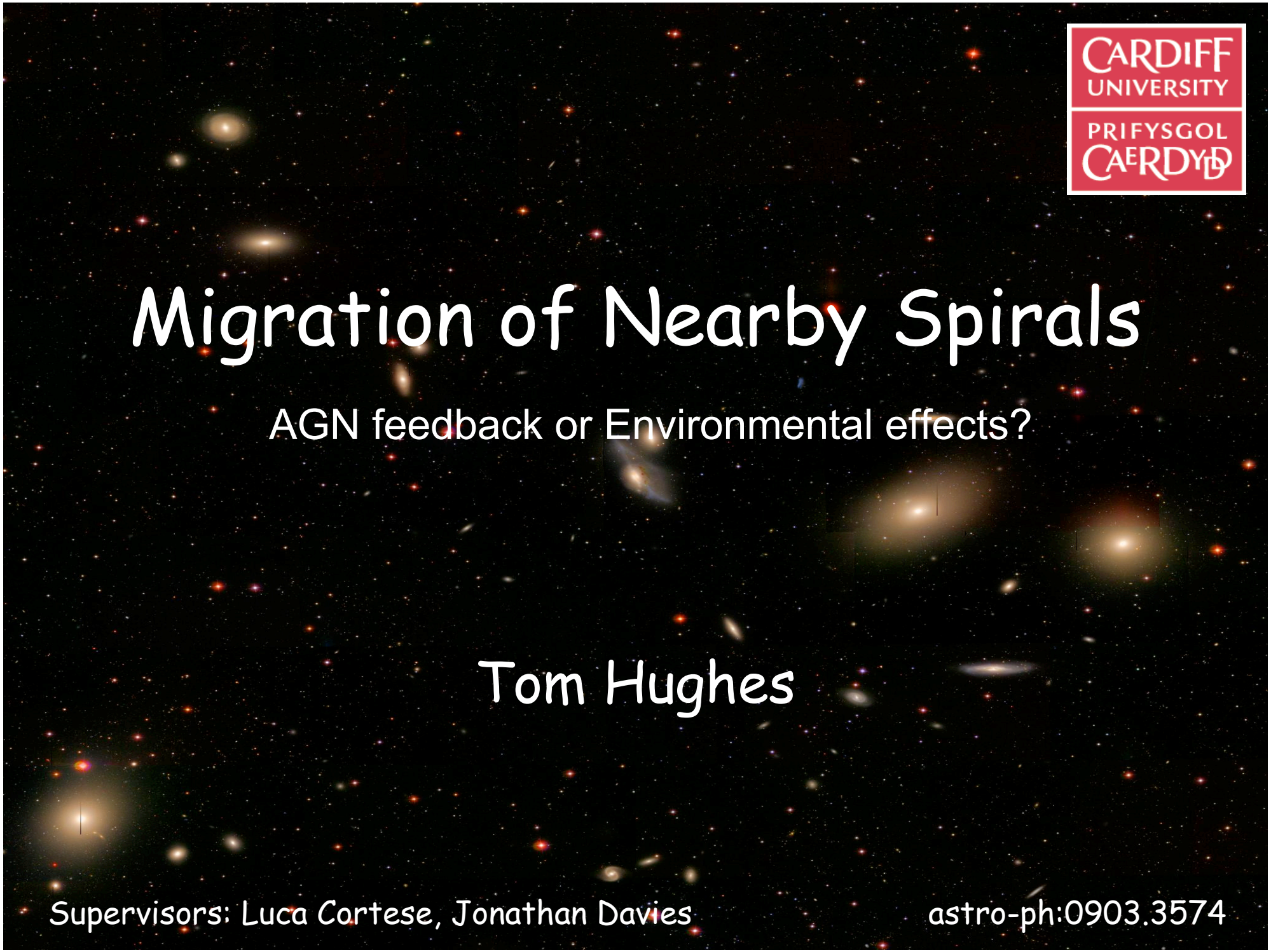
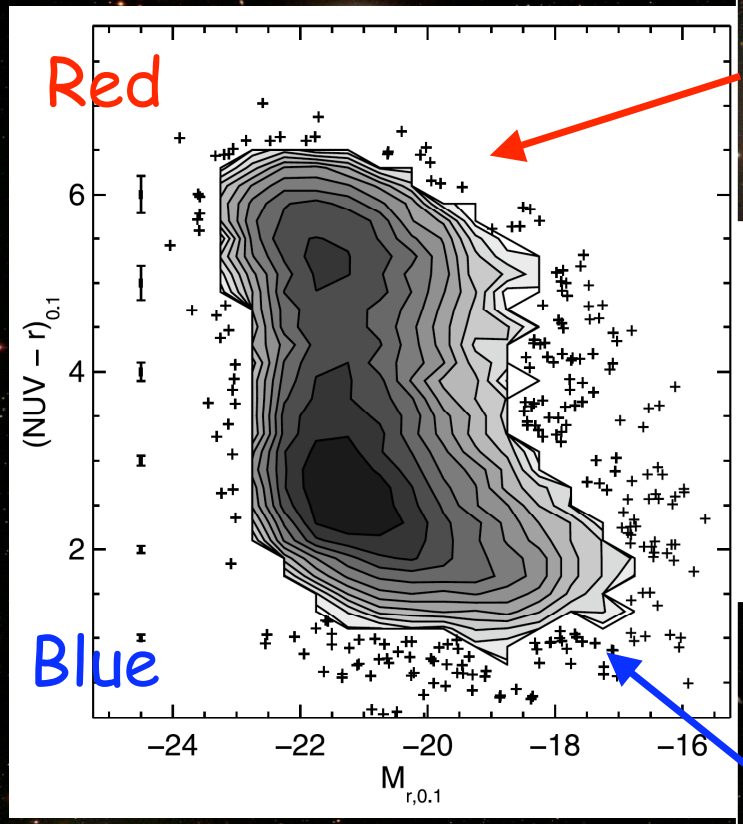
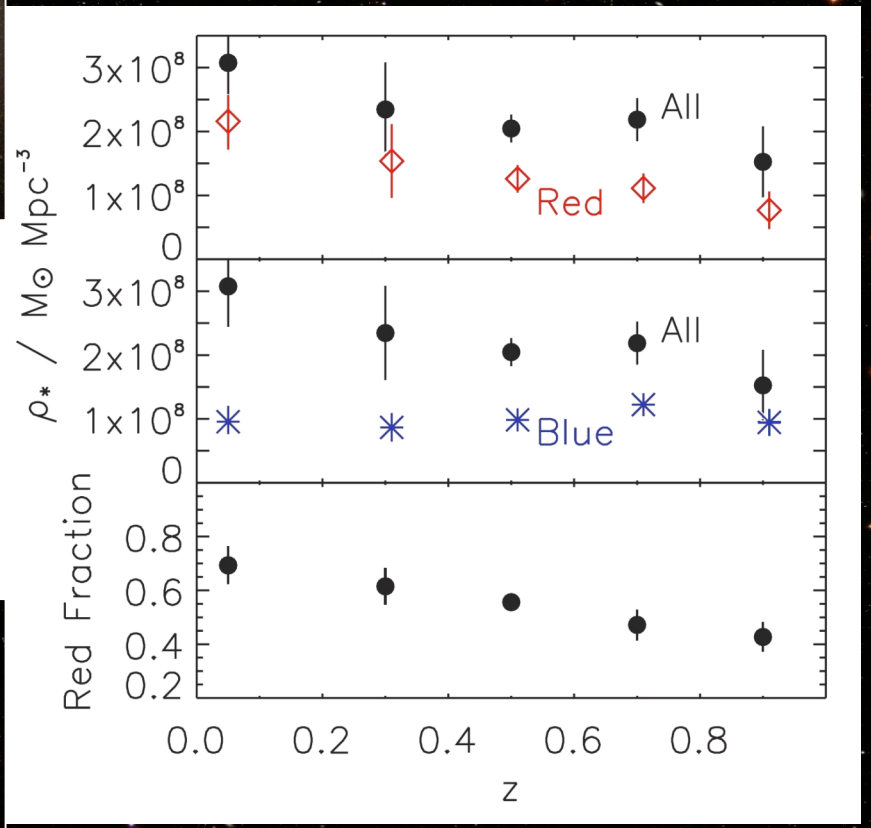

CARDIFF UNIVERSITY
PRIFYSGOL CAERDYDD
Migration of Nearby Spirals
AGN feedback or Environmental effects?
Tom Hughes
Supervisors: Luca Cortese, Jonathan Davies
astro-ph:0903.3574

Migration of galaxies





Wyder et al, 2007

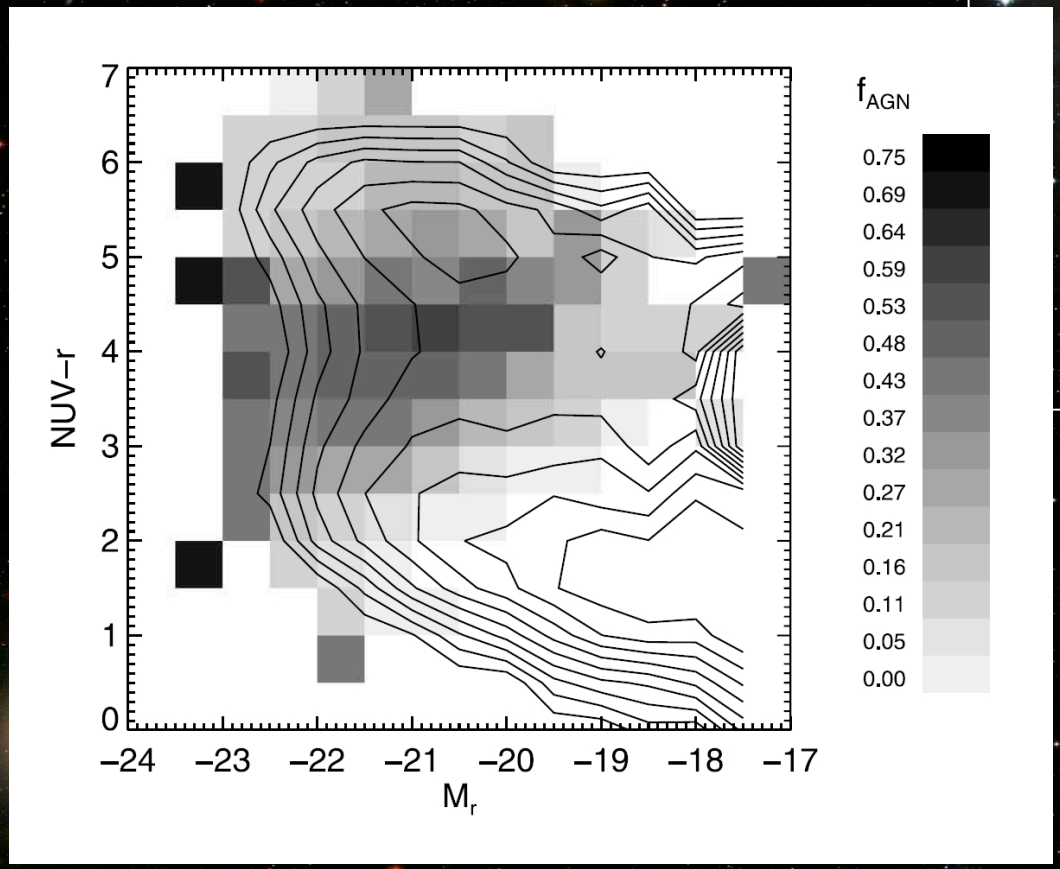
Borch et al, 2006

Blue ⟶ Red

What drives the migration?

AGN Feedback

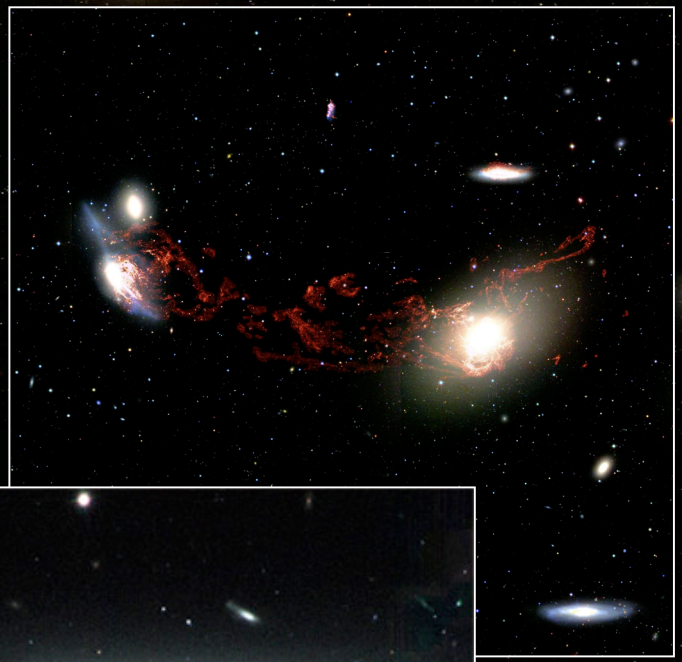
ESO/NASA/APEX



Martin et al, 2007

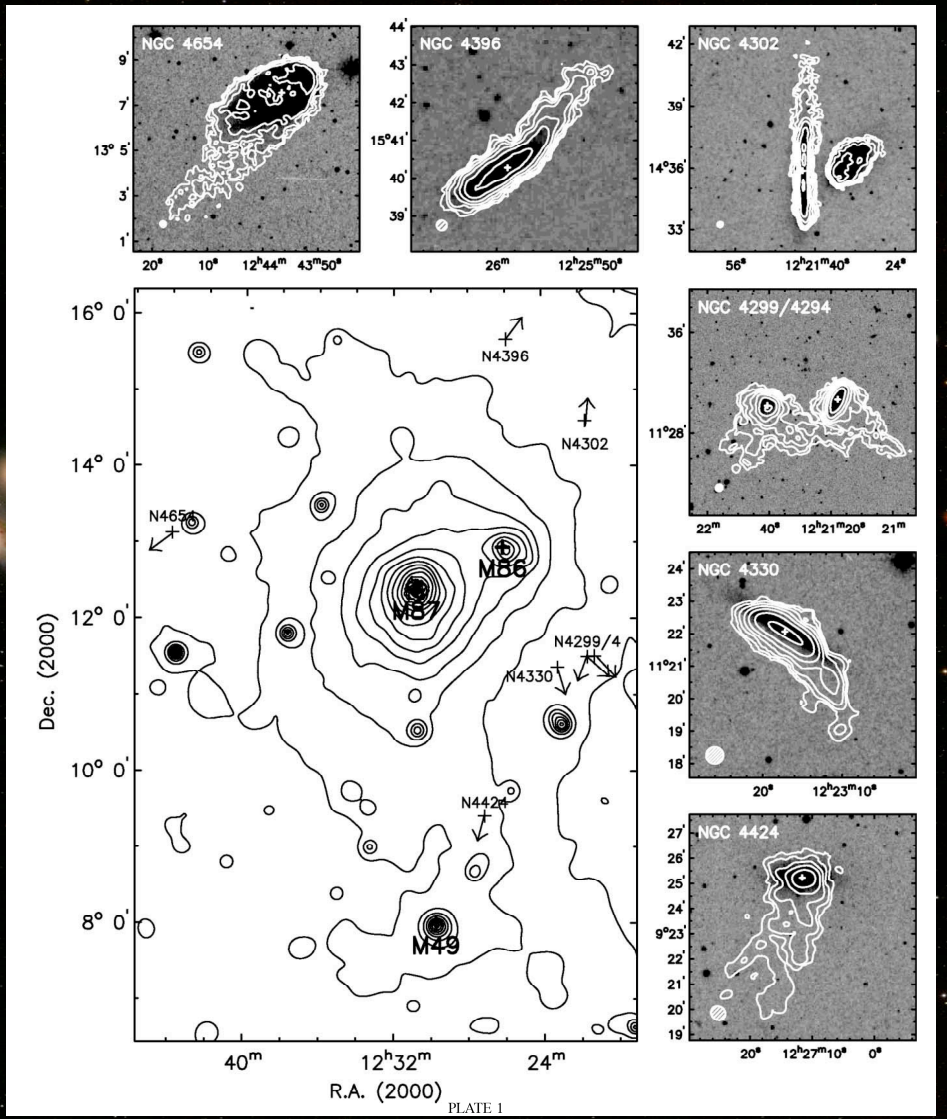
But not well understood in spirals!

Environmental Effects



T. Tal /
J. Kenney

H.Crowl



Chung et al, 2007

Herschel Reference Survey

- 15-25 Mpc
- $K_{sTot} \leq 12$ mag
- $b > +55°$
- $A_B < 0.2$

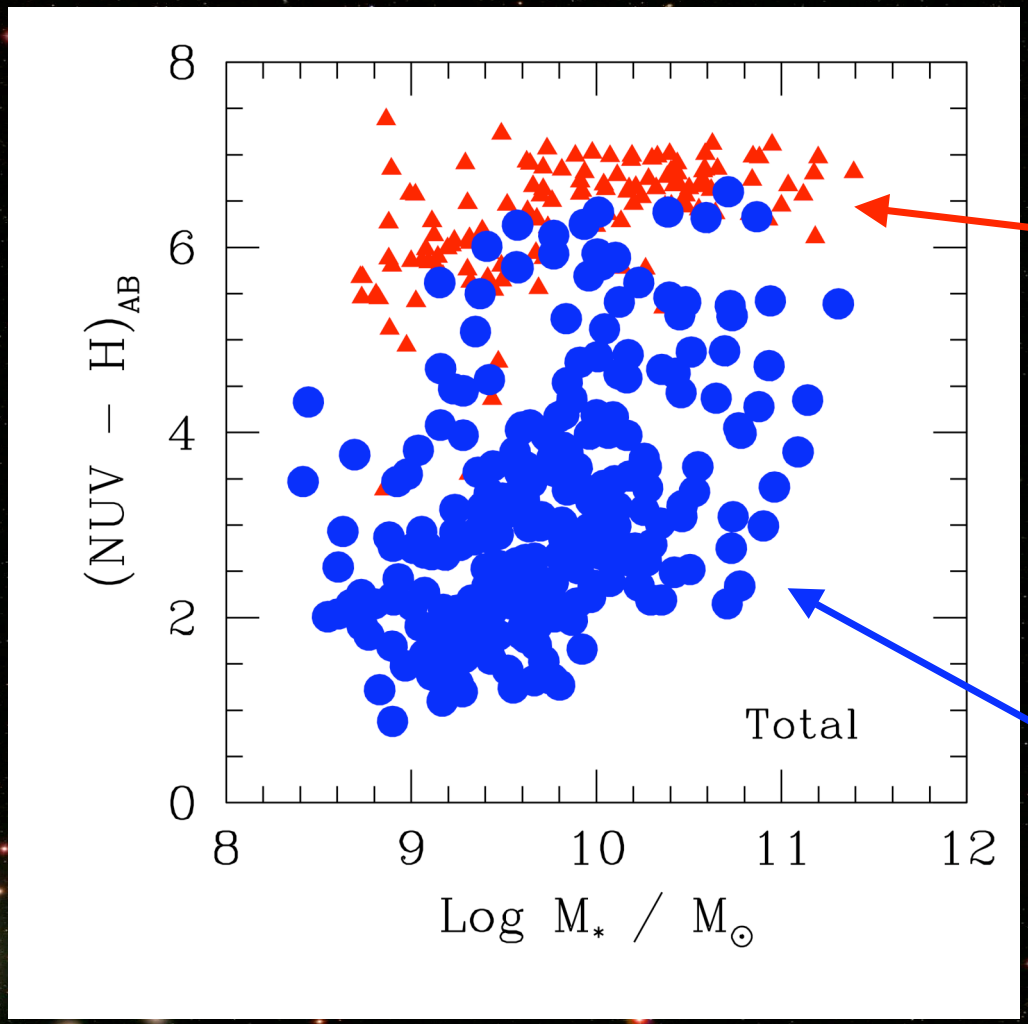
ESA/AOES/HST

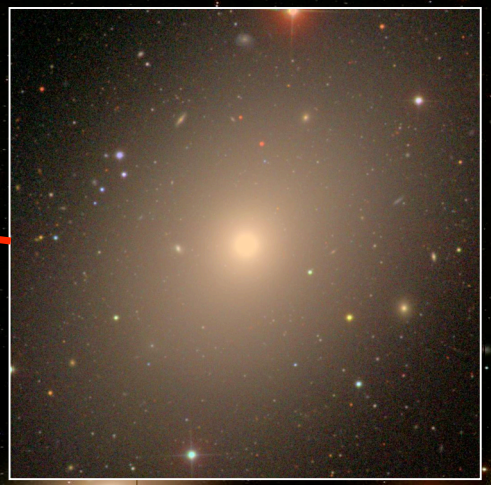
Total sample of 454 galaxies

(171 ETGs + 283 LTGs)

Complete in NUV and H band imaging, HI 21cm, and optical spectroscopy

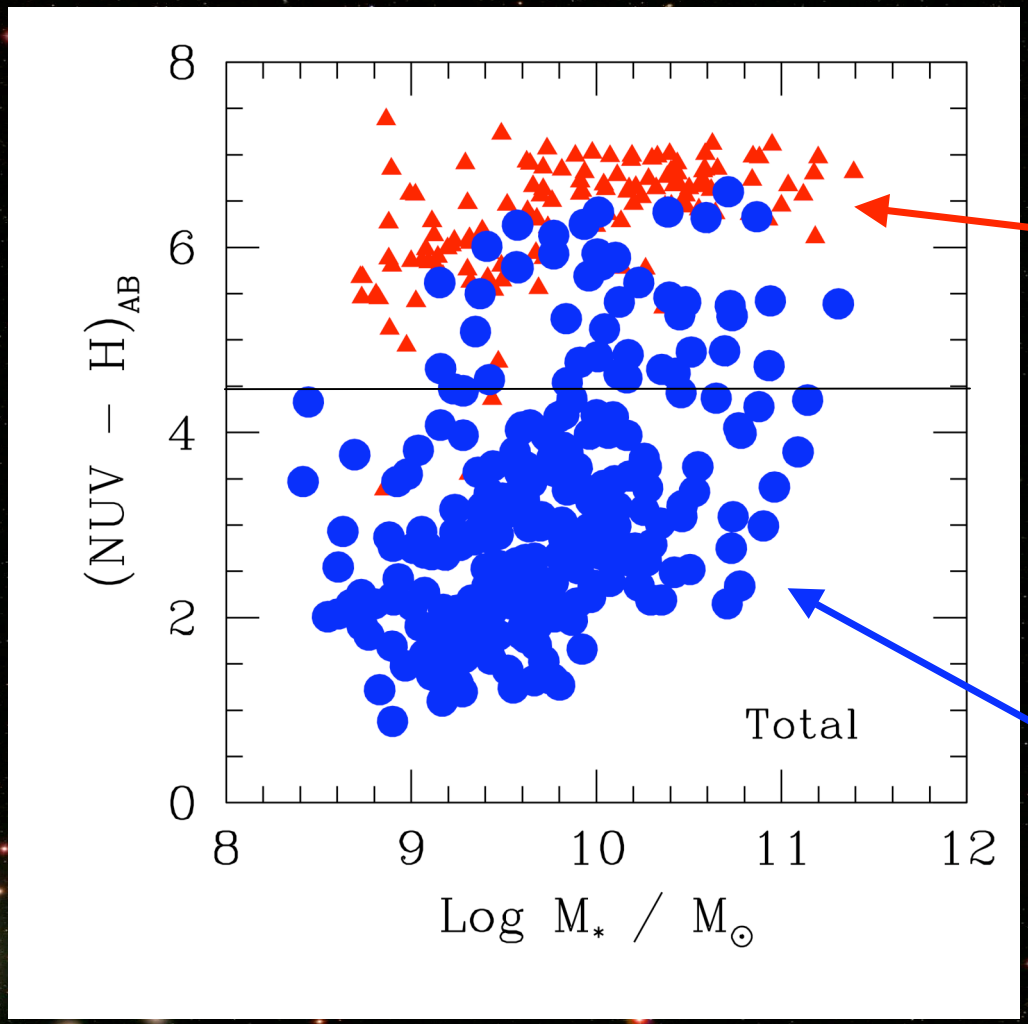
Colour-mass distribution

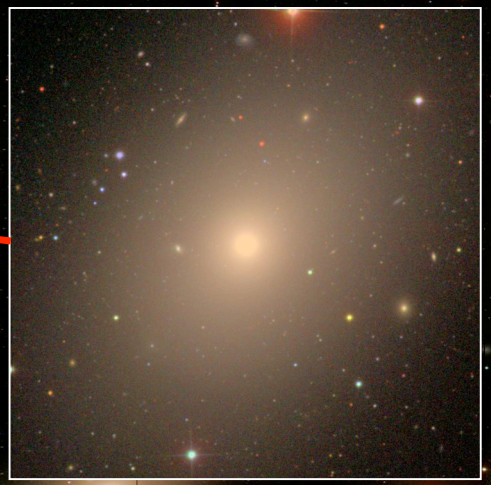




Hughes & Cortese, MNRAS in press

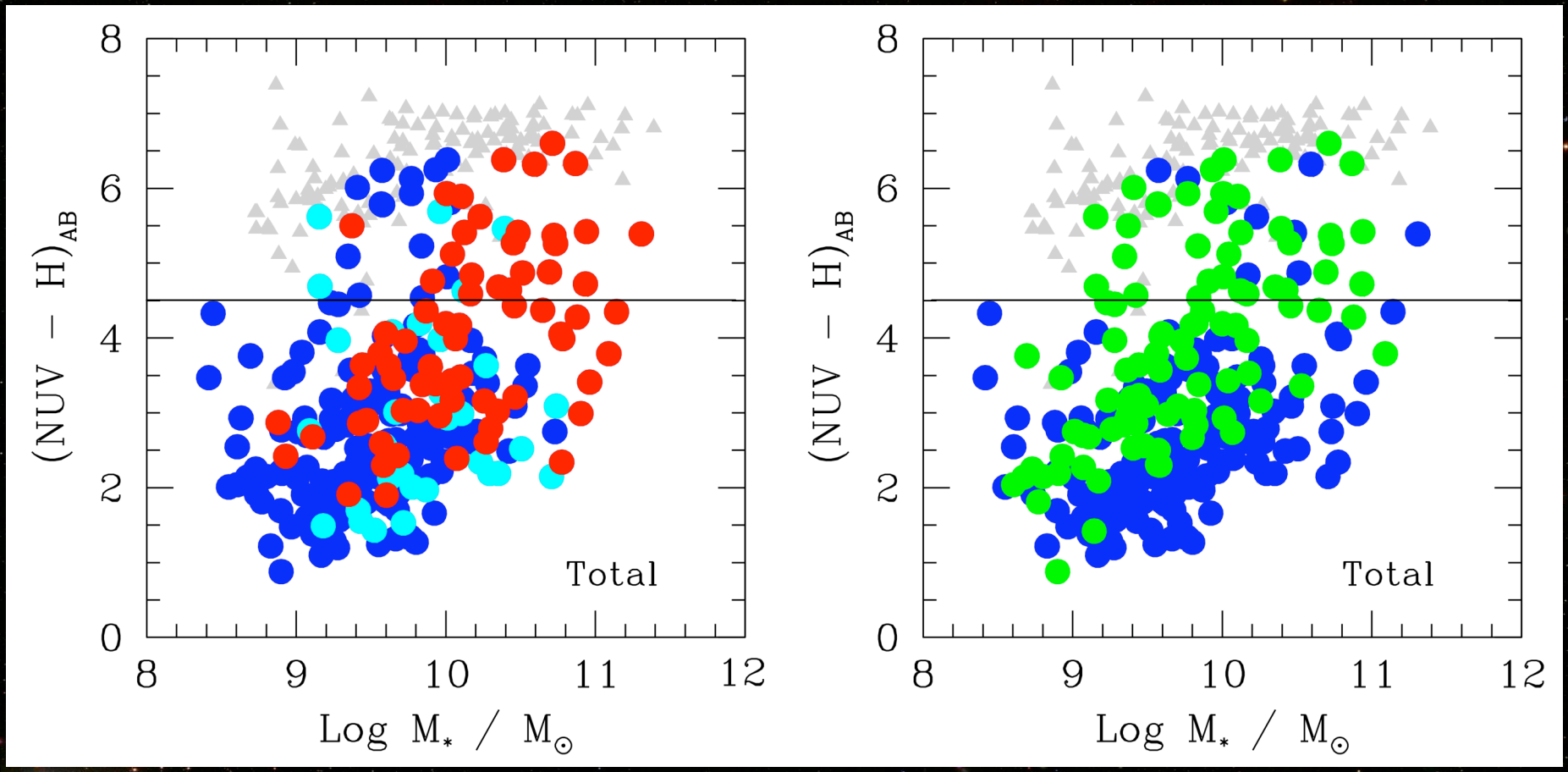
Colour-mass distribution





Hughes & Cortese, MNRAS in press

AGN-hosts and HI deficiency

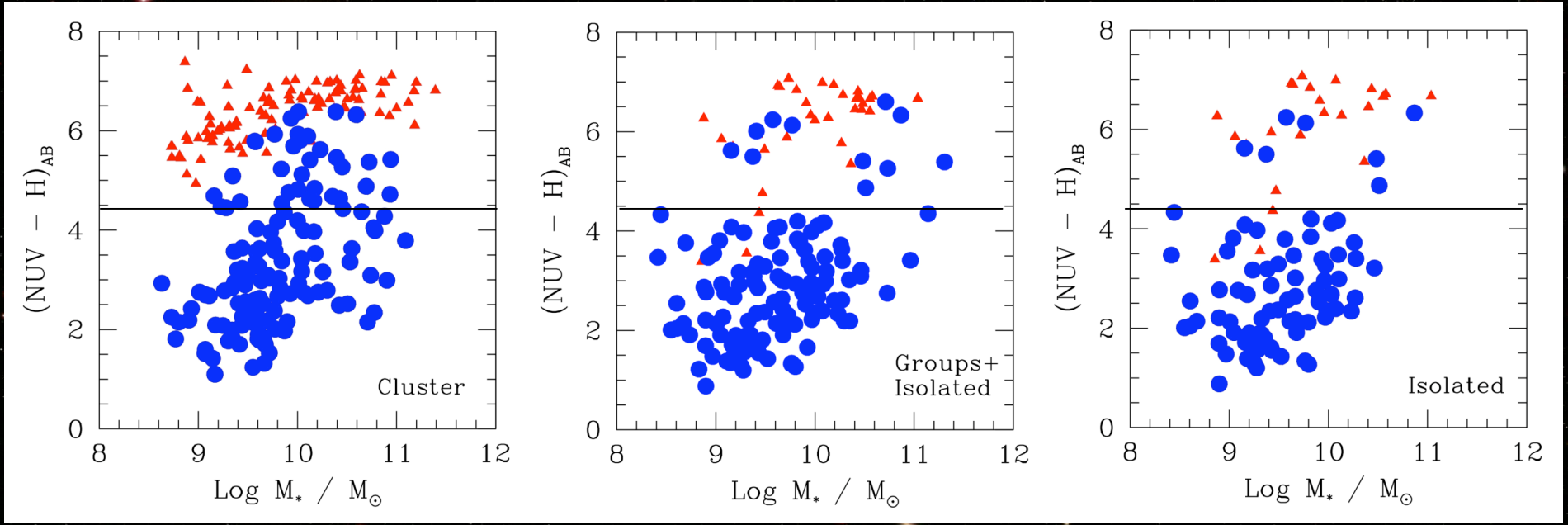


Hughes & Cortese, MNRAS in press

Red circles: AGN
Cyan circles: SF + AGN

Green circles: HI Def > 0.5

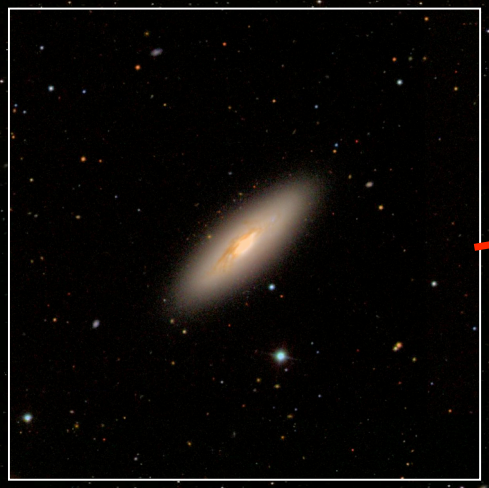
High vs. low densities

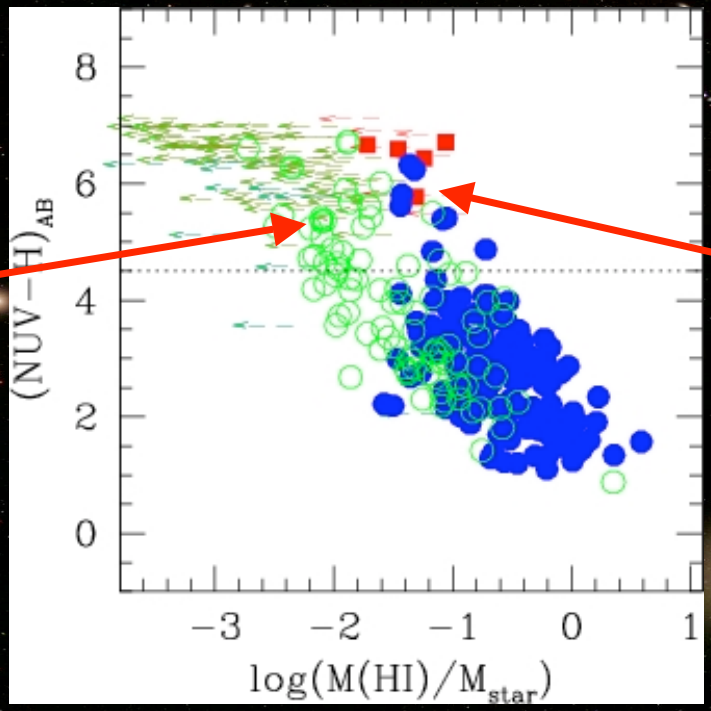


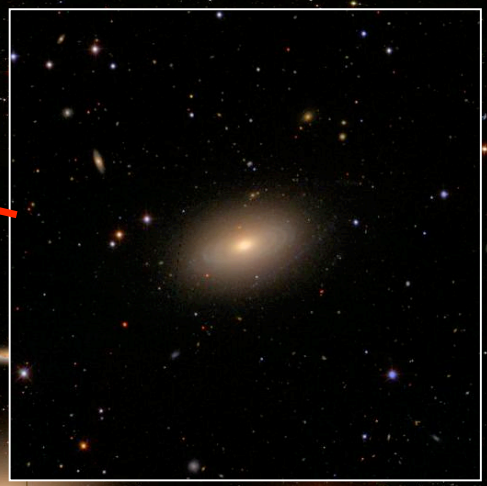
Hughes & Cortese, MNRAS in press

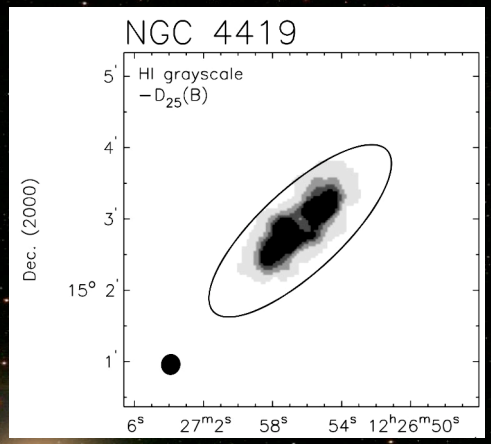
Migrating galaxies are mainly gas deficient, cluster spirals

Red colour ⟶ Low gas-fraction





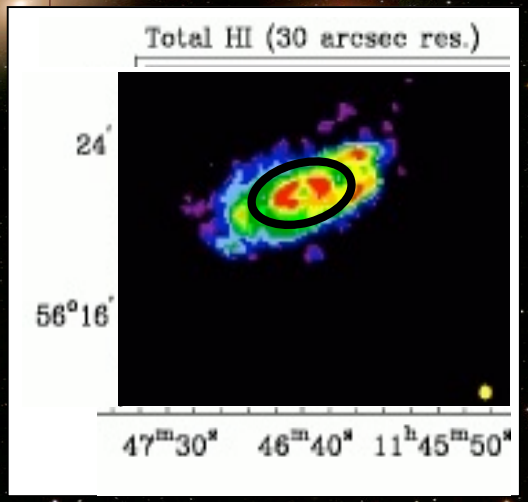




VIVA survey

Some star-forming galaxies outside the blue sequence have normal Gas-fraction.

No clear HI truncation.



WHISP survey

Different mechanisms at work?

Summary

- AGN feedback-quenching link can't be assumed from nuclear activity-colour correlation
- Migrating galaxies are mainly HI deficient , cluster spirals
- Environmental mechanisms appear responsible for driving migration
- Still need to understand evolution of red, gas-rich systems

astro-ph:0903.3574