

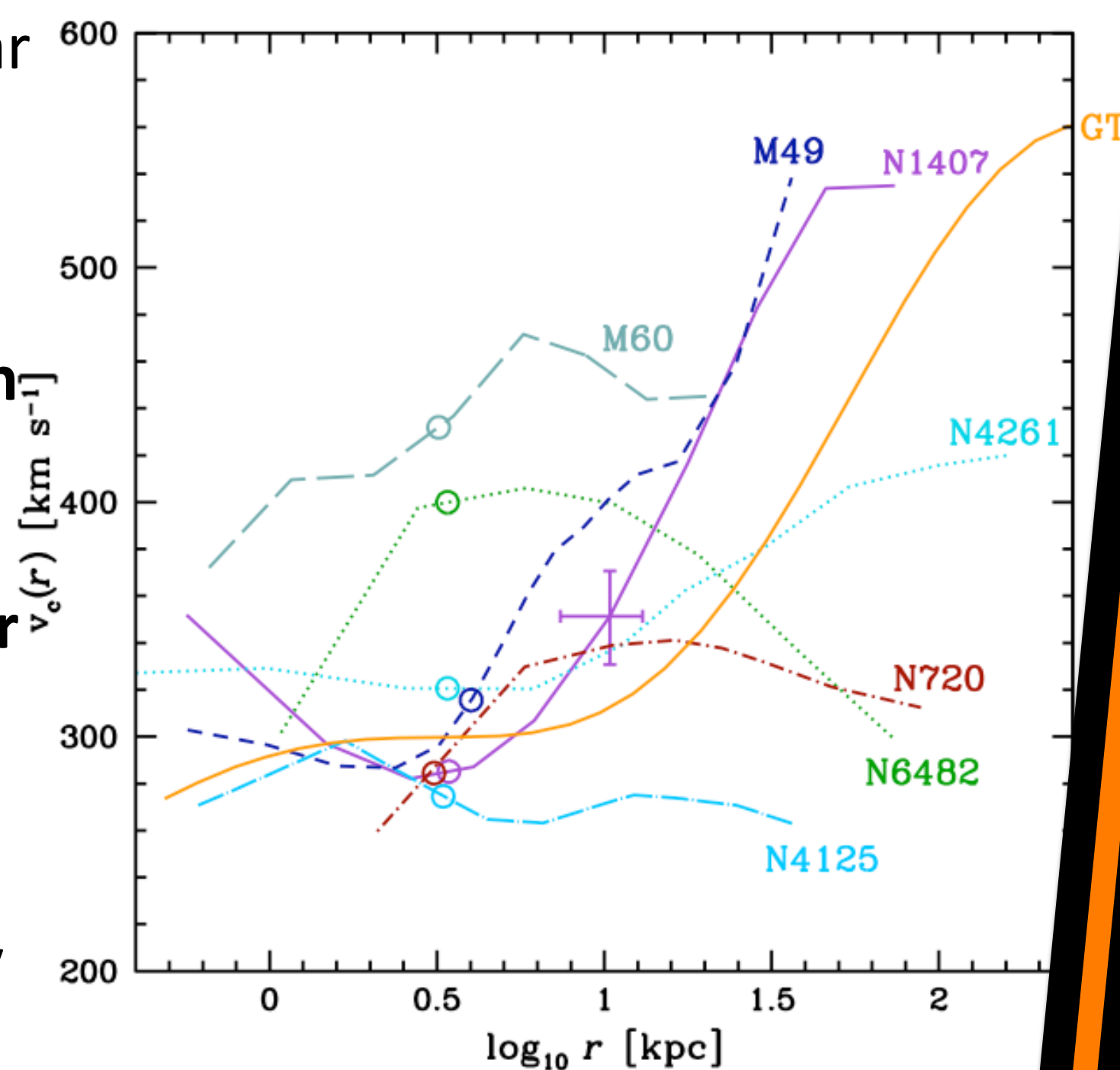
Suprime-cam: 4 for 1

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Galaxy Dark Mass Profiles to $>10R_{\text{eff}}$

Efficient Keck/DEIMOS follow-up spectroscopy

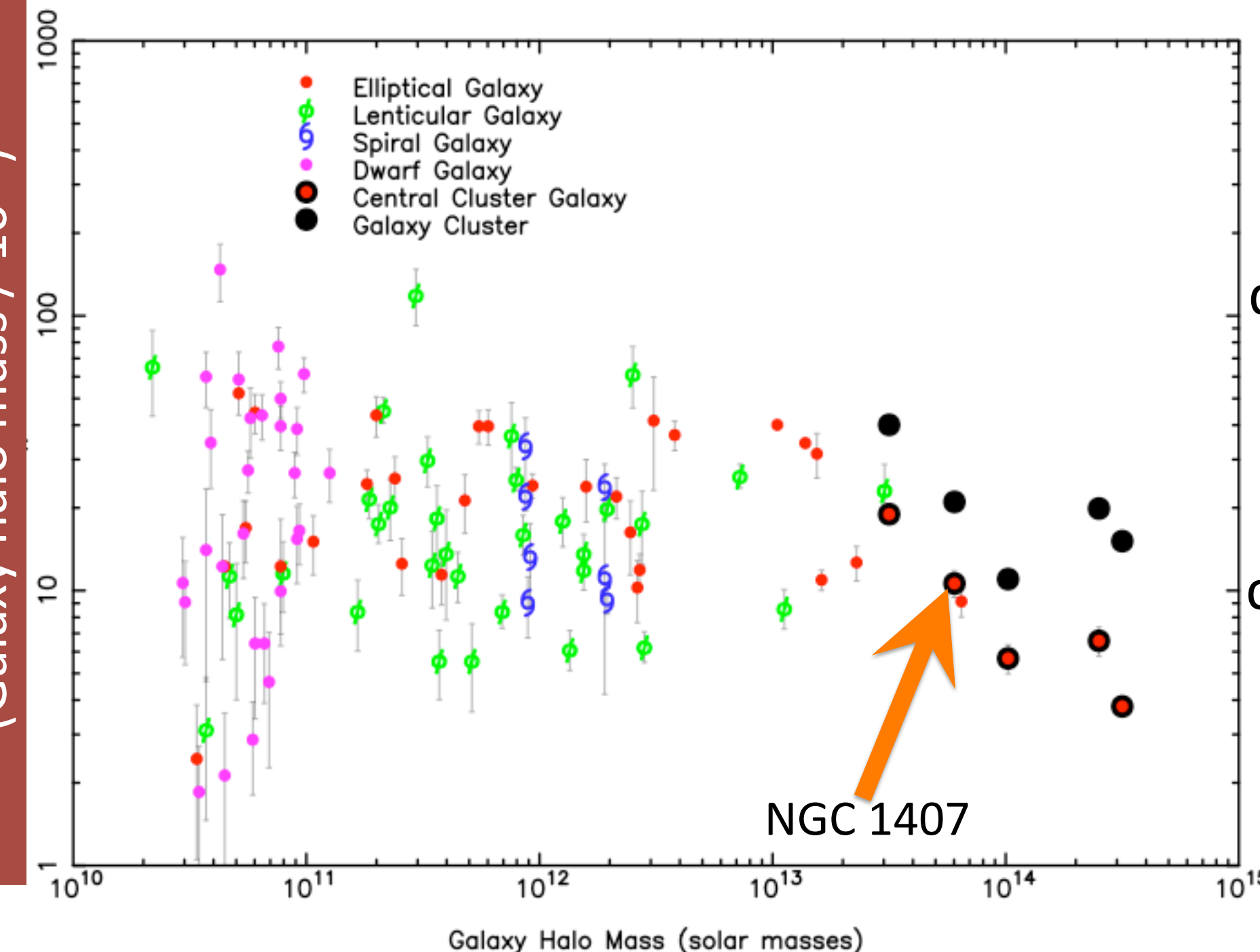
Romanowsky et al. (2009) present an analysis of the NGC1407 globular cluster system velocity dispersion profile out to unprecedented radii. **Contamination with Suprime-cam selection is a mere 3%, enabling an accurate characterization of the spatial distribution of the mass tracer particles – a critical input for this type of analysis.** Best-fit mass profile (**orange curve**) is consistent with a mass-to-light ratio of ~ 800 , thus it is one of the ‘darkest’ galaxy groups in the nearby Universe.



Entire Globular Cluster Systems

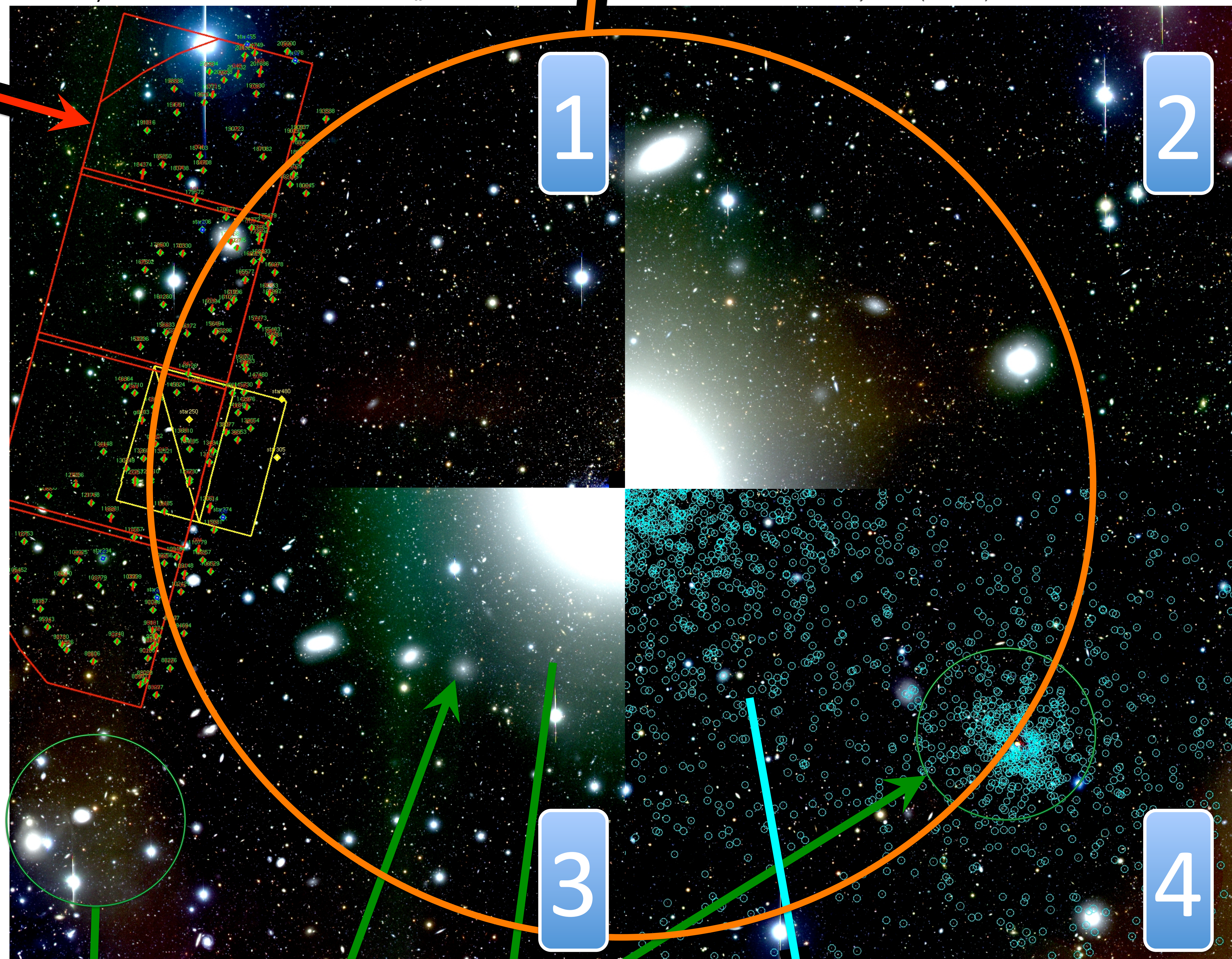
Measure total GC number with one pointing

Total number of globular clusters / (Galaxy halo mass / 10^{11})



Spitler & Forbes (2009) show that the total number of globular star clusters in a galaxy is directly proportional to the host galaxy’s dark matter or “halo mass”. The formation of globular cluster systems is therefore closely related to early galaxy formation. We have accumulated a Suprime-cam dataset of ~ 10 early-type galaxies.

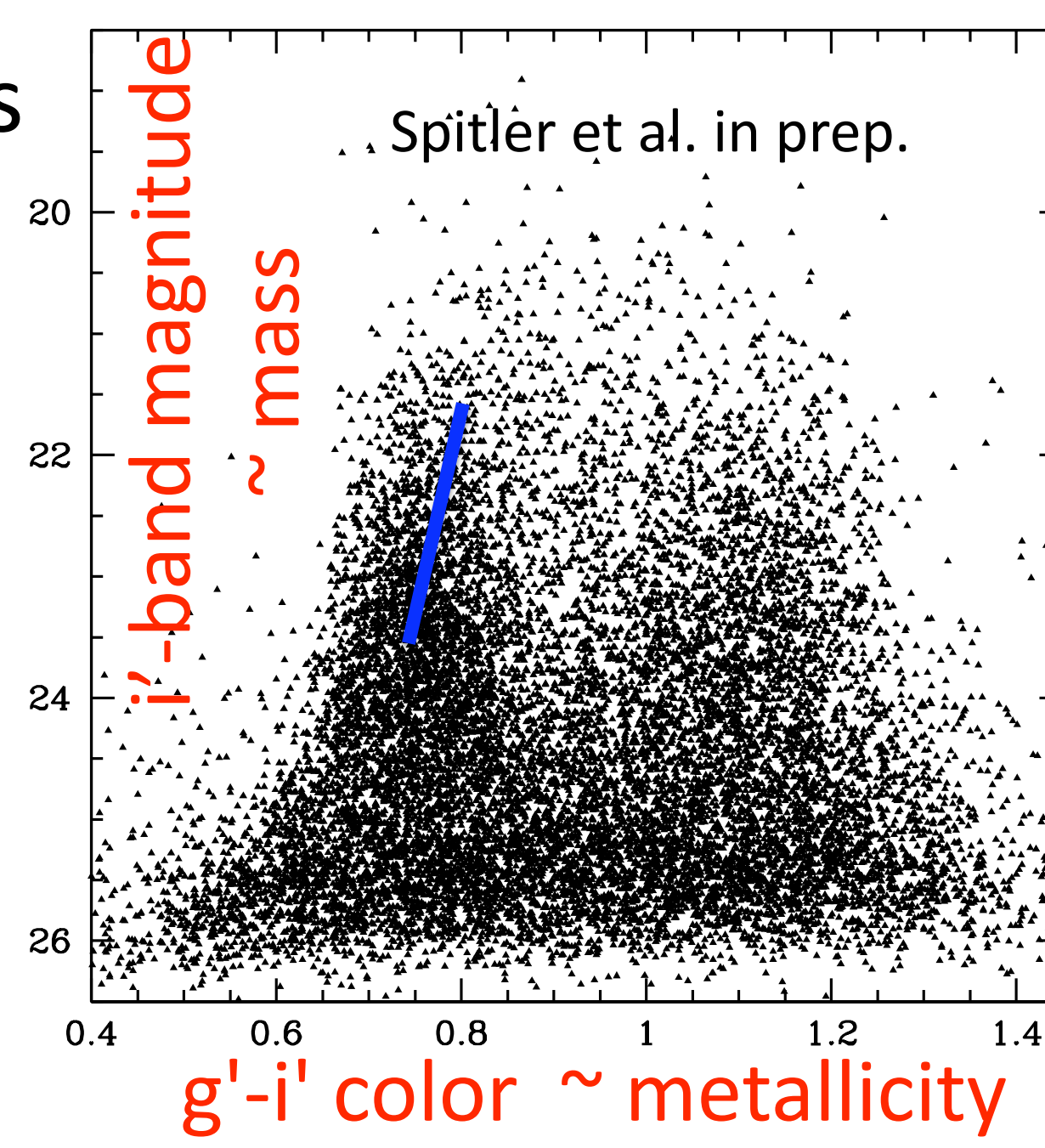
NGC 1407 E0 $M_K = -25.3$



Serendipitous Science

Deep, 3-band imaging of galaxies within 40Mpc

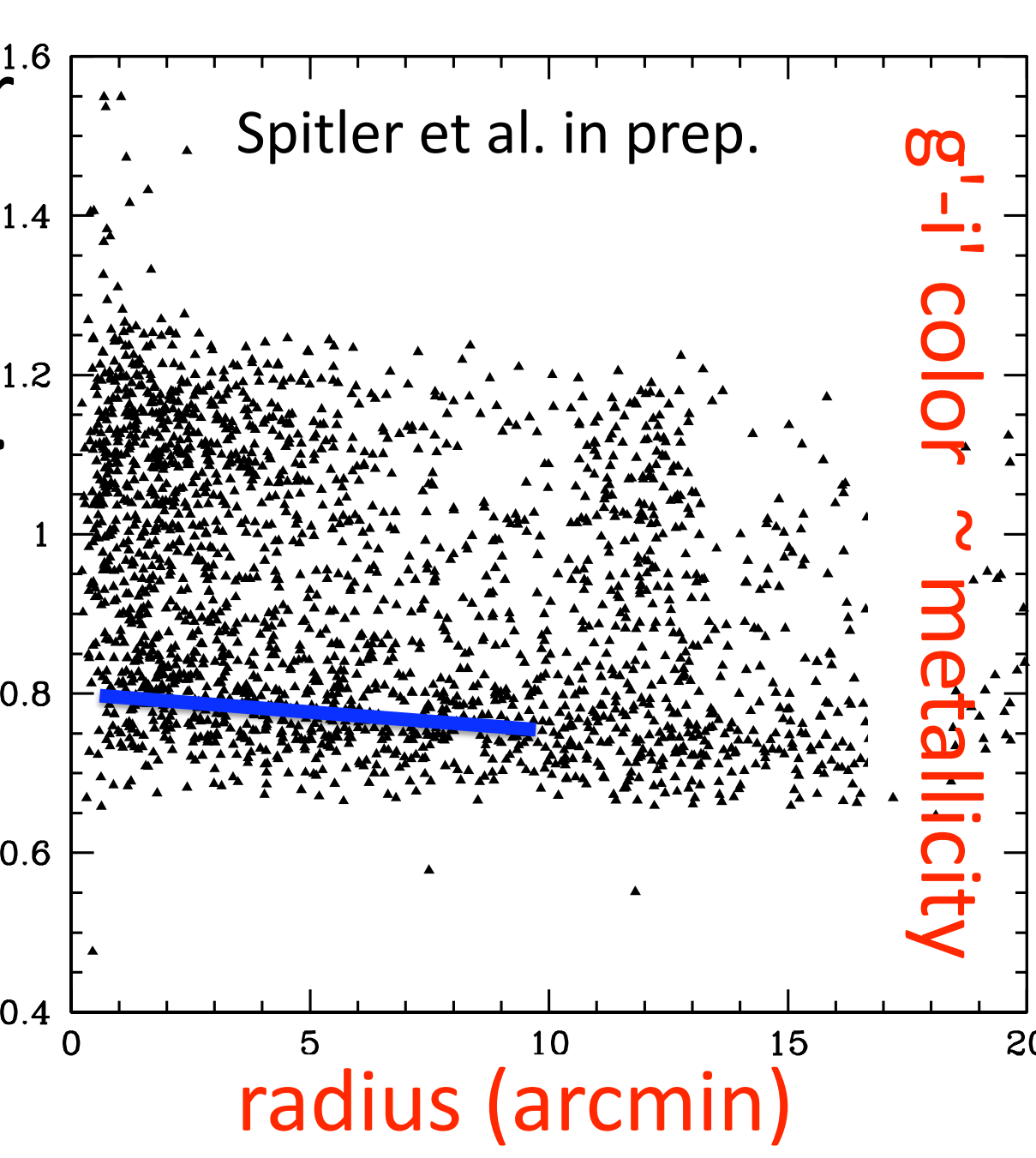
- Photometry and morphology of distant galaxies
- Detailed information on member low-surface brightness dwarf galaxies
- Two-dimensional galaxy luminosity profiles to ~ 5 effective radii
- Globular cluster systems of satellite galaxies
- Planetary nebulae identification with Prof. Sadanori Okamura’s [OIII] narrow-band filter



Globular Cluster Science

Accurate, “contamination-free” GC catalogues

- ◀ Characterization of globular metallicity bimodality
- ◀ Metal-poor GC mass-metallicity relation, a “blue tilt”. *evidence for self-enrichment?*
- ➔ Radial metallicity gradient within the metal-poor subpopulation of globular clusters. *evidence for very early dissipative collapse in NGC 1407?*



Subaru/Suprime-cam Imaging

Effective exposure time $\sim 3, 1, \& 1$ hours in the g' , r' & i' filters, respectively. Seeing $\sim 0.55''$.

References

Spitler & Forbes *MNRAS Letters*, 2009, v392, p1
Romanowsky, Strader, Spitler, Johnson, Brodie, Forbes & Ponman, *AJ in press*, arXiv:0809.2088