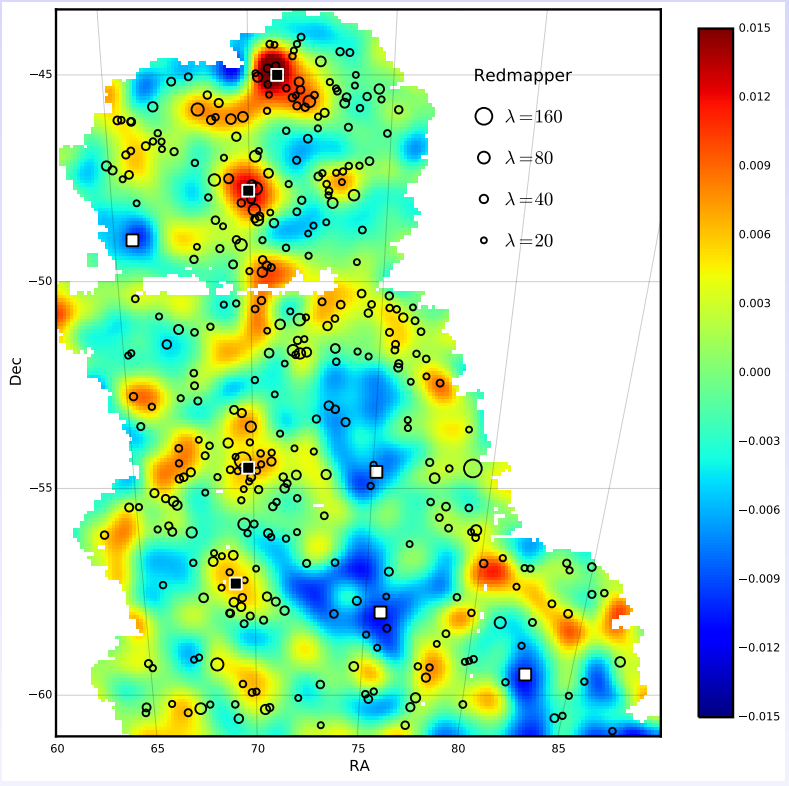
# *Dark Energy Survey (DES)*

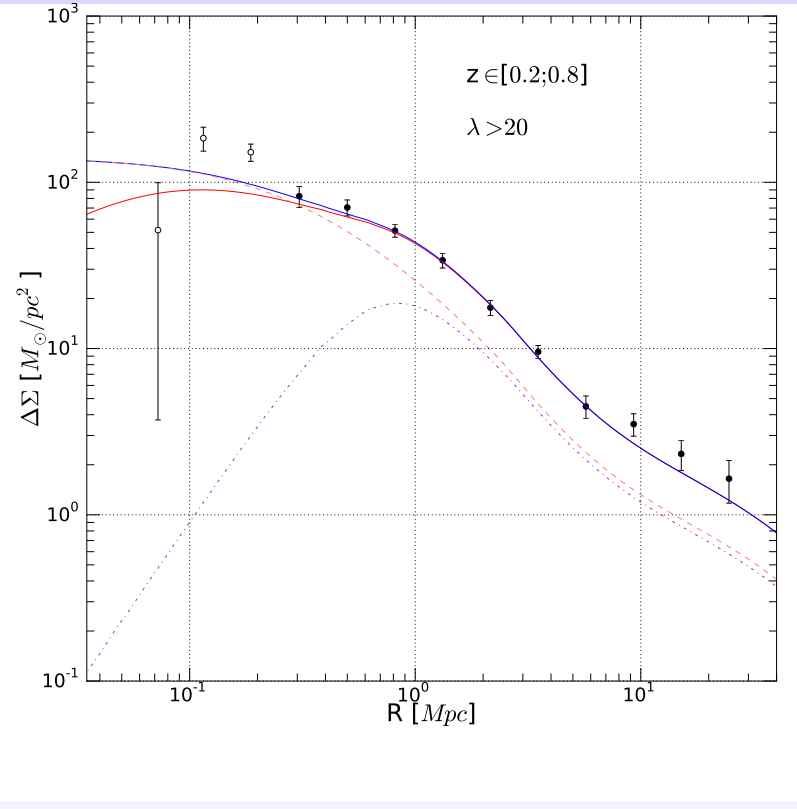
- 46 science published or submitted
- 14 papers on weak lensing published or submitted
- Weak lensing papers are based on the shear catalogs produced by Erin Sheldon (BNL)




DES Mass Map, Vikram et al. 2015 PRD

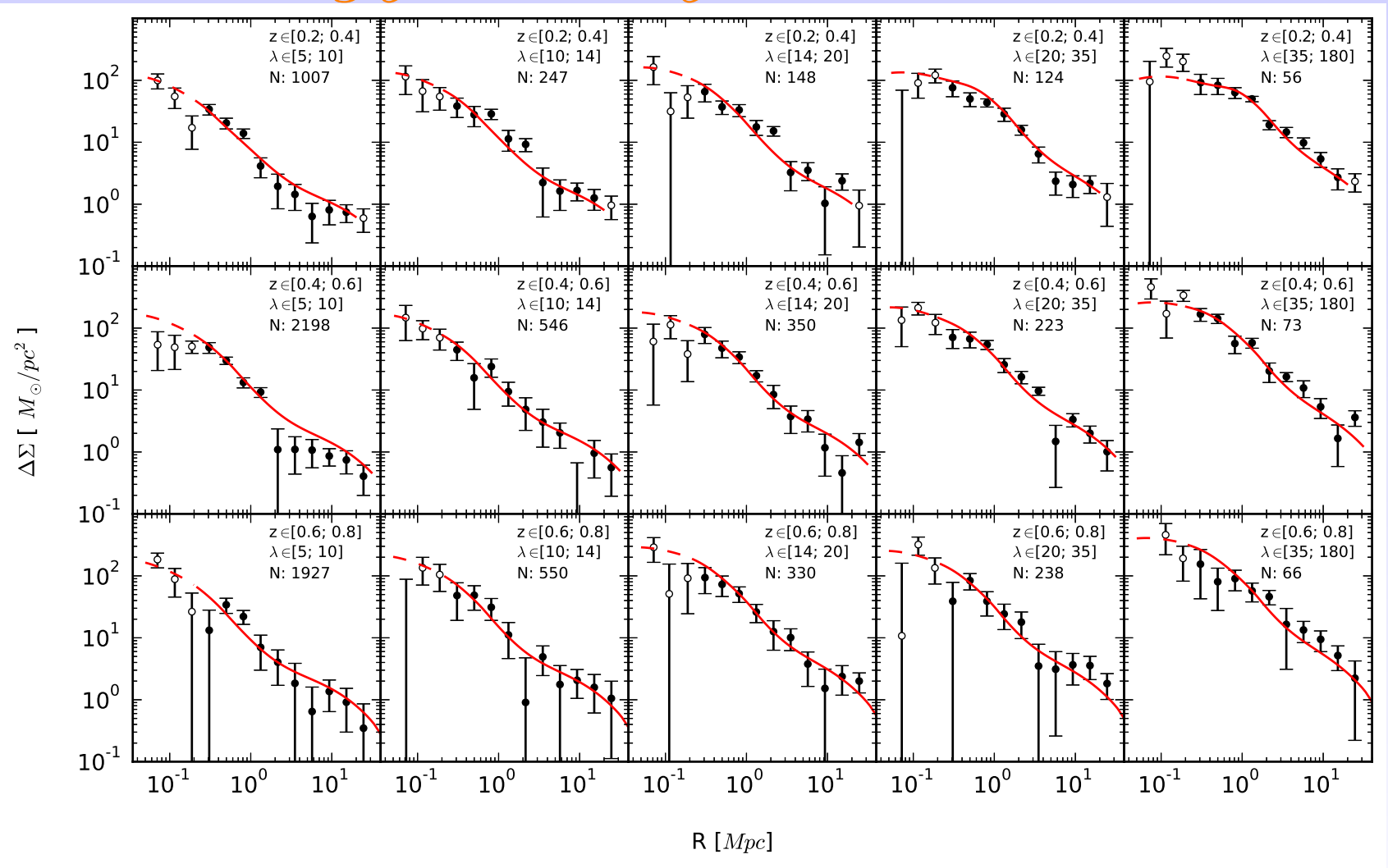
# *Dark Energy Survey*

- Sheldon was co-lead author, with Mike Jarvis, of the DES shear catalog paper, as well as producing catalogs (Jarvis et al. 2016). All other lensing papers depend on this work.
- Paper on lensing by clusters of galaxies, led by E. Sheldon, now in final stages. Part of the DES key project to constrain cosmology from clusters and lensing.
- E. Sheldon published, with Peter Melchior, a paper on the crowd sourcing "DES Exposure Checker", used by DES scientists to view and verify survey images (Melchior, Sheldon et al. 2015).




Mass Density Constrast of DES Clusters.

# *Dark Energy Survey*




Mass Density Constrast of DES Clusters as a function of richness and redshift. Best fit models in red. With more data, the redshift dependence will provide information about Dark Energy.

# *Dark Energy Survey: Ongoing and Future Work*

- Sheldon finishing new shear pipeline. Based on image simulations, the new code appears to meet requirements for 5 year data.
- New multi-object fitting code (with Matt Becker) close to production-ready. This method, measuring flux for all blended objects simultaneously, is a paradigm-shift for measuring fluxes in a large survey.
- Papers on Dark Energy will begin to appear in the next year. Progress has been slowed significantly due to bad weather.

# *Sheldon LSST Work*

- Galaxy measurement code is interesting for LSST
  - An order of magnitude faster than standard codes.
  - Can fit muliple epochs and multiple bands simultaneously. Important for LSST with very large number of epochs, many bands.
  - Multi-object fitting nearing readiness.
- Initial work to integrate code into the LSST "DM Stack" stalled due to lack of manpower in DM
- Now have begun work with new postdoc in LSST DM (Peter Melchior) and integration is progressing again.