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Properties of Voids and Void Galaxies from SDSS DR7

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Summary

- Void Catalog (Method/Results)
- Ellipticity (LoS measurement, prolate/oblate, redshift/real space)
- Void Galaxies
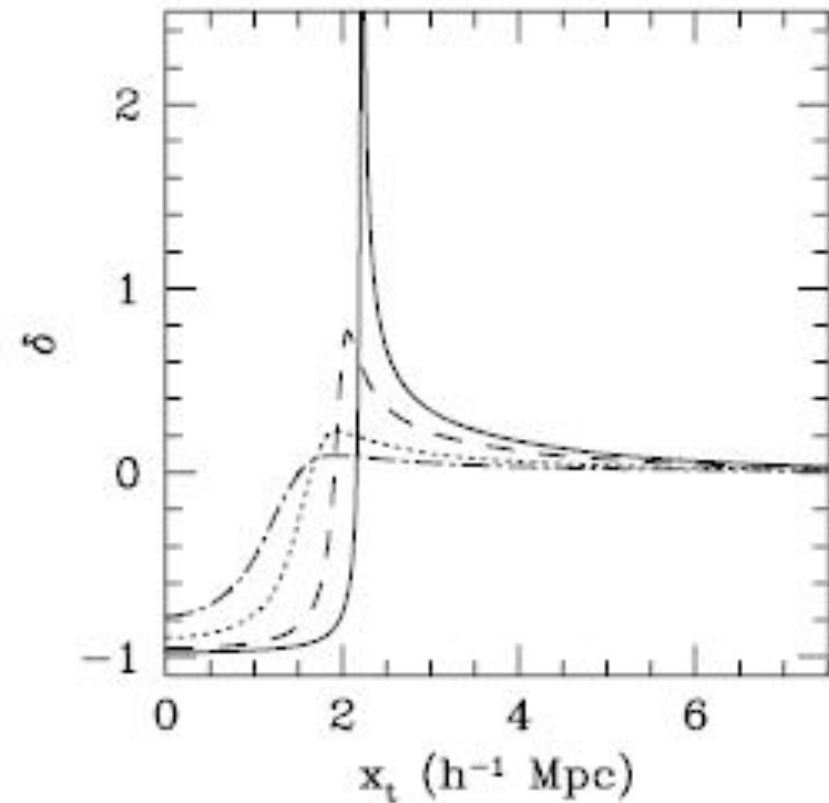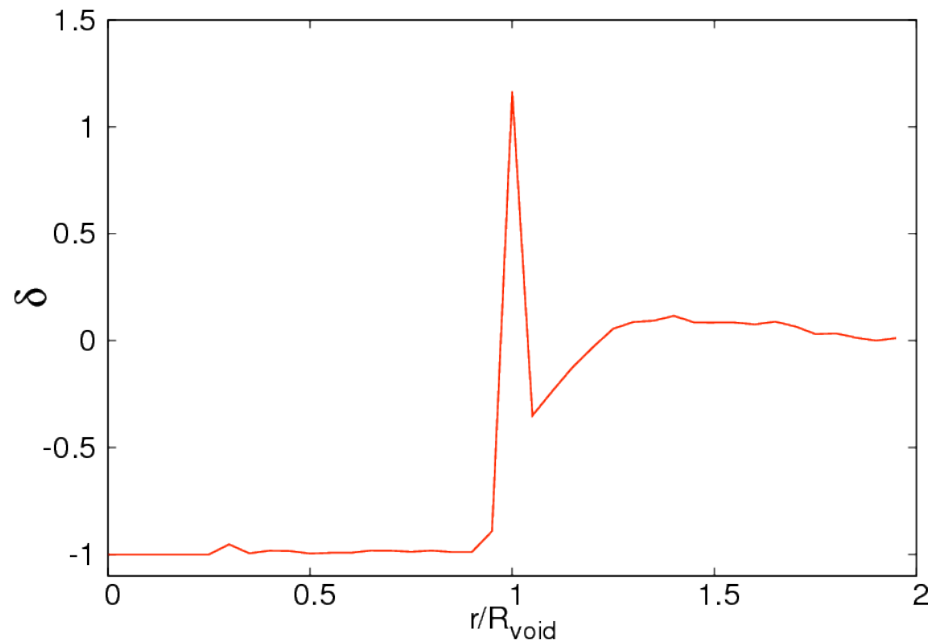 - Luminosity Function
  - Correlation Function

Void Catalog (Pan et al. 2010)

- SDSS DR7
  - 120,606 volume limited galaxies
  - $z < 0.107$
  - $M < -20.1$
- VoidFinder (Hoyle & Vogeley 2002)
  - 1,055 voids ($r > 10$ h^{-1} Mpc)
  - 8,046 void galaxies $M < -20.1$
  - 79,947 void galaxies $m < 17.6$
  - Voids fill 60% of the volume
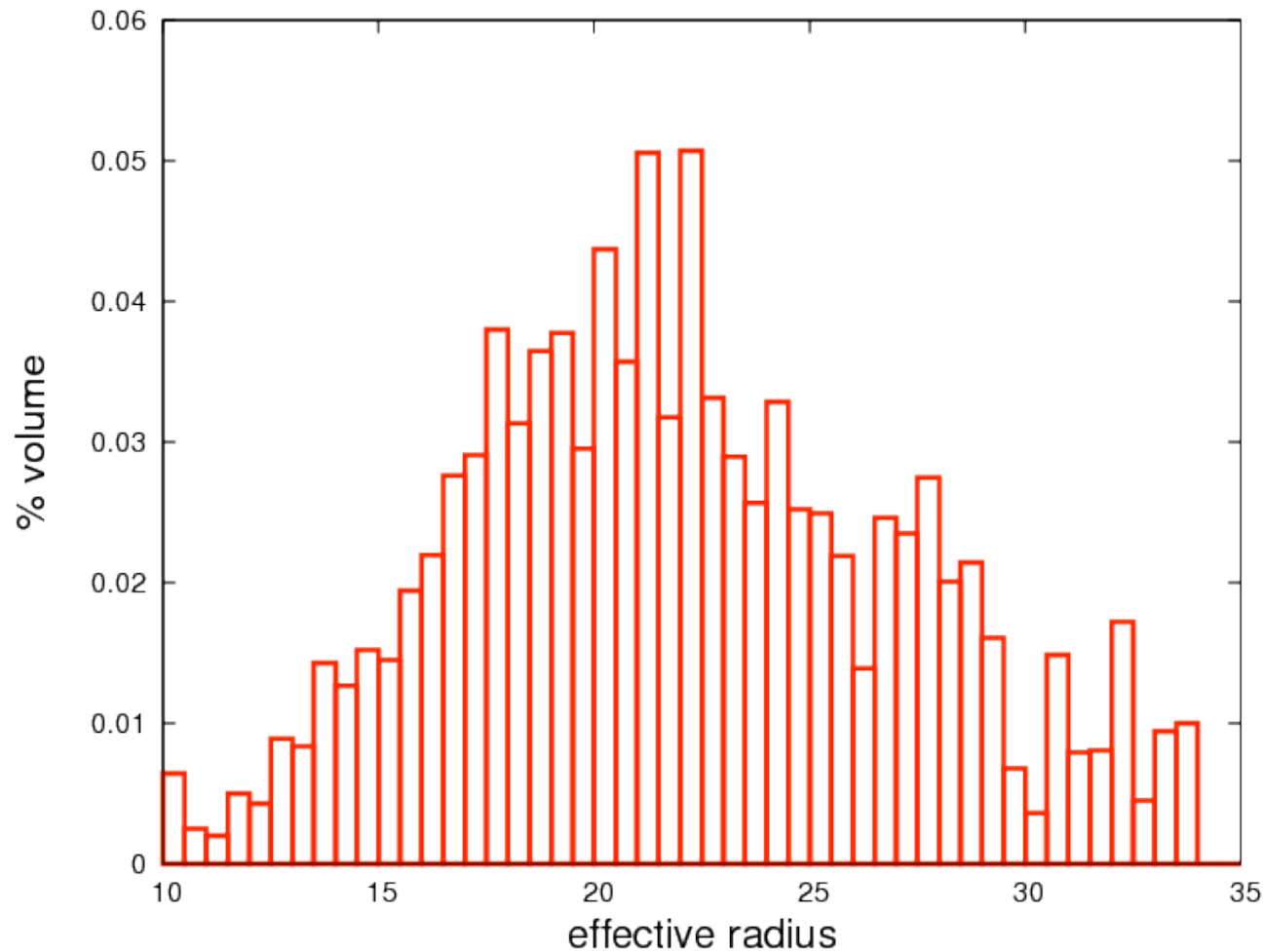
Voids (Slice of Sloan)
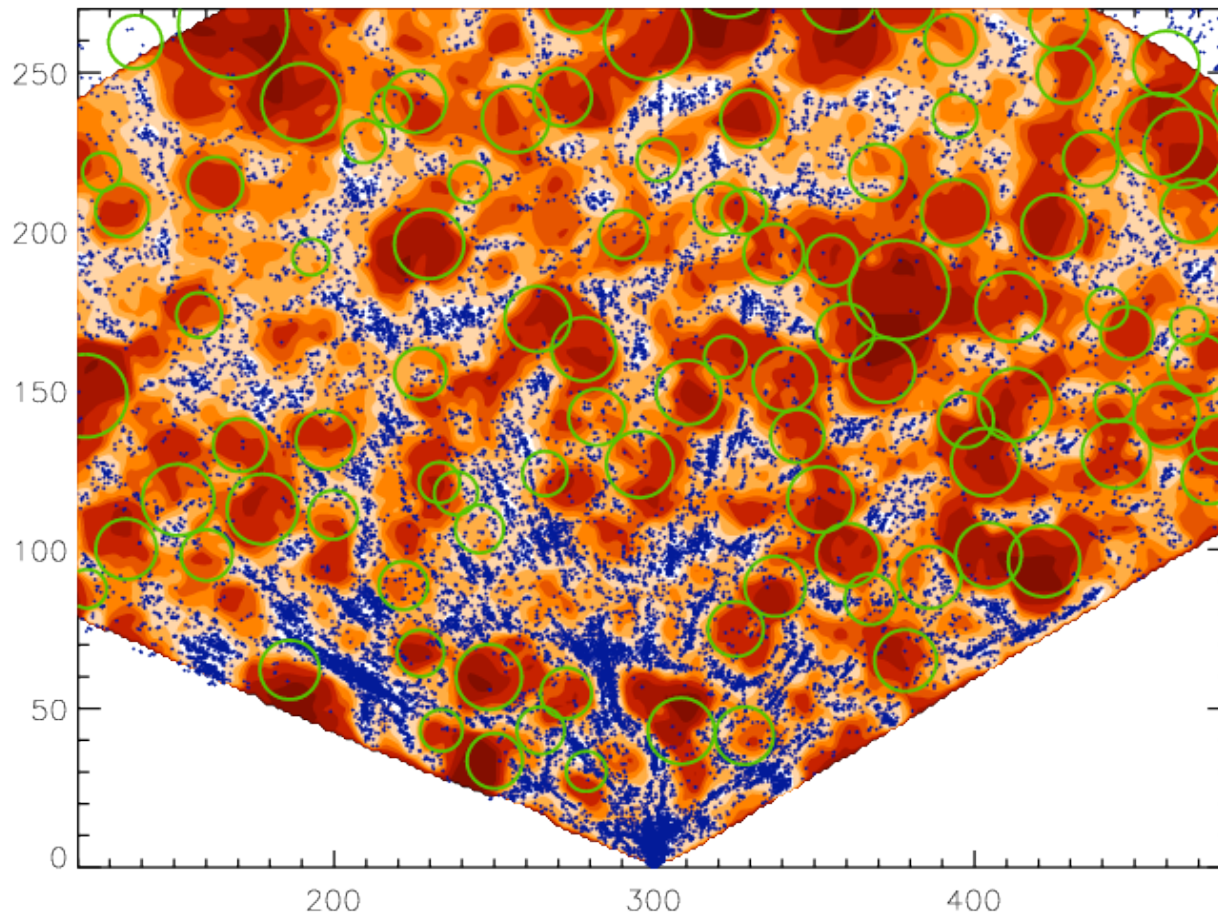
Voids (Dynamically Distinct)

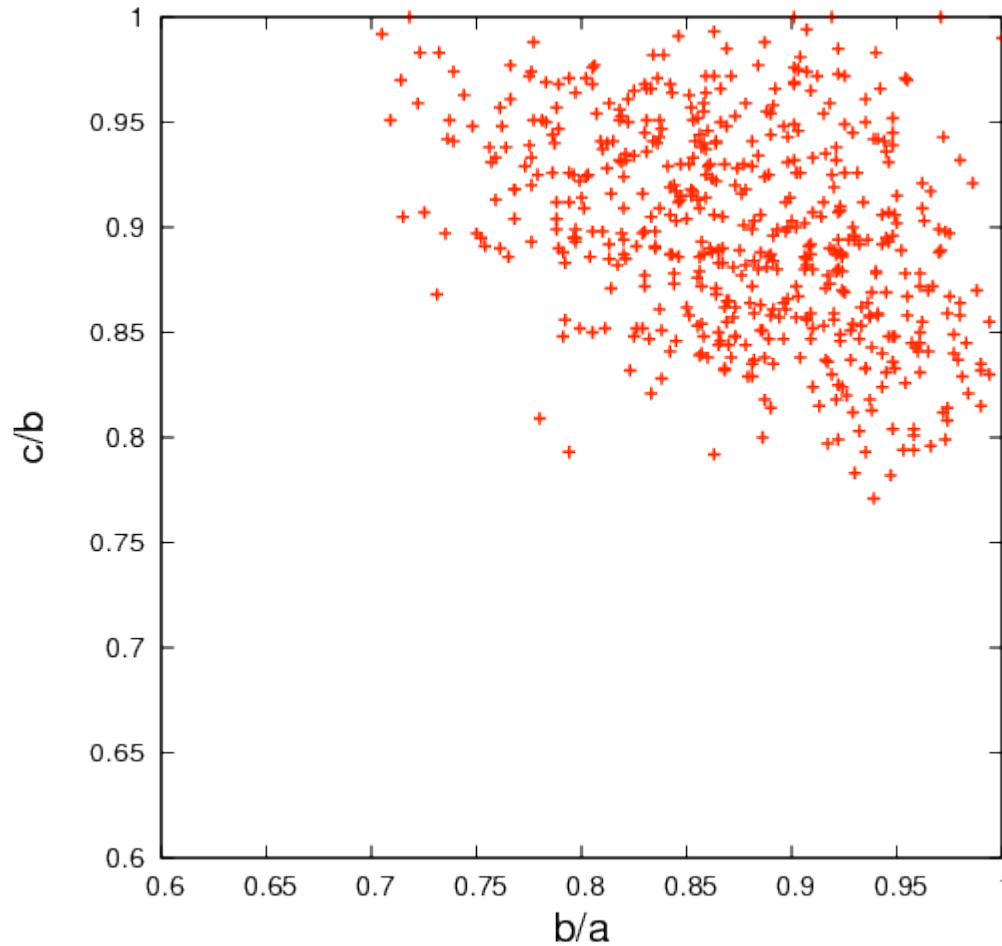Voids are very empty in the centers, as predicted by LCDM models.

Sheth and van de Weygaert 2004

Voids

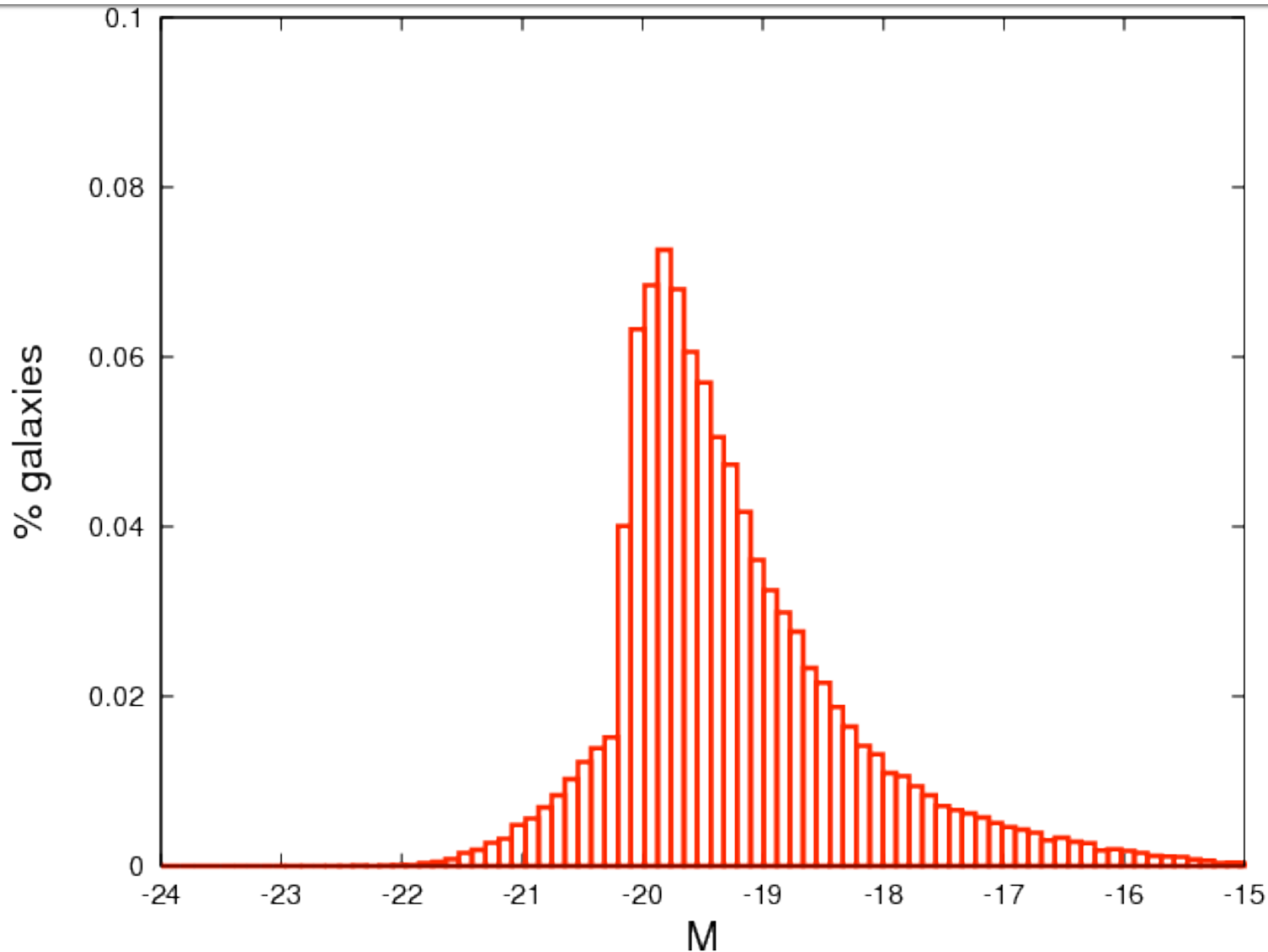Majority of volume filled by median sized (15-25 Mpc) voids.

Void Shapes (Ellipsoids)

Voids are mostly spherical in shape. They are slightly more prolate than oblate.
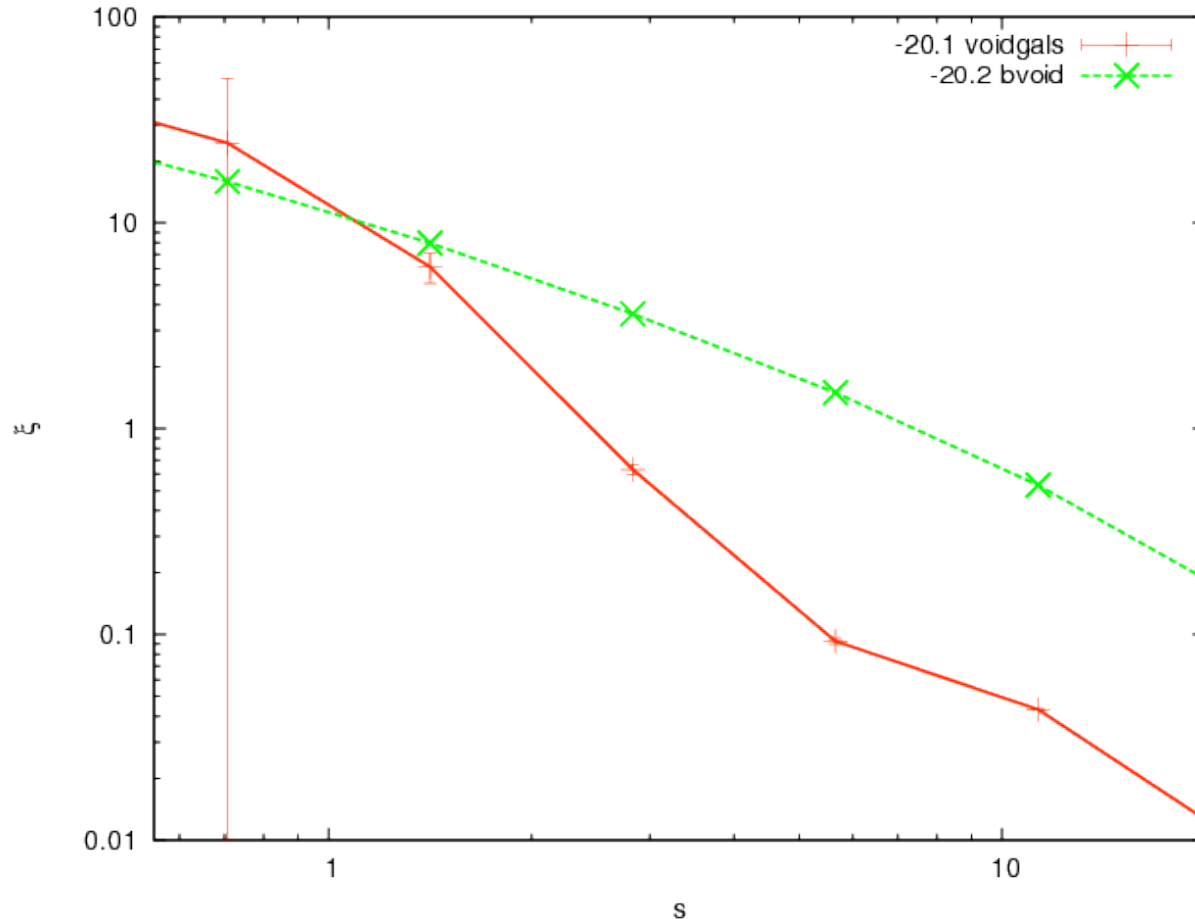
a > b > c

Void Galaxies (Absolute r Mags)

There is a sharp spike at the volume limited galaxy cut. Otherwise, looks just like typical galaxies.

Void Galaxies

Note, galaxies in voids are LESS clustered than typical galaxies.

- Thanks: John Parejko (383.02D), James Waters, Alex Gray

Thank You

- Questions?
- Comments?
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