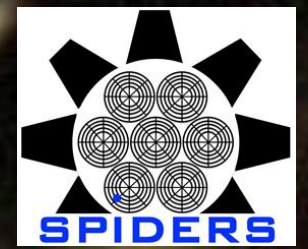


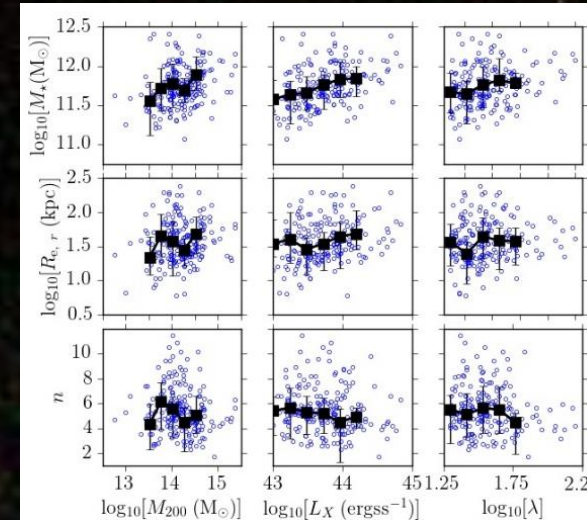


BCGs and the Cluster Environment in SPIDERS

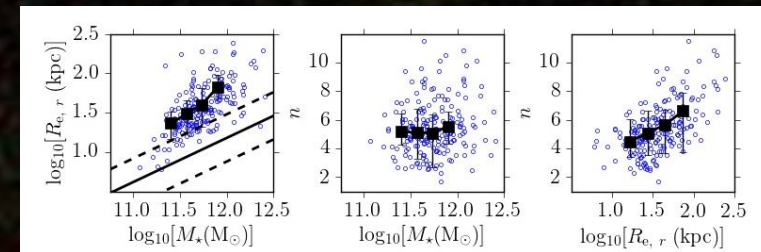


Furnell, Collins et al., (in collaborative review)

- SPIDERS is a survey as a part of SDSS-IV dedicated partially to spectroscopic follow-up observations on X-ray clusters
- Created visually-inspected sample of 329 BCG candidates from SPIDERS data, which were then fitted with Sersic profiles using the SIGMA pipeline (Kelvin et al, 2012)
- Tested fit reliability thoroughly using simulations
- Computed cluster velocity dispersions as a proxy for mass, alongside X-ray luminosity and redMaPPer richness
- Found *strong correlations* between BCG size and stellar mass and between BCG mass and environment
- However, *little influence of environment on mass-size relation*



Left: Correlations between BCG and cluster properties. As is visible, there is a correlation present with stellar mass, but little evidence for any independent environmental influence on the structural parameters.



Above: Correlations between intrinsic BCG properties. The leftmost plot is the mass-size relation, with the line marking the general relation for SDSS $n > 2.5$ galaxies from Shen et al., (2003)

Background: examples of BCGs from SPIDERS