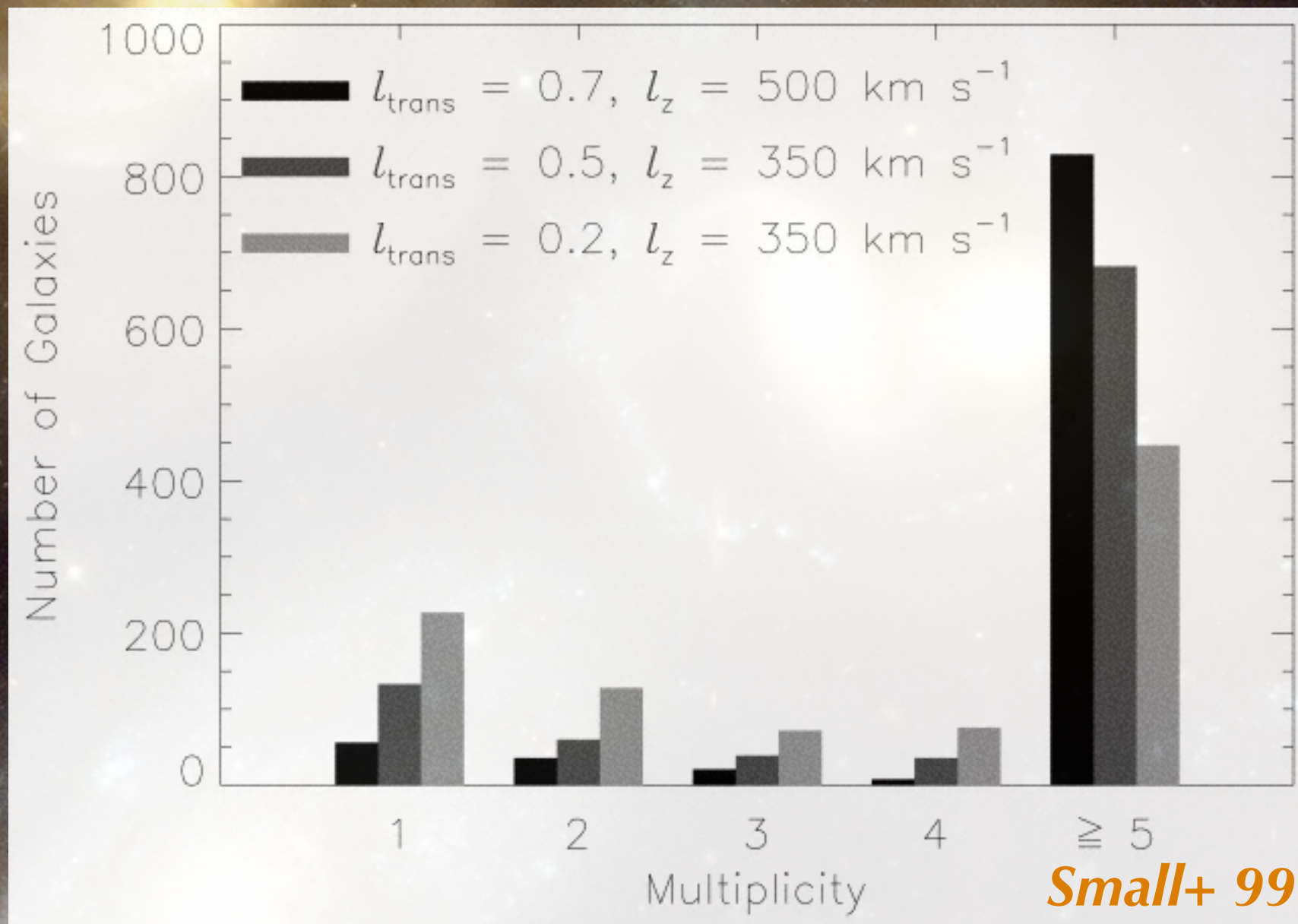
The background of the slide is a deep space image featuring a large, bright, yellowish-white galaxy core in the upper left, surrounded by a diffuse, glowing halo. Numerous stars of varying brightness are scattered across the dark cosmic background, some showing prominent diffraction spikes. The overall color palette is dominated by the warm tones of the galaxy and the cool blues and blacks of the void.

Tracing Galaxy Group Assembly through Fossil Tidal Features

Iraklis Konstantopoulos
John Stocker Postdoctoral Fellow, AAO

DECam Community Workshop, 13 March 2015

why study groups?



$$f(M^*) \sim 2\%$$

e.g., Eke+ 2005



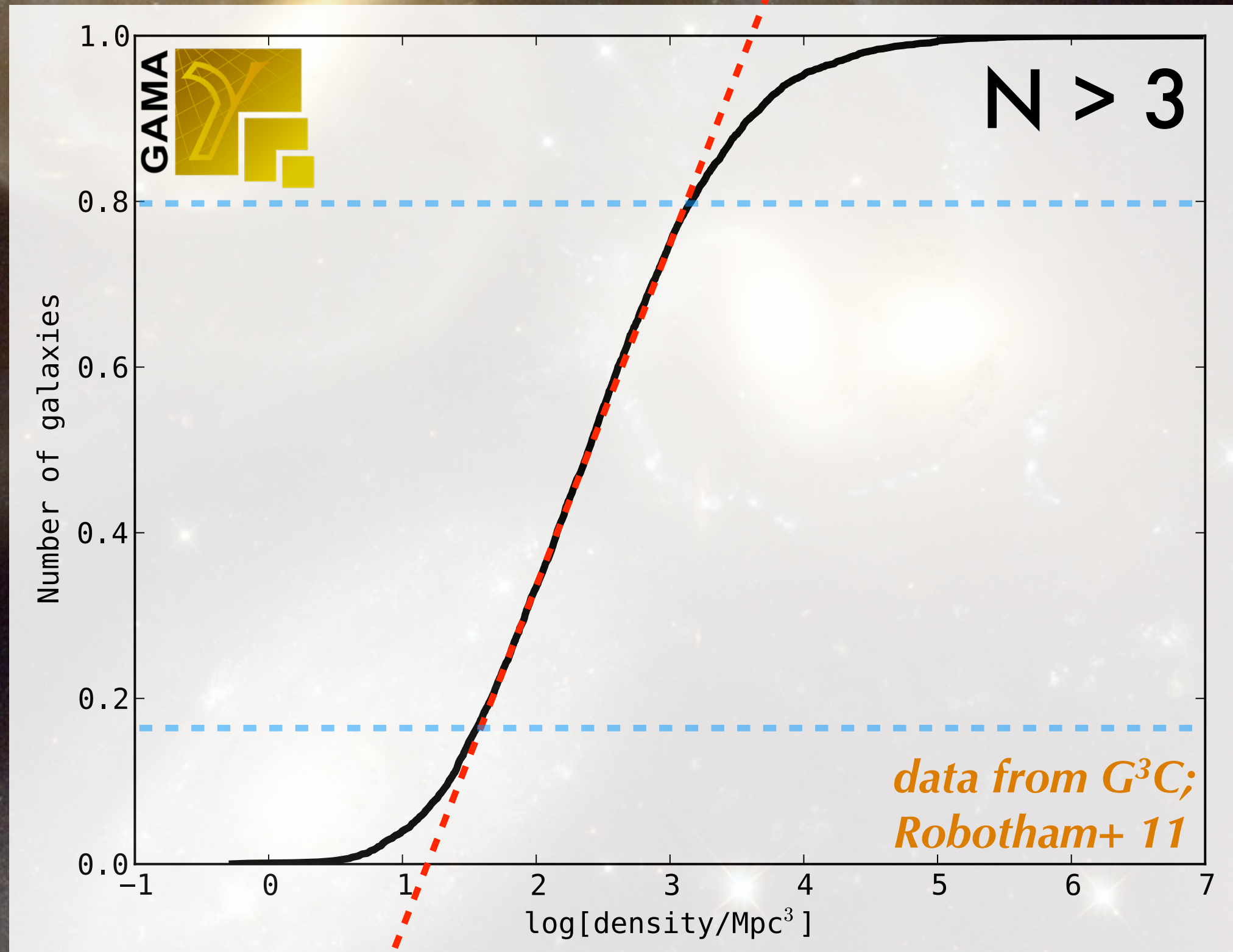
A cosmic background image featuring a large, bright, yellowish-white galaxy in the upper left and a smaller, blueish-white galaxy in the lower left. The background is filled with numerous stars of varying brightness and colors, including yellow, white, and blue. A thick orange diagonal line runs from the top right towards the bottom left, passing through the center of the image.

$$f(M^*) \sim 50\%$$

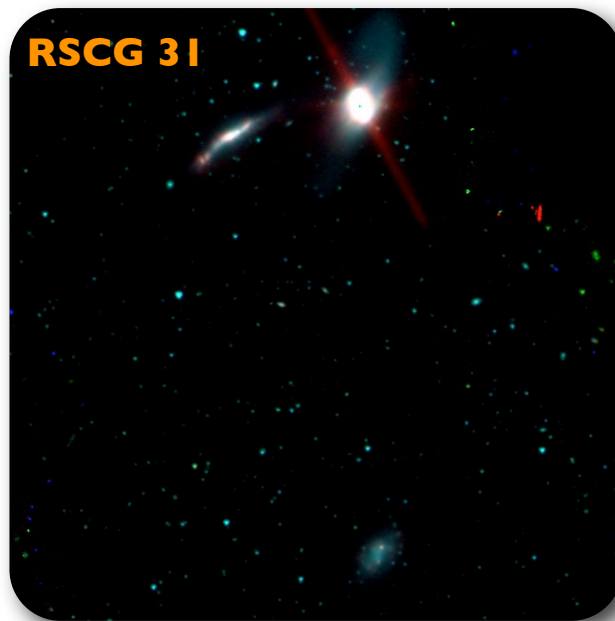
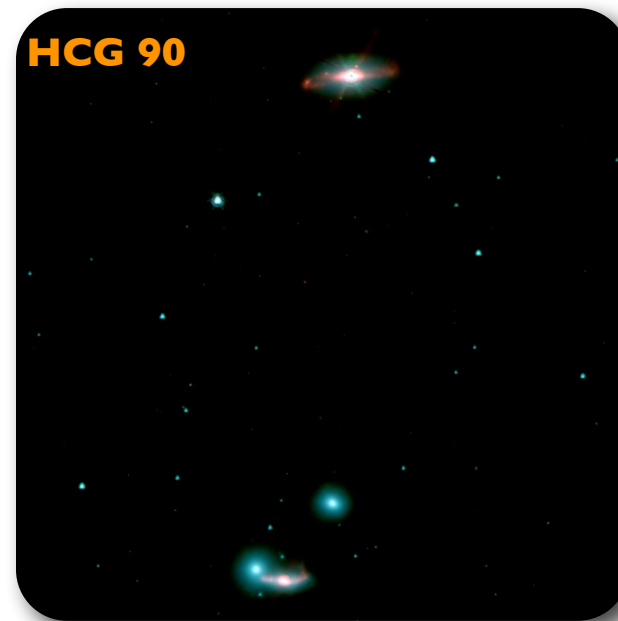
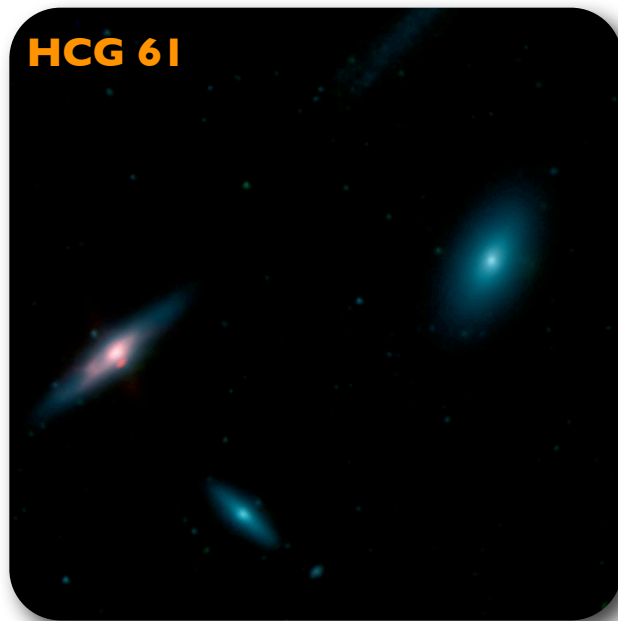
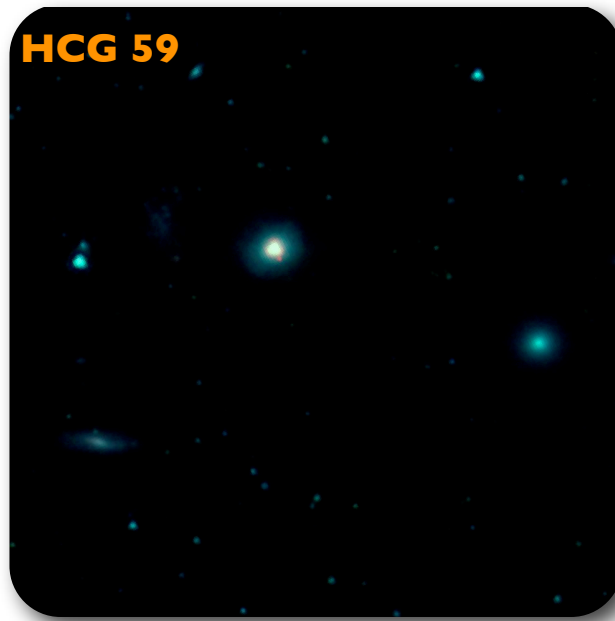
VS

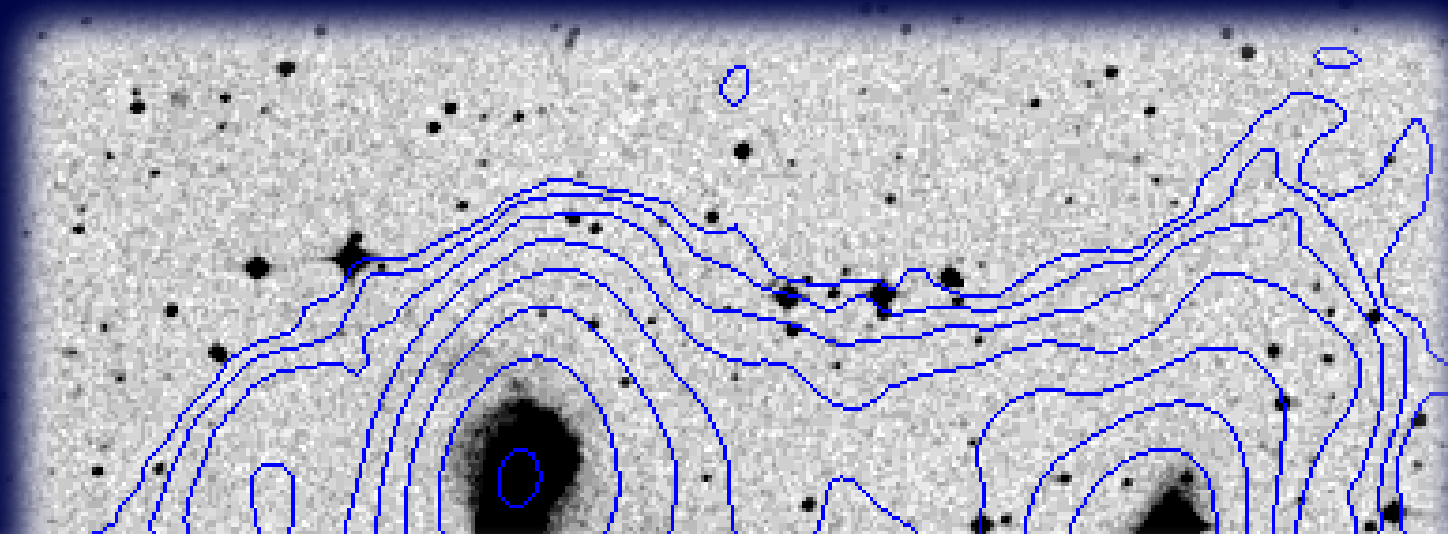
$$f(M^*) \sim 2\%$$

group densities

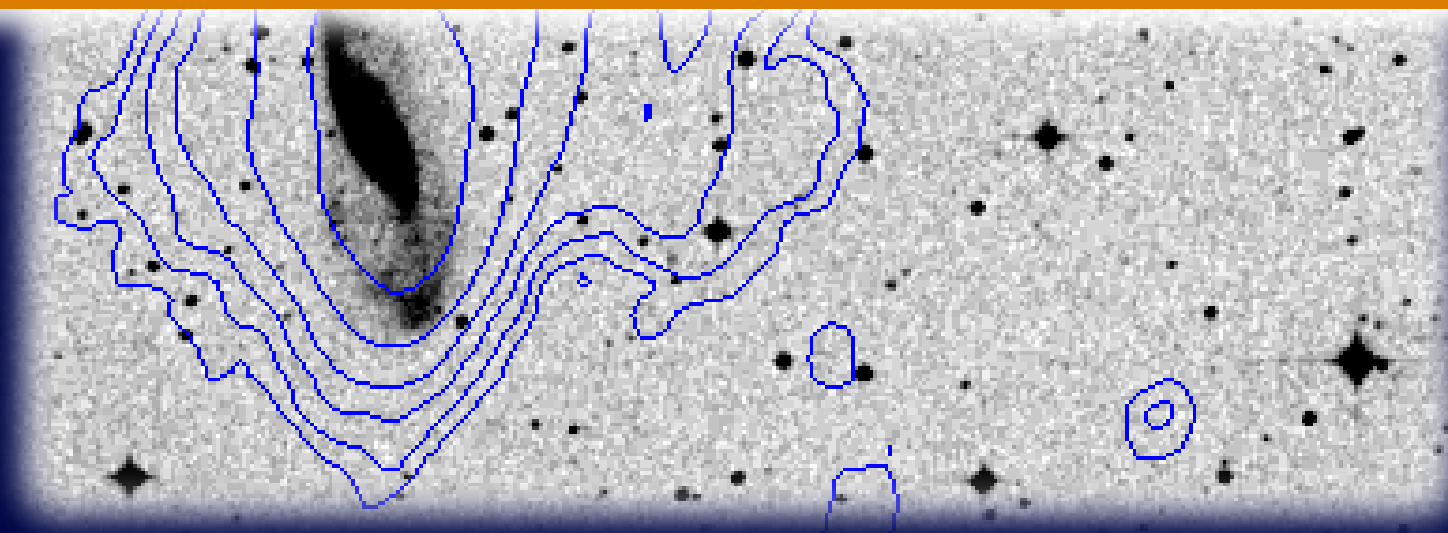


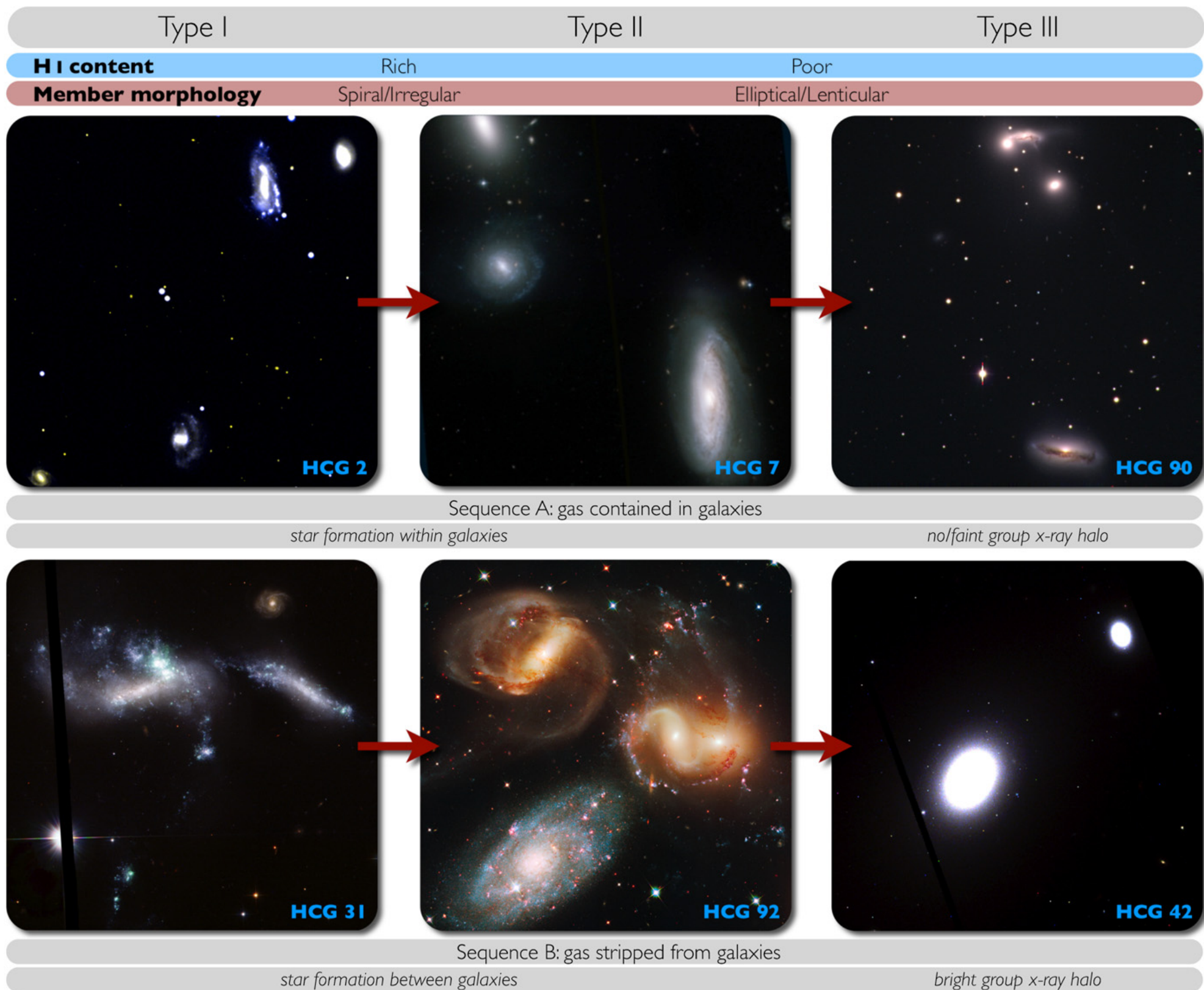
Compact groups &
you!



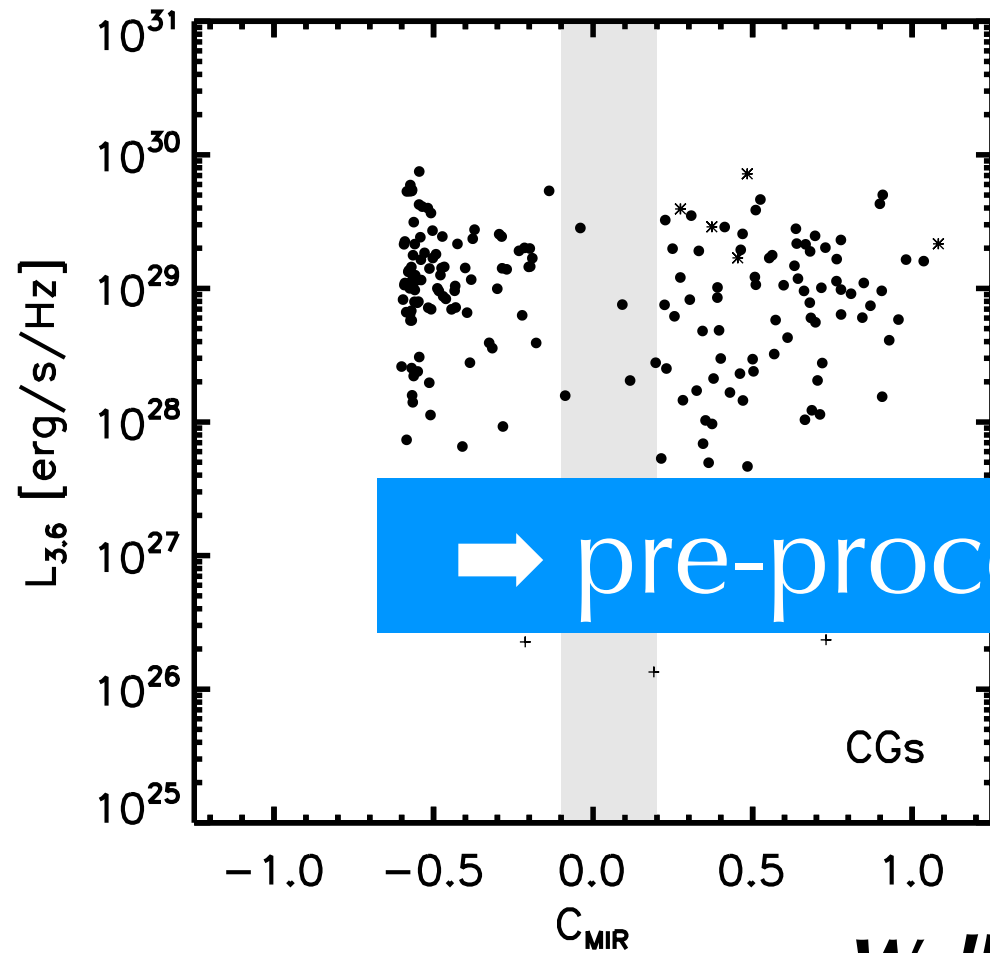


- * Verdes-Montenegro+ 01: HI deficiency
- * Johnson+ 07: $M_{\text{HI}}/M_{\text{dyn}}$

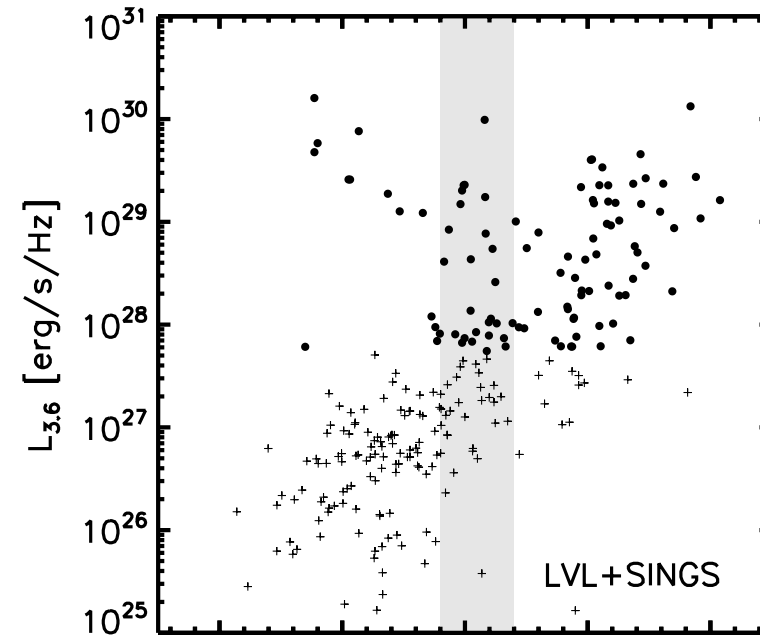




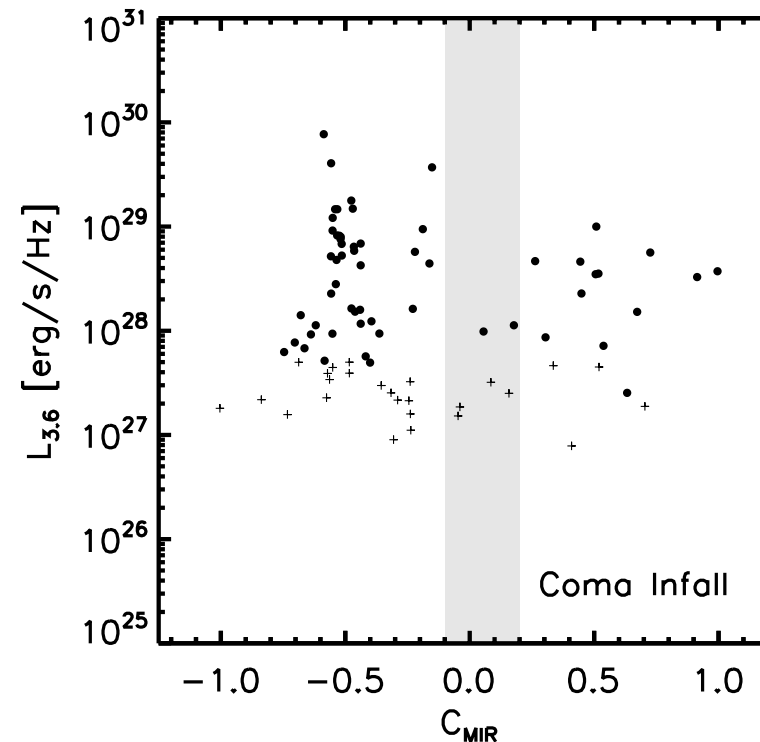
a gap in mid-IR colours



Walker+ 12



→ pre-processing of gas & galaxies



compact what, now?

- * Highest volume densities
- * Small memberships

- ➔ Most of the processes
- ➔ Few degrees of freedom

- * 50:50 isolated:embedded

DECam!

HCG 59



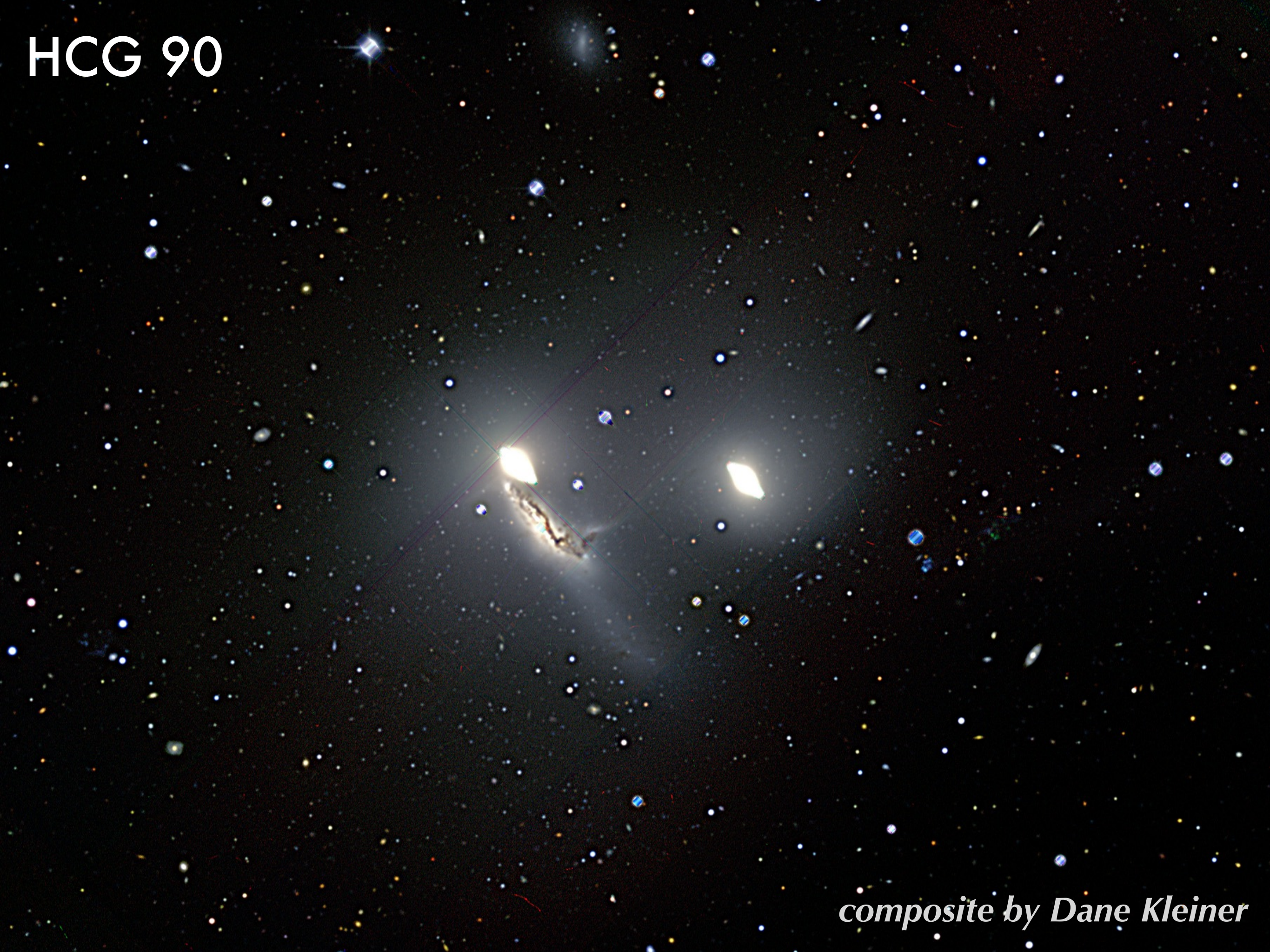
composite by Dane Kleiner

HCG 31



composite by Dane Kleiner

HCG 90



composite by Dane Kleiner

HCG 79



composite by Dane Kleiner

HCG 48



composite by Dane Kleiner

HCG 62



composite by Dane Kleiner

HCG 07



composite by Dane Kleiner

HCG 07

- * Just one known dwarf
- * No obvious debris
- * Enhanced SFR
- * First infall group?

composite by Dane Kleiner

summary

- * Most galaxies in groups
- * CGs probably simplest groups to study
- * Rapid evolution
- * S0 production lab
- * GAMA and DECAM open up big data realm
- * Still require multi-wavelength information, including HI and X-rays to map the history

The Redshift Reject Rubric



collage by Dane Kleiner

