Satellite Luminosity Function of Low-Mass Host Galaxies
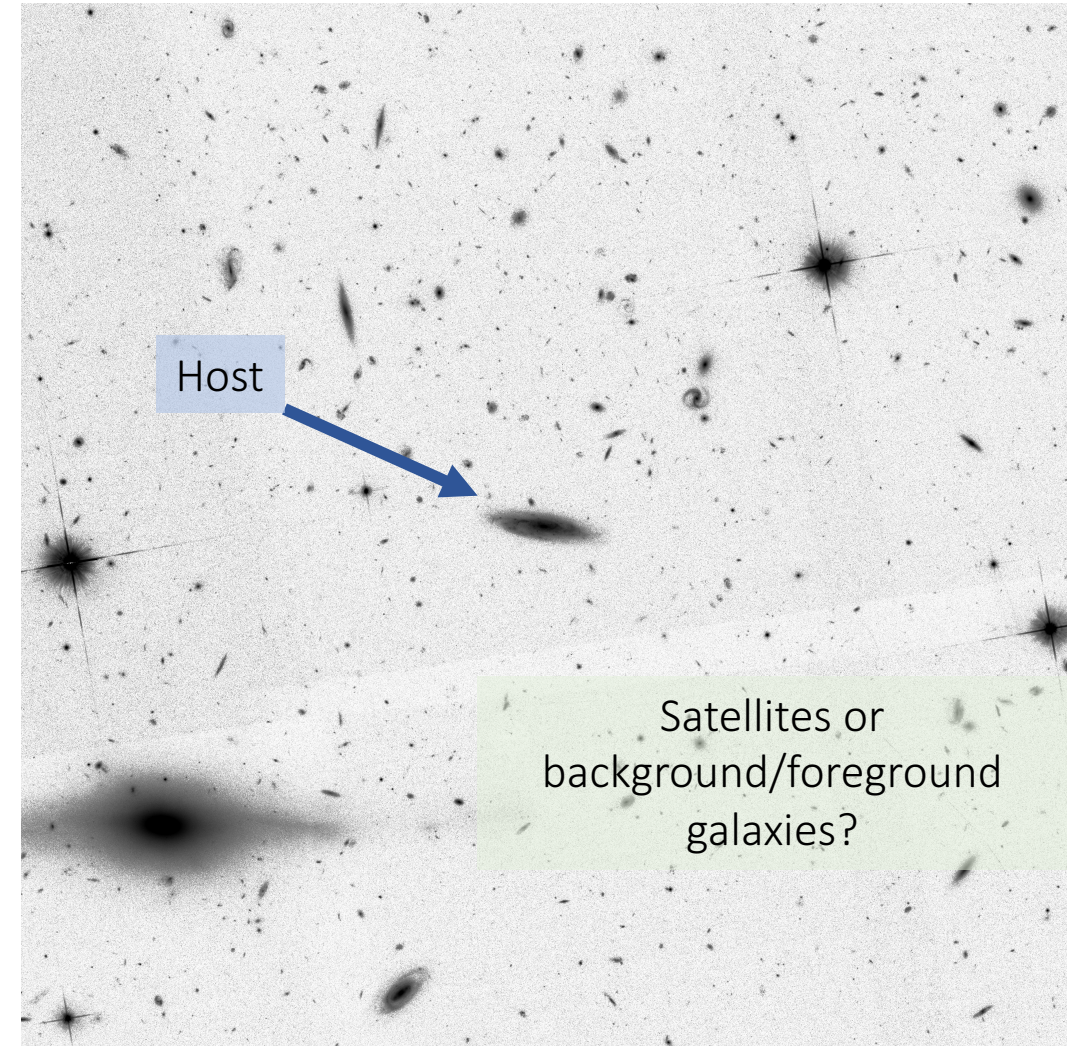## **Daniella Roberts**, Anna Nierenberg, Annika Peter

Goals

- Study the satellite evolution of low-mass host galaxies

- Test the ΛCDM prediction of hierarchy of structure
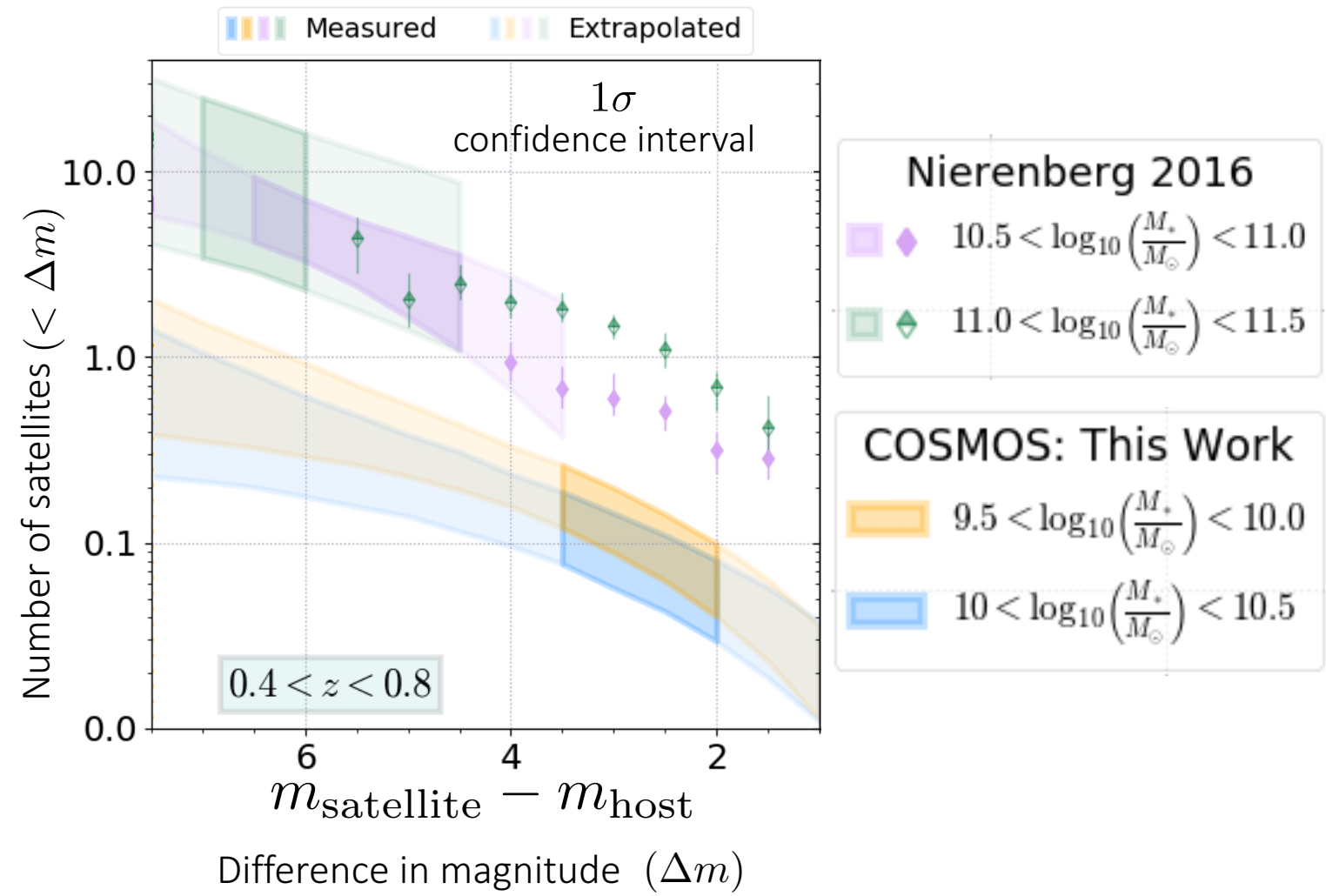
Data

- **Data set:** COSMOS survey

- Spectroscopic data of **low-mass host galaxies:** $9.5 < \log(M_*/M_\odot) < 10.5$

- **Redshift range:** $0.1 < z < 0.8$

Method

- Perform a **statistical background subtraction** to find the number satellites as a function of magnitude

Host

Satellites or background/foreground galaxies?

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Satellite cumulative luminosity function of low-mass host galaxies

Results

- Number of satellites increases with increasing host stellar mass M_* for large stellar masses

- For low-mass galaxies the number of satellites does not scale with the host stellar mass

- In agreement with the power-law dependence at the low end of the galaxy mass–halo mass relation

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