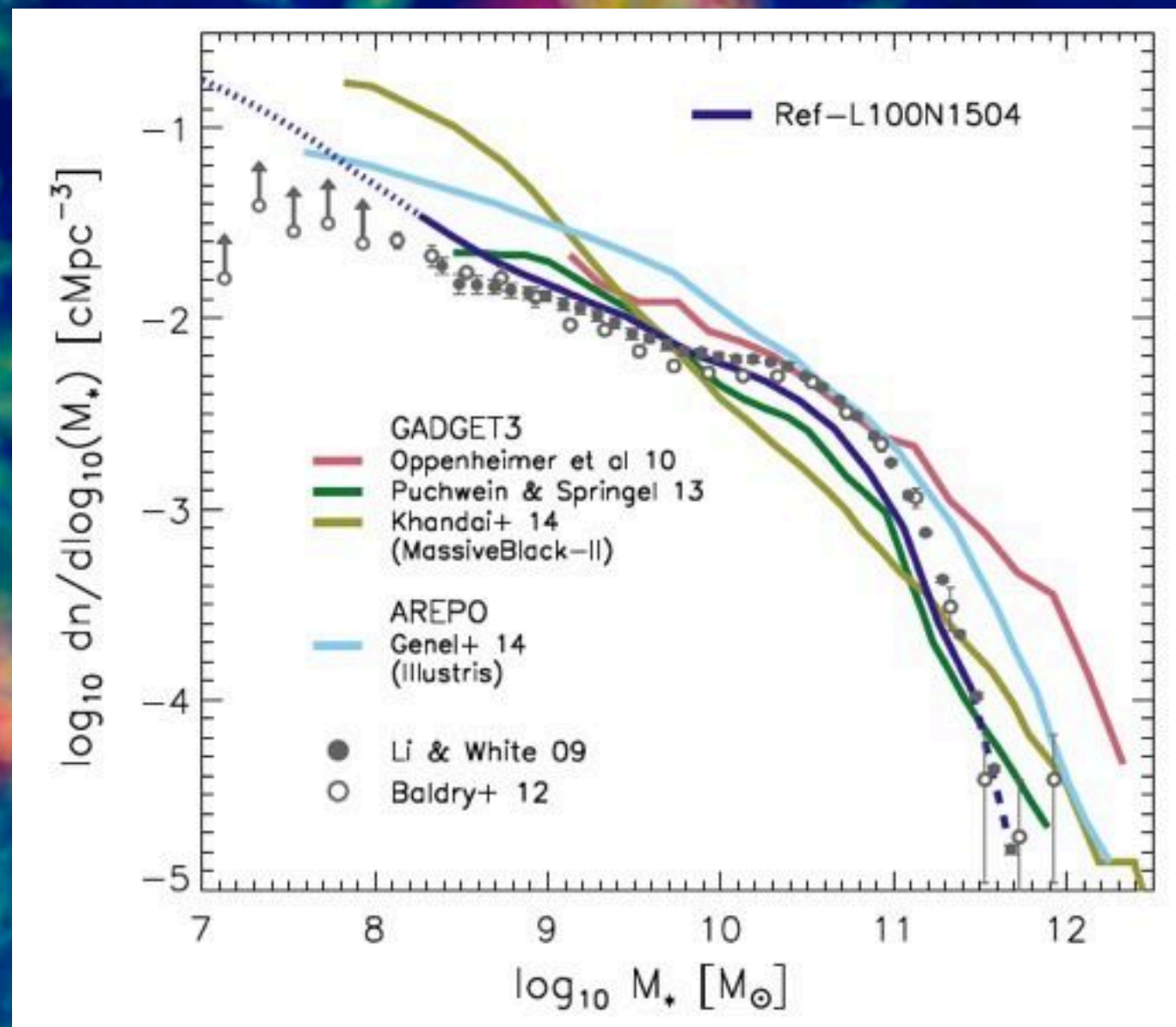
Schaye et al. (2015)

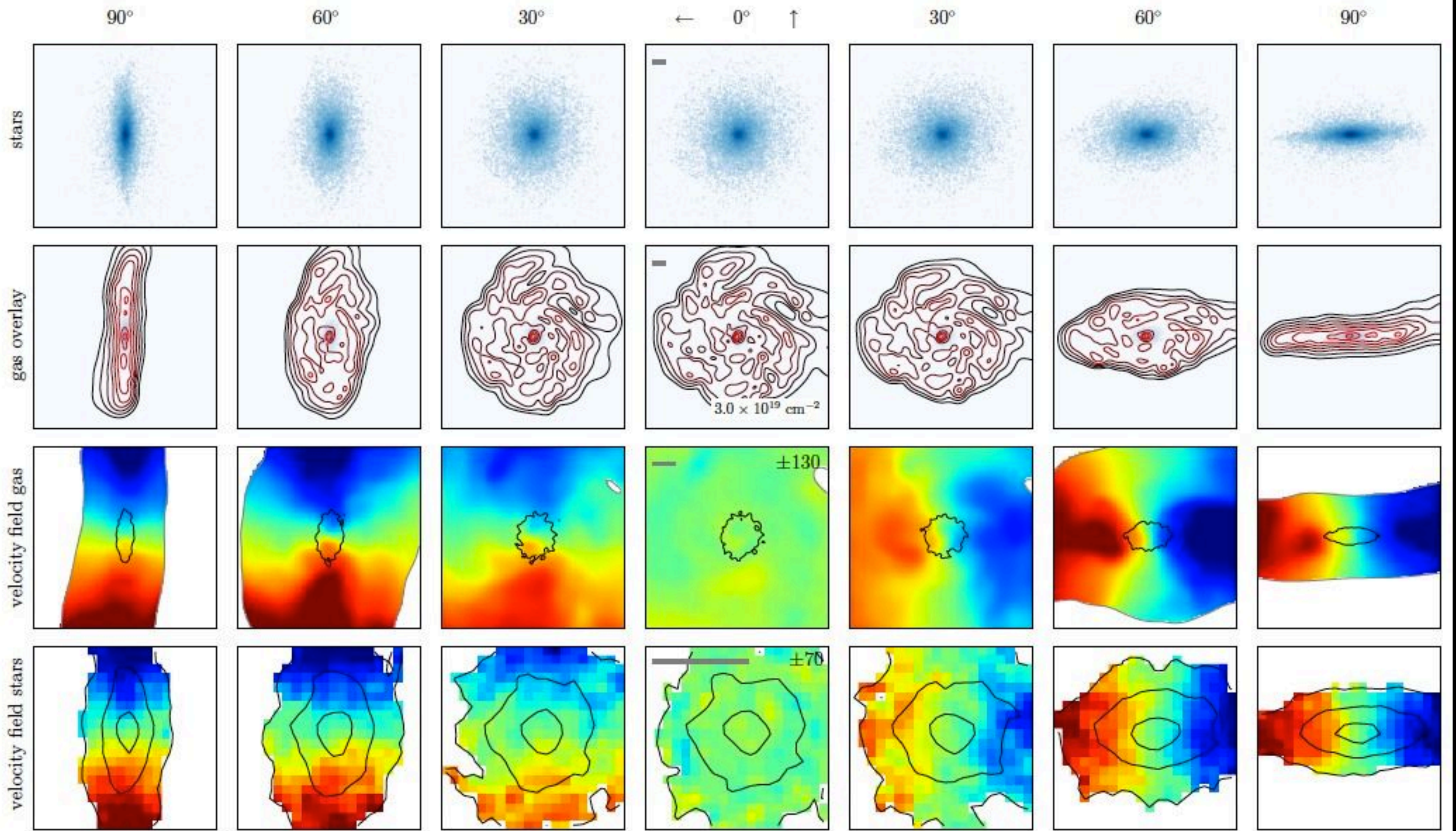
$M_{\text{res}} \sim 10^6 M_{\odot}$, $\epsilon \sim 0.7$ kpc

100 Mpc volume

~ 3500 galaxies with $M_{\star} > 10^{10} M_{\odot}$

environment from voids to \sim Coma/3

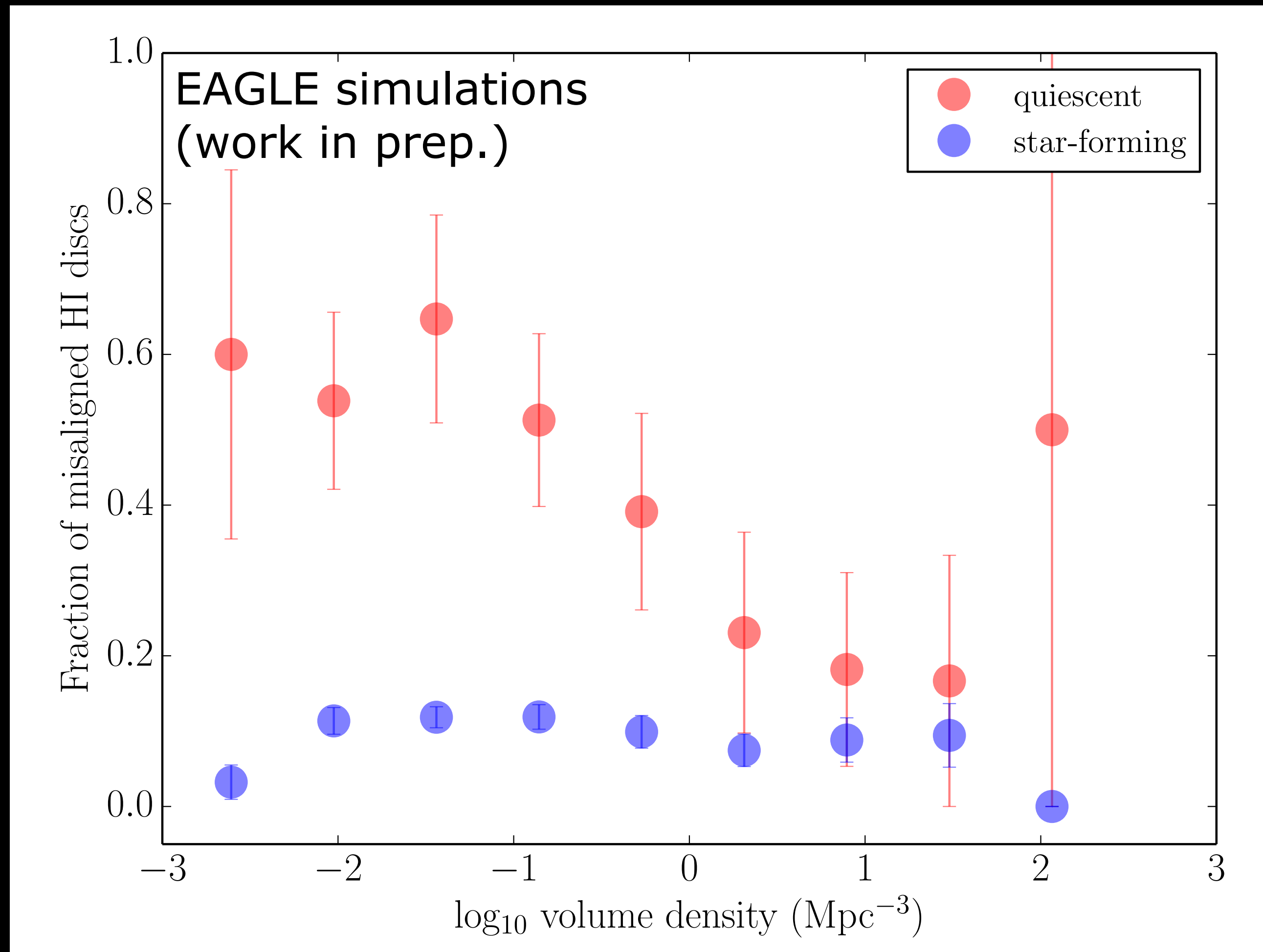




HI-stars misaligned fraction

	<i>observed</i>	<i>simulated (EAGLE)</i>
spirals (= star forming)	10%	11%
E/S0's (= quiescent)	55%	49%

HI - stars kinematical misalignments as a function of environment



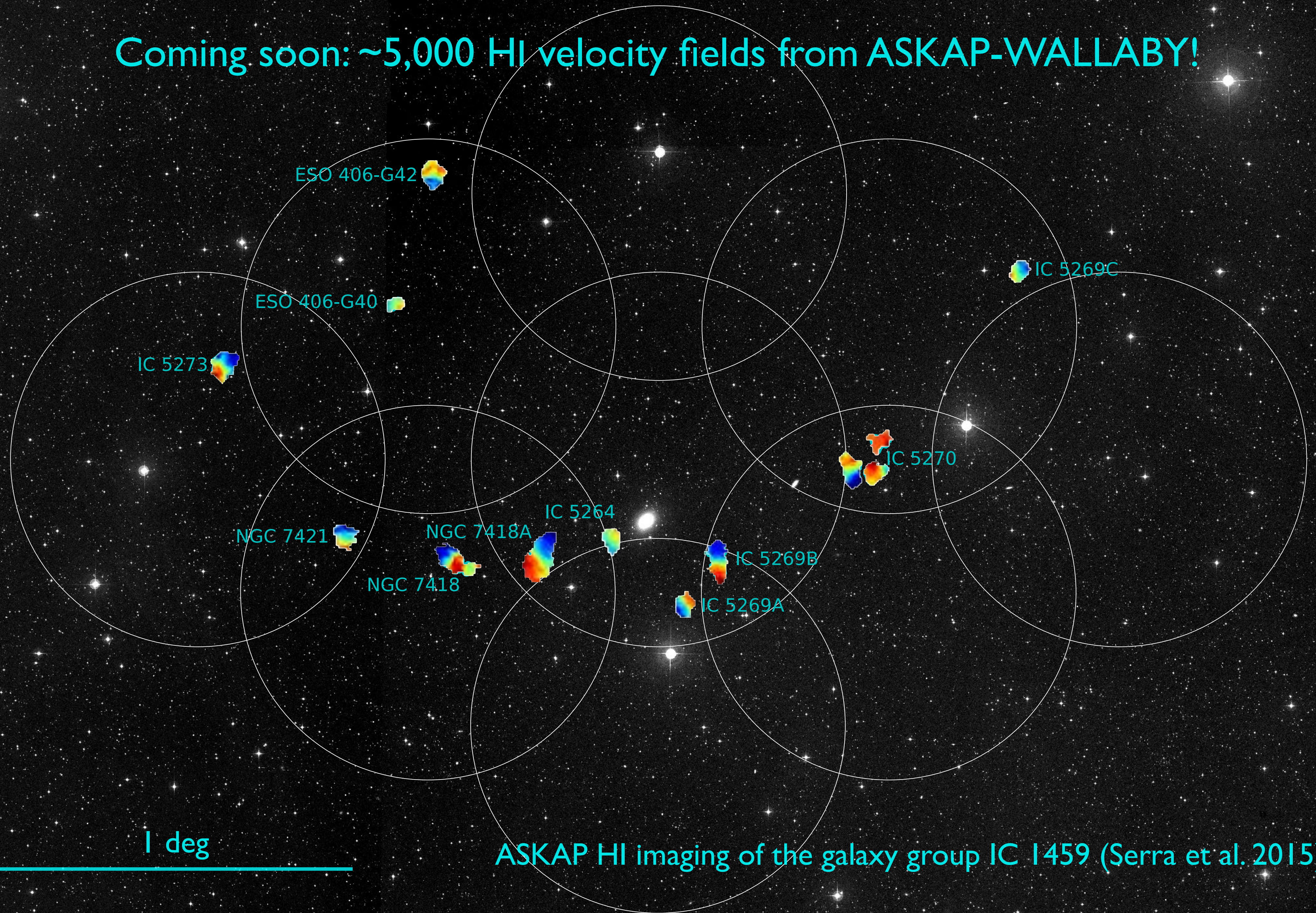
Bryant et al. (2015)

7000



+ CALIFA, MANGA, MUSE, ...

Coming soon: ~5,000 HI velocity fields from ASKAP-WALLABY!



WALLABY

