

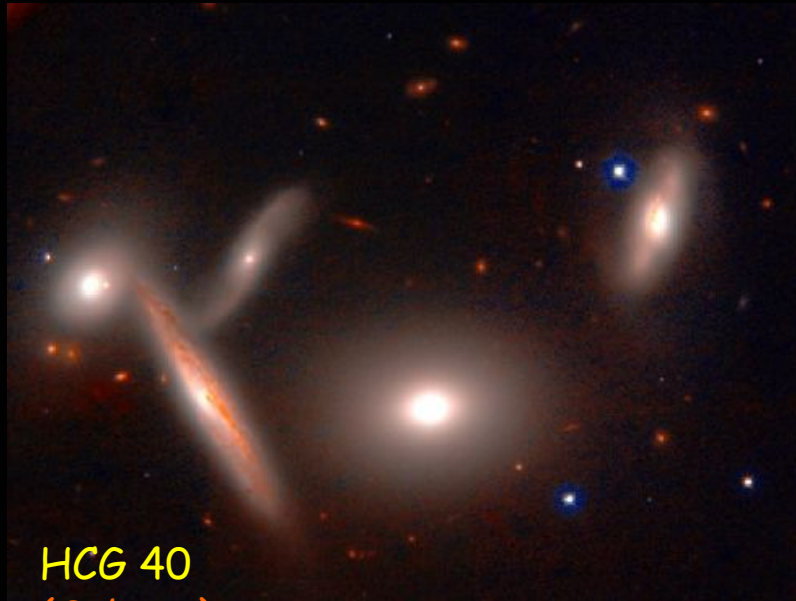
# Stellar Populations in Elliptical Galaxies of Compact Groups

de la Rosa, I.G. (IAC, Spain & IAG, Brazil)

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HCG 40  
(Subaru)

Best place for galaxy- galaxy  
interactions



ANTENNAE-IR  
(WIRC/Palomar)

Interaction → Activity

## HICKSON COMPACT GROUPS

No activity enhancement detected

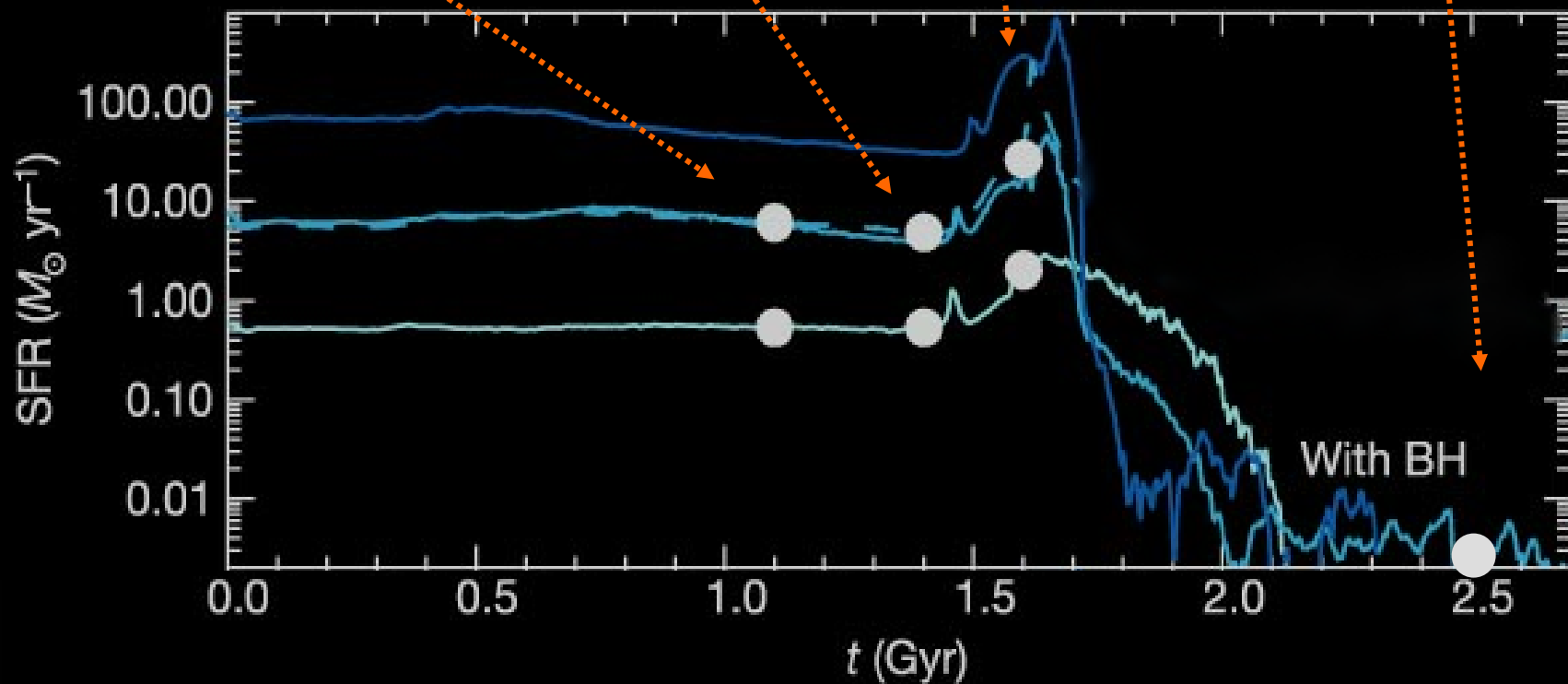
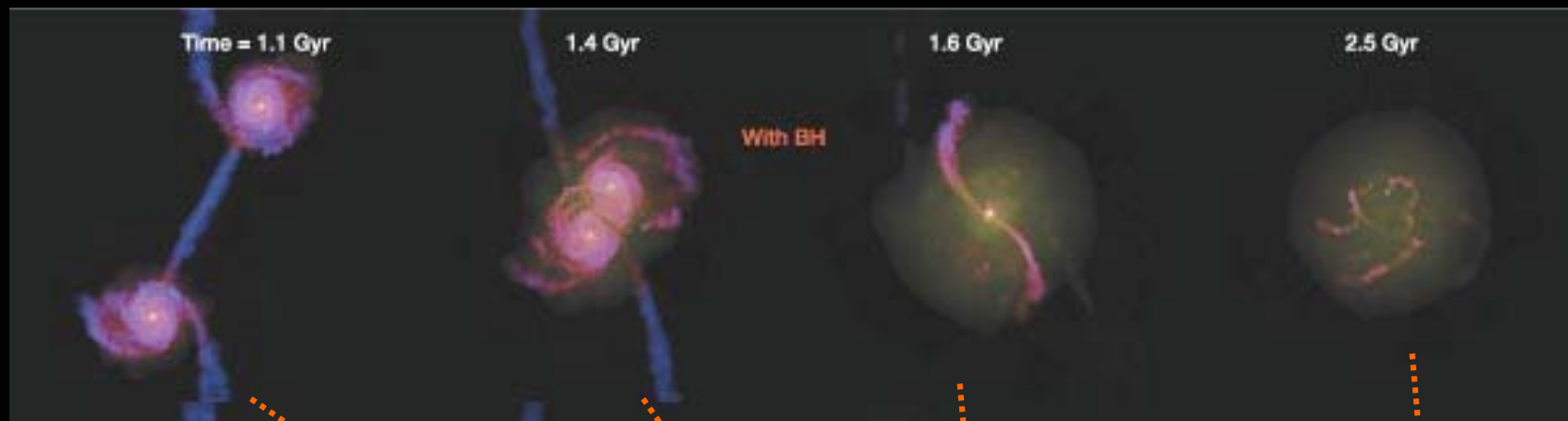
## GROUPS

Hostile environment for galaxy activity

(Wilman et al. 2005)

- Fraction of "active" galaxies is higher in the field

# Di Matteo, Springel & Hernquist (2005)

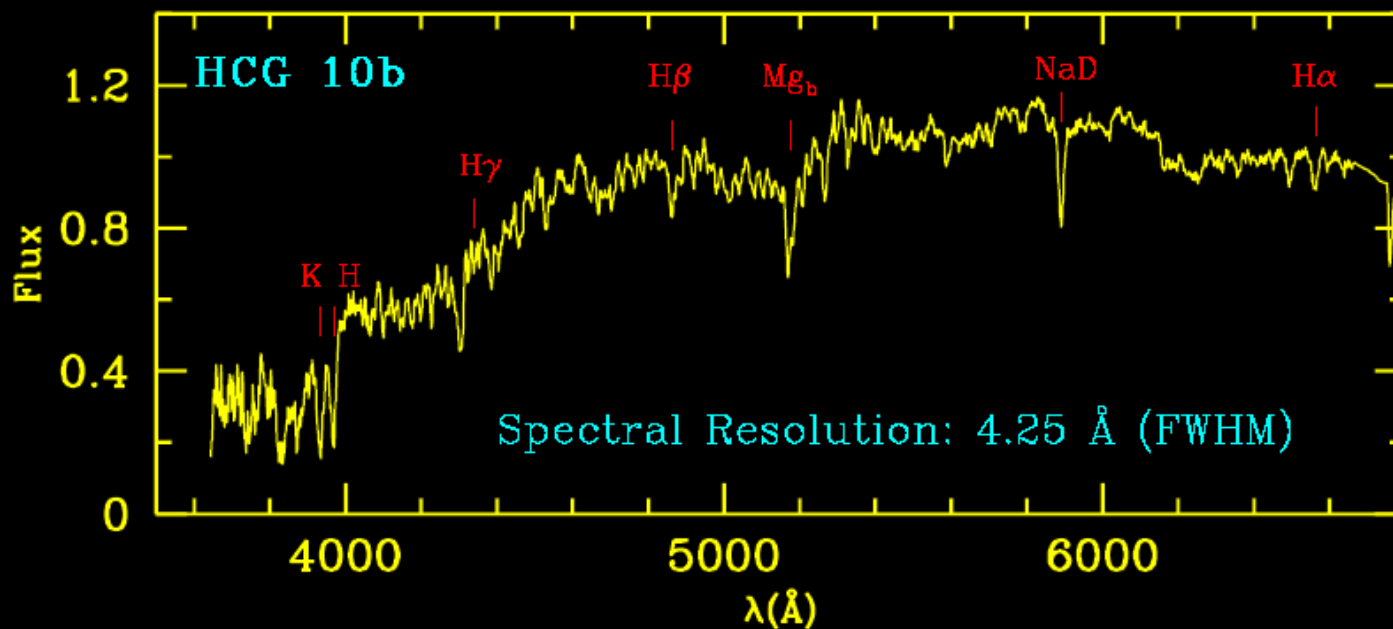


# OBSERVATIONS AND STUDY

Long-slit spectra at KPNO 2.1m telescope

22 Elliptical galaxies in HCGs  
12 Elliptical galaxies in the field

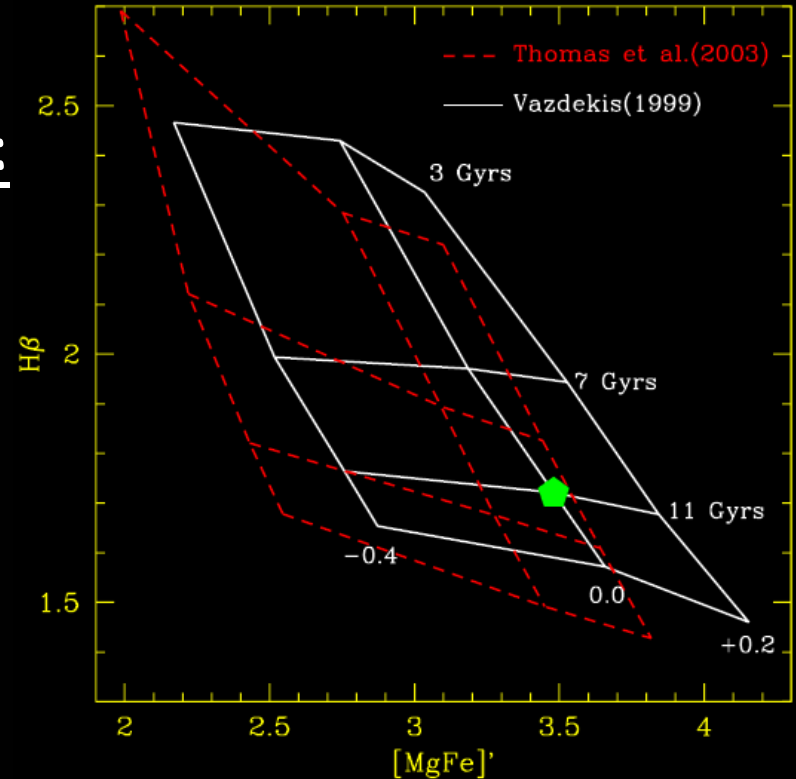
$\langle S/N \rangle = 55$



# REDUCTION STRATEGY

## DOUBLE MODEL/REDUCTION:

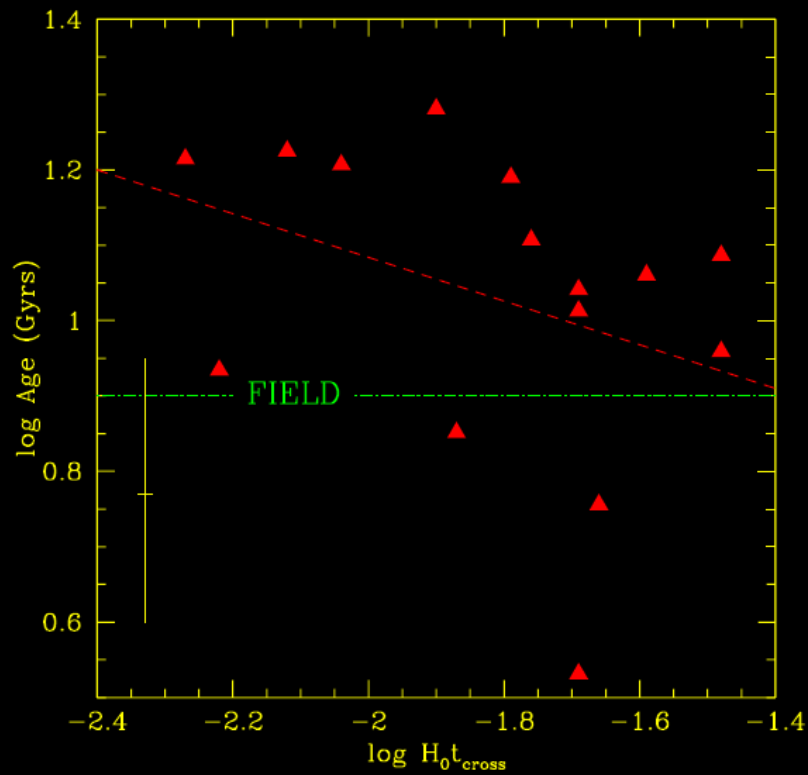
- Vazdekis (1999)
- Thomas et al (2003)



## DOUBLE EMISSION-CORRECTION:

González (1993)  
Caldwell et al (2003)

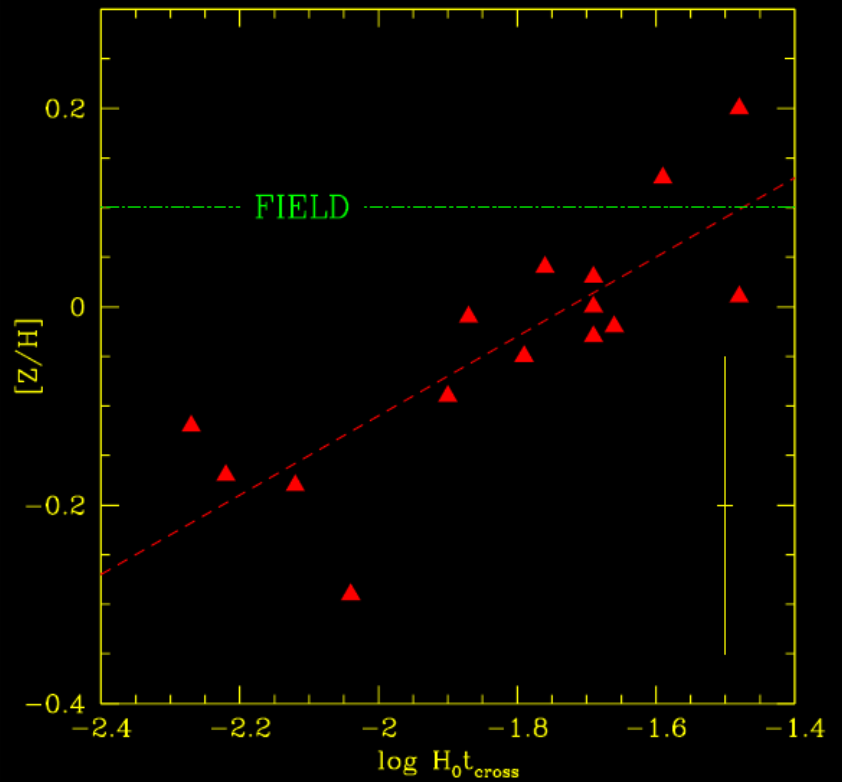
# RESULTS



Dynamically evolved



Dynamically young



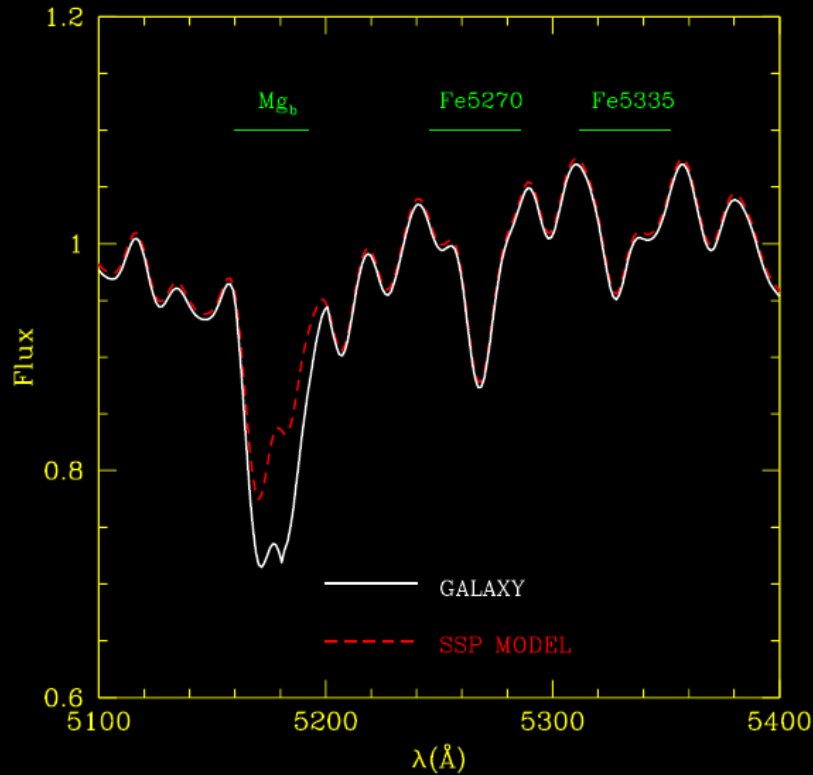
Dynamically evolved



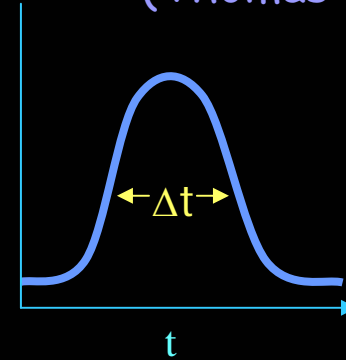
Dynamically young

# $\alpha$ -Enhancement $[\alpha/Fe]$

(Thomas et al. 2005)

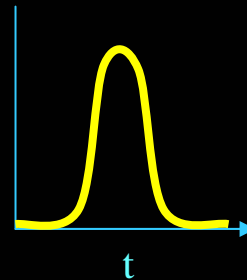


SFR

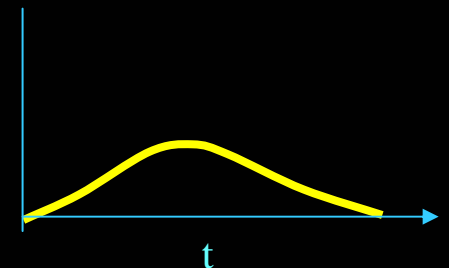


$$[\alpha/Fe] \approx 1/5 - 1/6 \log \Delta t$$

High  $[\alpha/Fe]$  ----->

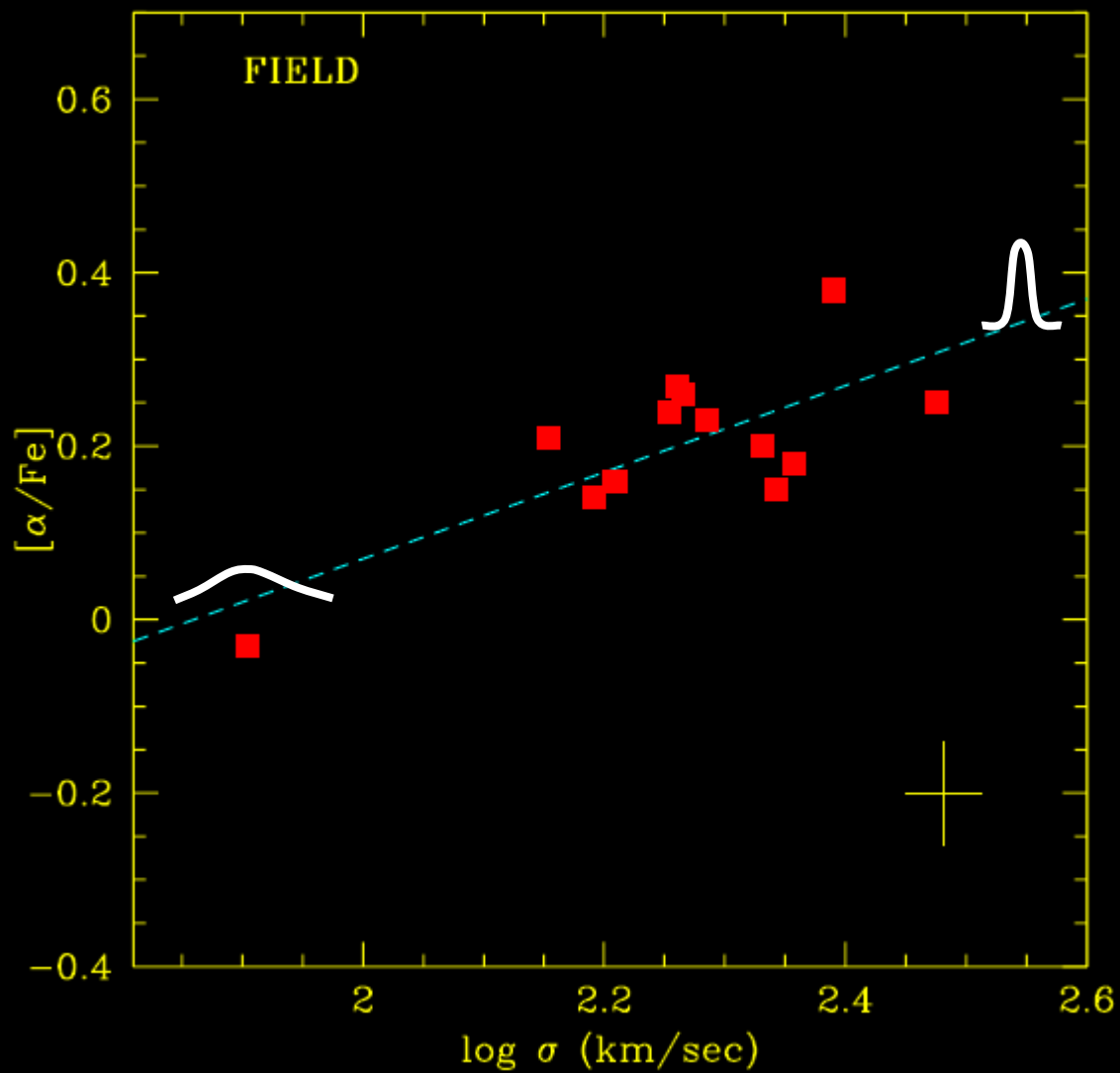


Low  $[\alpha/Fe]$  ----->

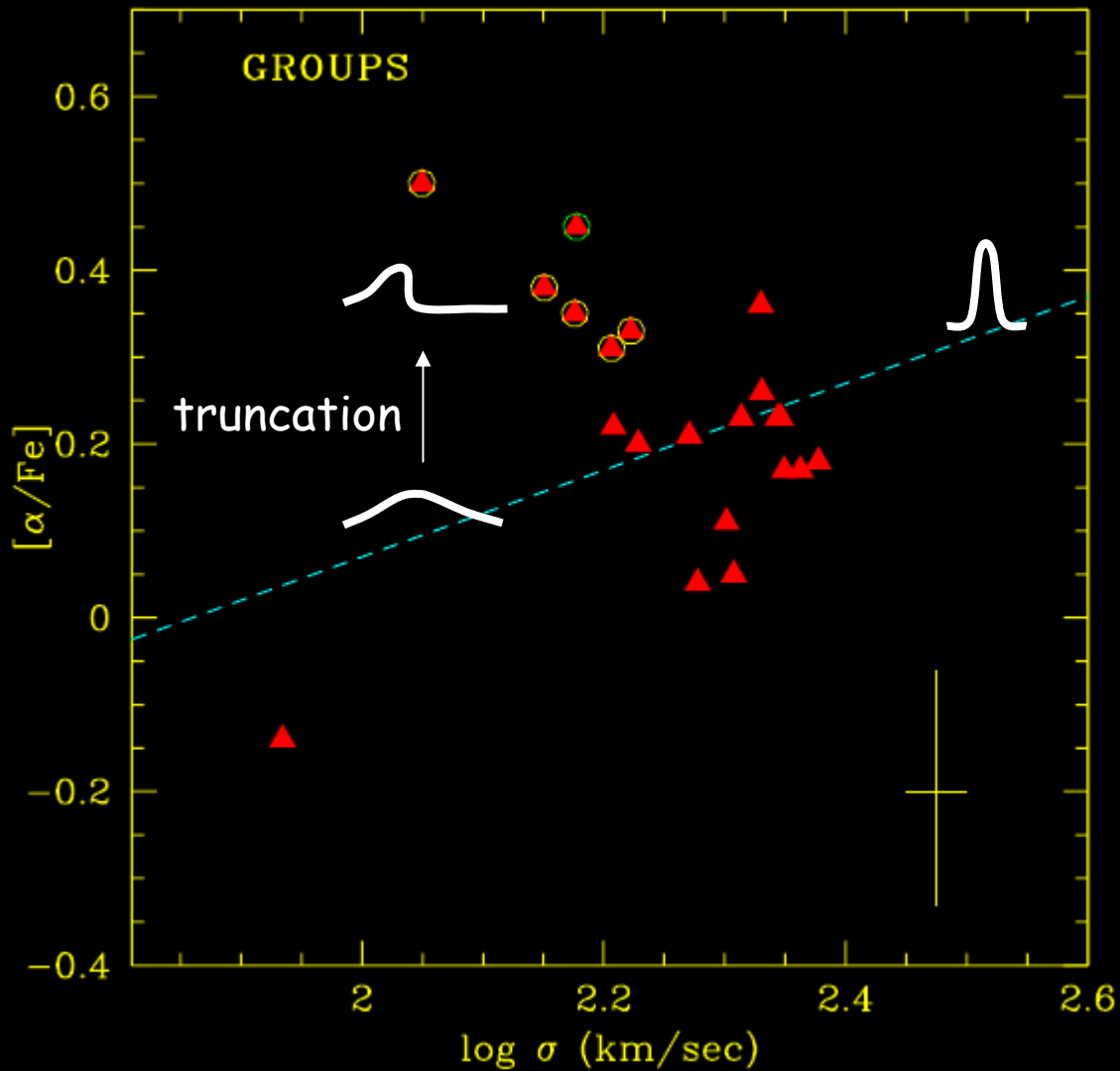




# RESULTS $[\alpha/\text{Fe}]$ The Field



# RESULTS $[\alpha/\text{Fe}]$ Compact Groups

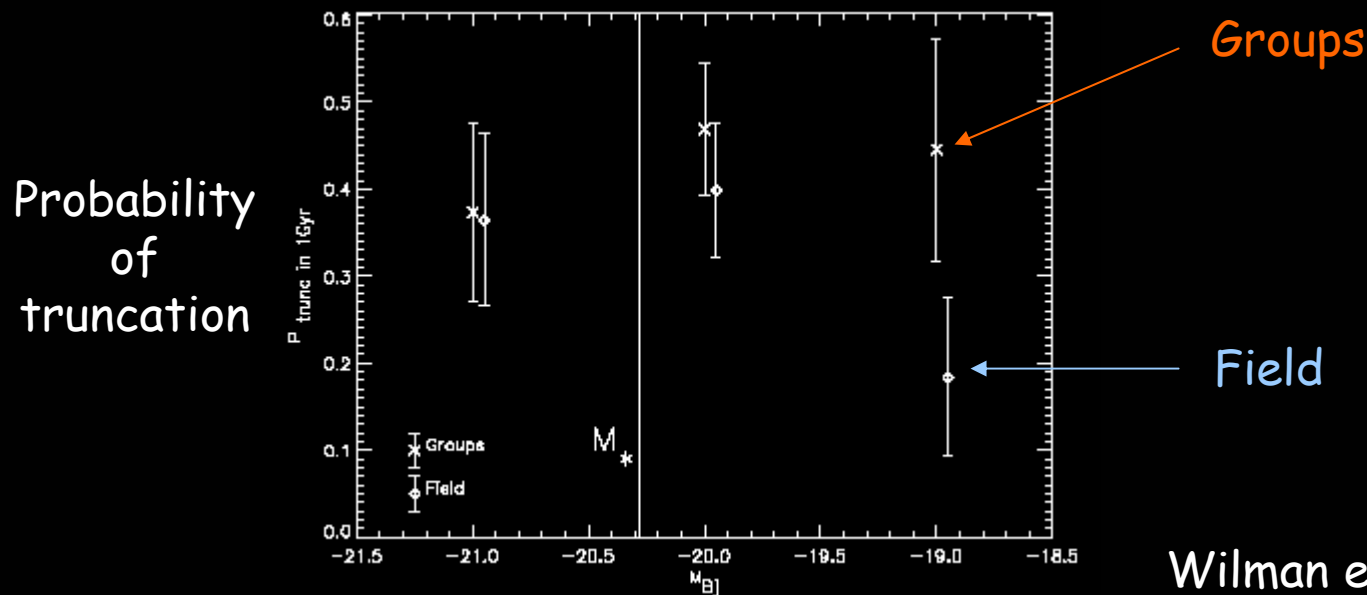


# Who are those "truncated" galaxies ?

	"truncated"	rest of sample
Mass	$10^{10.5} M_{\odot}$	$10^{11} M_{\odot}$
Luminosity	$M_B = -19.5$	$M_B = -20.7$
Profiles	extended	
Ellipse	100% disky	46% disky
Crossing time	$\log H_0 t_{\text{cross}}: -2.1$	$\log H_0 t_{\text{cross}}: -1.8$

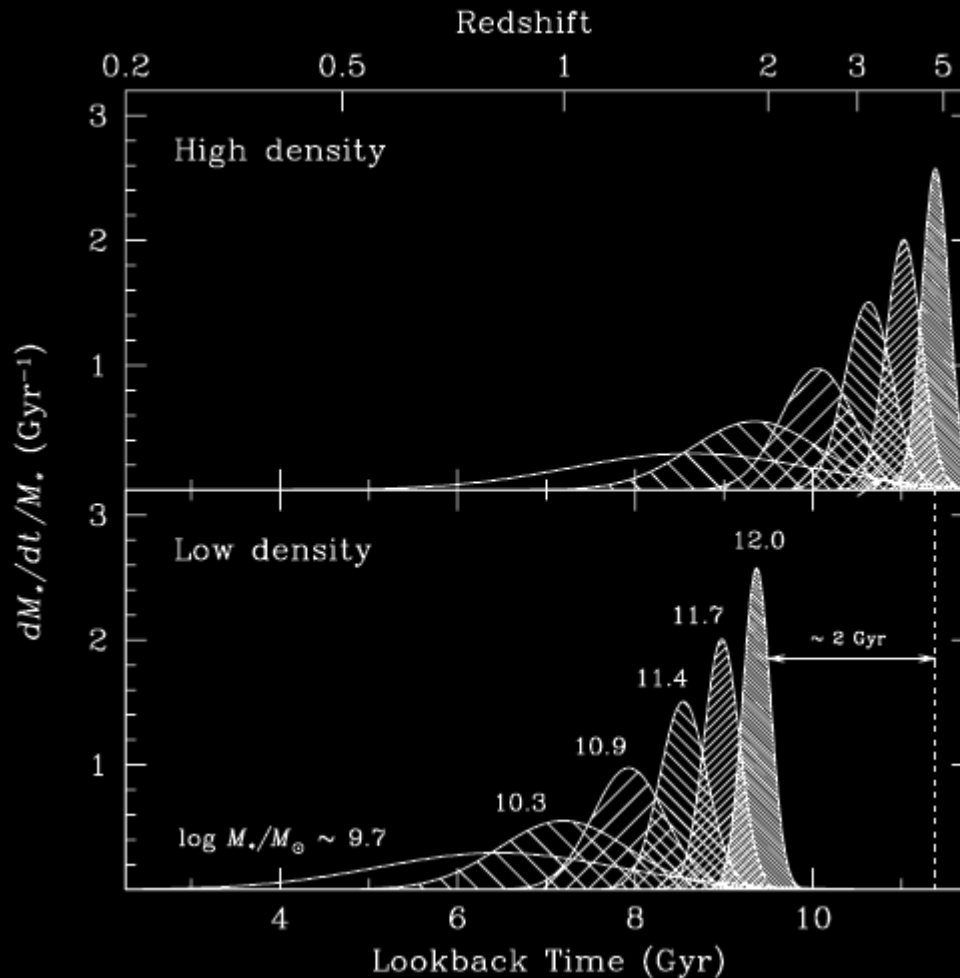
# A working scenario

- Galaxy infall into the potential well
- Large galaxies left undisturbed
- Faint galaxies interact and have their SF truncated



Wilman et al. 2005

# Why only low-mass galaxies ?



(Thomas et al. 2005)

"Only low-mass galaxies exhibit significant SF at  $z \leq 1$ "