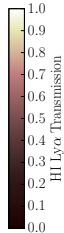
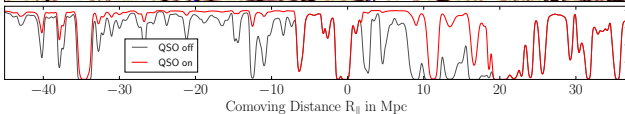
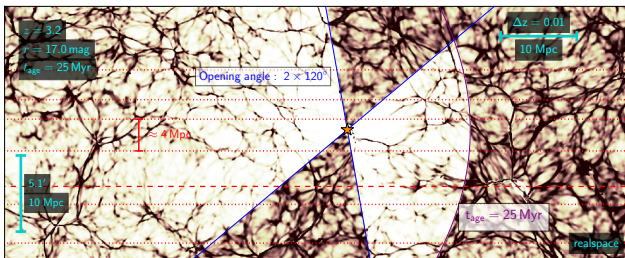
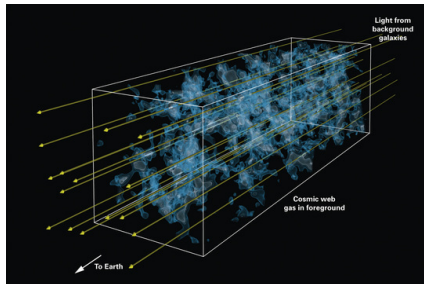
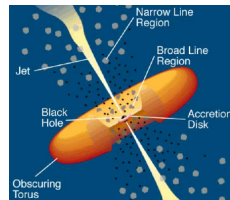


Mapping Quasar Light Echos in Three Dimensions with Ly α Forest Tomography

probe Ly α forest in vicinity of f/g QSO with many b/g sightlines
 requires faint ≈ 24.8 mag galaxies as background sources



3D map of QSO
 - emission history
 - emission geometry

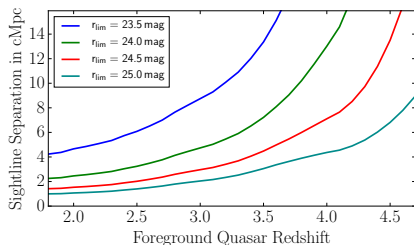
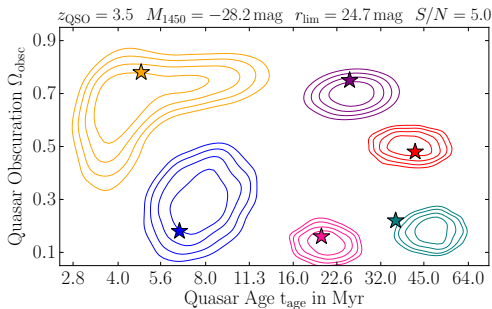


Statistical Framework and Optimal Survey Strategy

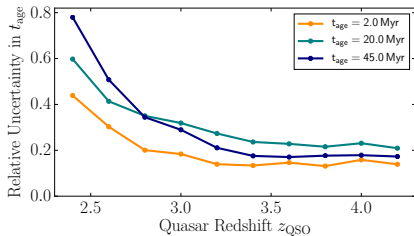
High sightline density at low z

vs.

Strong proximity effect at high z



Fully Bayesian analysis yields joint constraints on t_{age} and Ω_{obsc}



Precision 20% on t_{age} , 10% on Ω_{obsc}
in 10 ks exposures over $15' \times 15'$ FoV

Method works well for $3 < z < 4.5$!