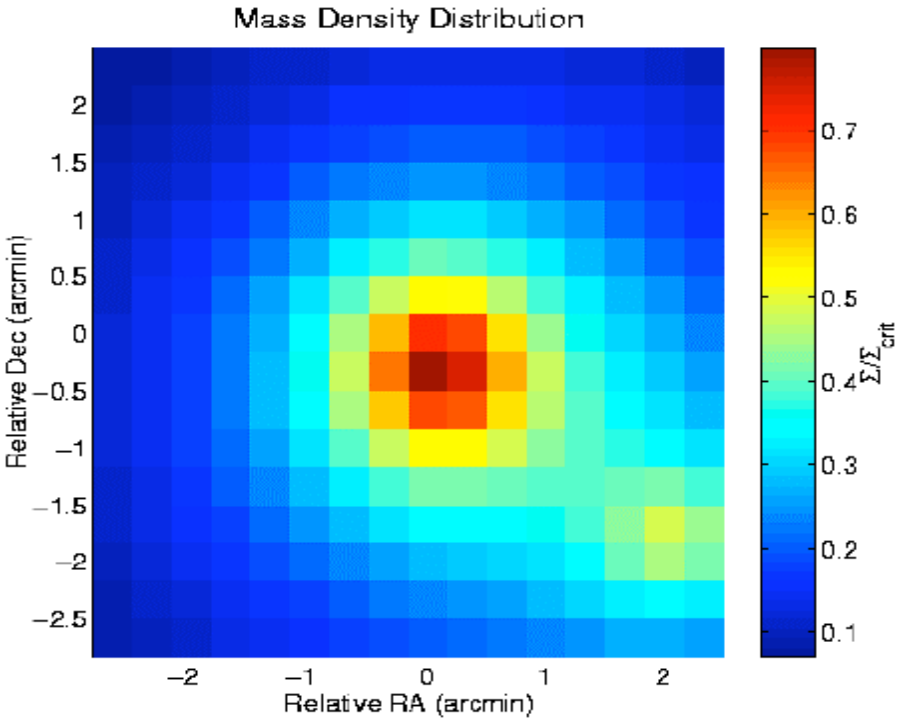
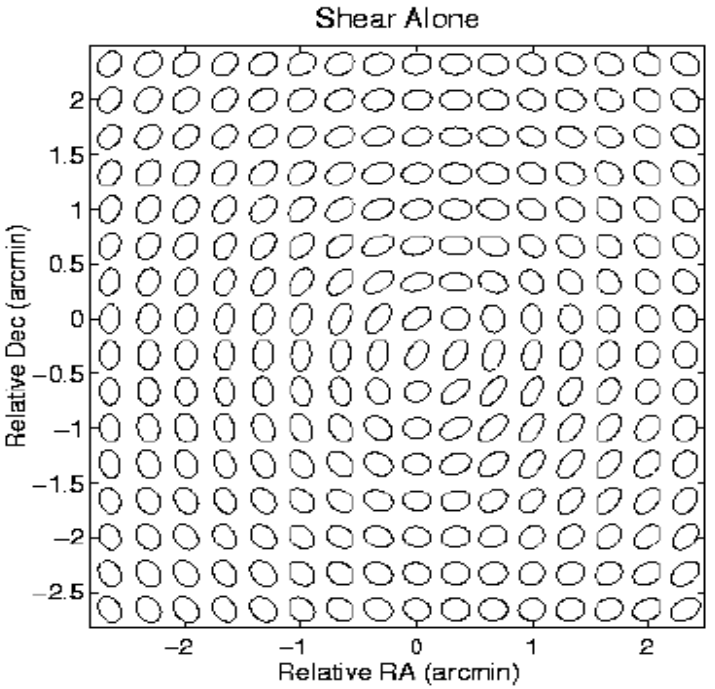
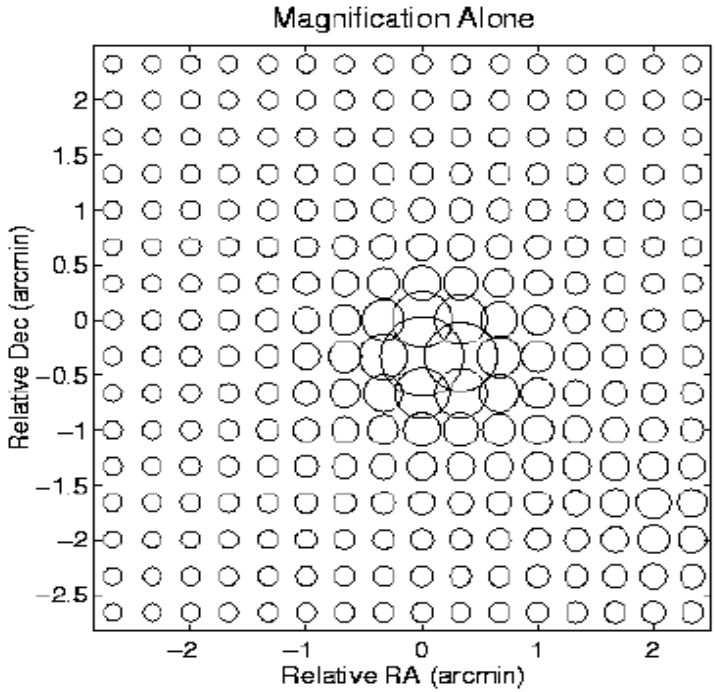
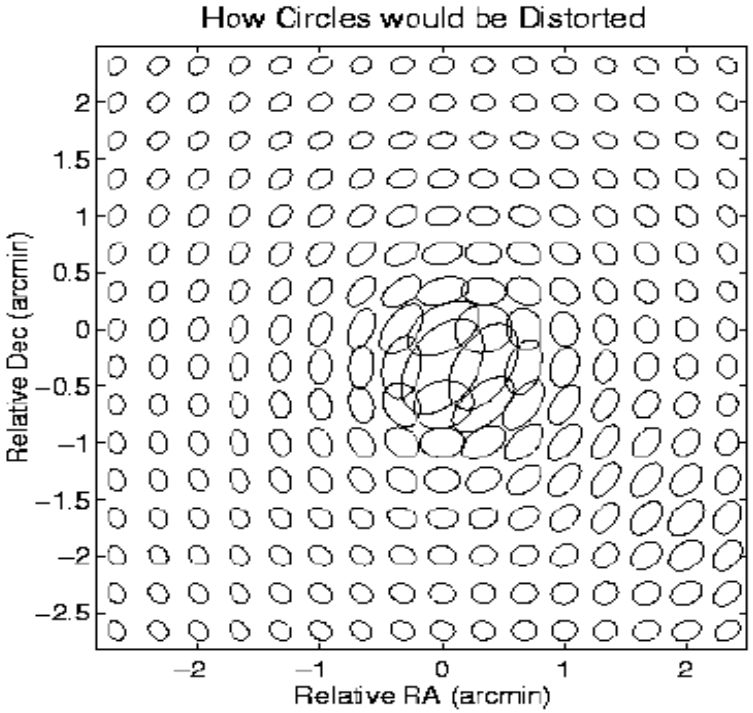

Mass Density Distribution
Relative Dec (arcmin)
Relative RA (arcmin)
Σ/Σ_{crit}


Shear Alone
Relative Dec (arcmin)
Relative RA (arcmin)


Magnification Alone
Relative Dec (arcmin)
Relative RA (arcmin)


How Circles would be Distorted
Relative Dec (arcmin)
Relative RA (arcmin)

Ray Tracing - Multiple Born Approximations.

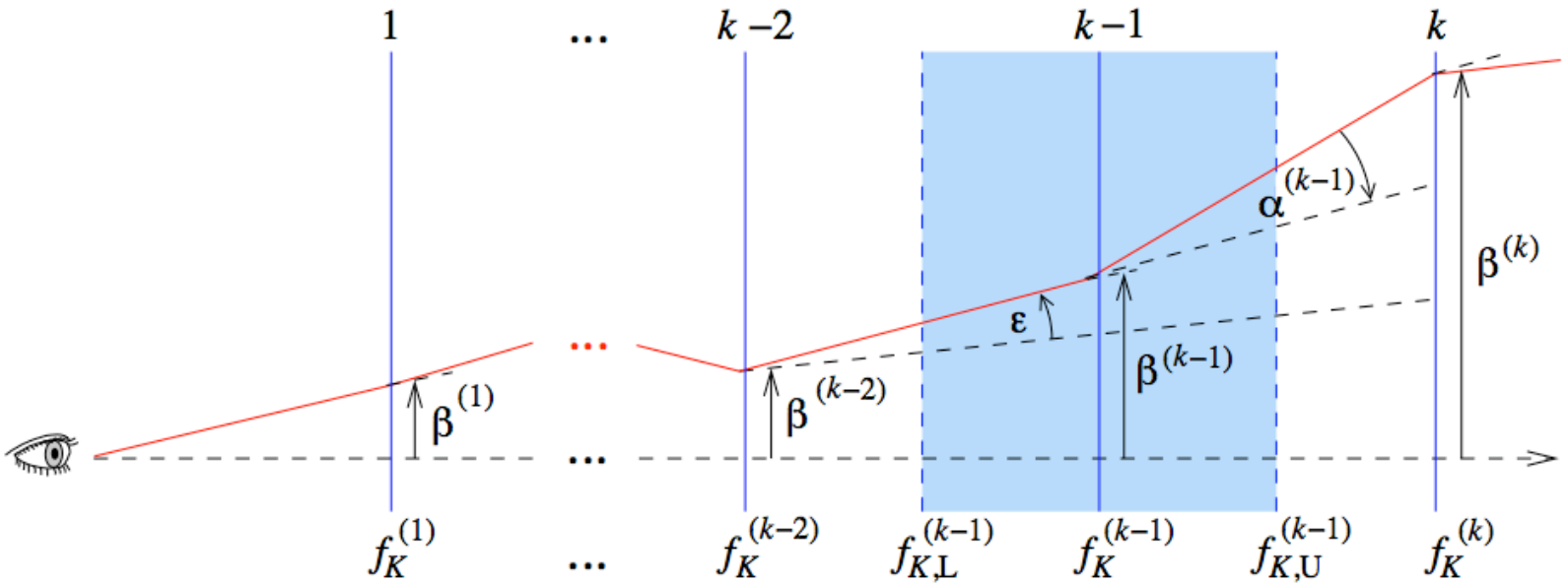
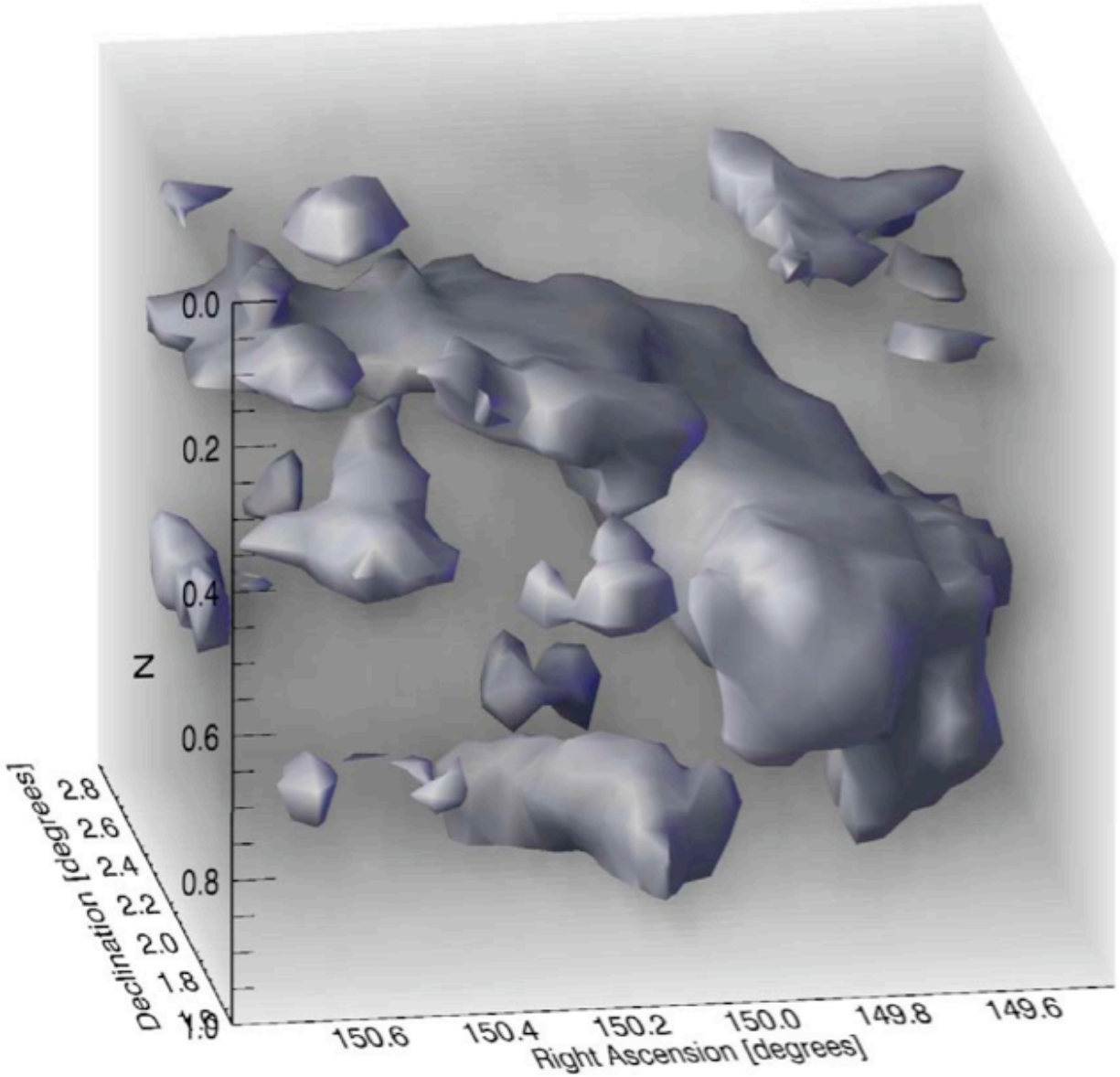


Fig. 1. Schematic view of the observer's backward light cone in the multiple-lens-plane approximation. A light ray (red line) experiences a deflection only when passing through a lens plane (solid blue lines). The deflection angle $\boldsymbol{\alpha}^{(k-1)}$ of a ray passing through the lens plane at distance $f_K^{(k-1)}$ from the observer is obtained from the matter distribution between $f_{K,\mathrm{U}}^{(k-1)}$ and $f_{K,\mathrm{L}}^{(k-1)}$ projected onto the plane. Using the deflection angle $\boldsymbol{\alpha}^{(k-1)}$ of the light ray at the previous lens plane and the ray's angular positions $\boldsymbol{\beta}^{(k-1)}$ and $\boldsymbol{\beta}^{(k-2)}$ on the two previous planes, the angular position $\boldsymbol{\beta}^{(k)}$ on the current plane can be computed.



3D reconstruction of the dark matter distribution. The three axes correspond to Right Ascension, Declination, and redshift: with distance from the Earth increasing towards the bottom. The redshift scale is highly compressed, and the survey volume is really an elongated cone. An isodensity contour has been drawn at a level of 1.6×1012 Msun within a circle of radius 700 kpc and Δz=0.05. This was chosen arbitrarily to highlight the filamentary structure. The faint background shows the full distribution, with the level of the grey scale corresponding to the local density