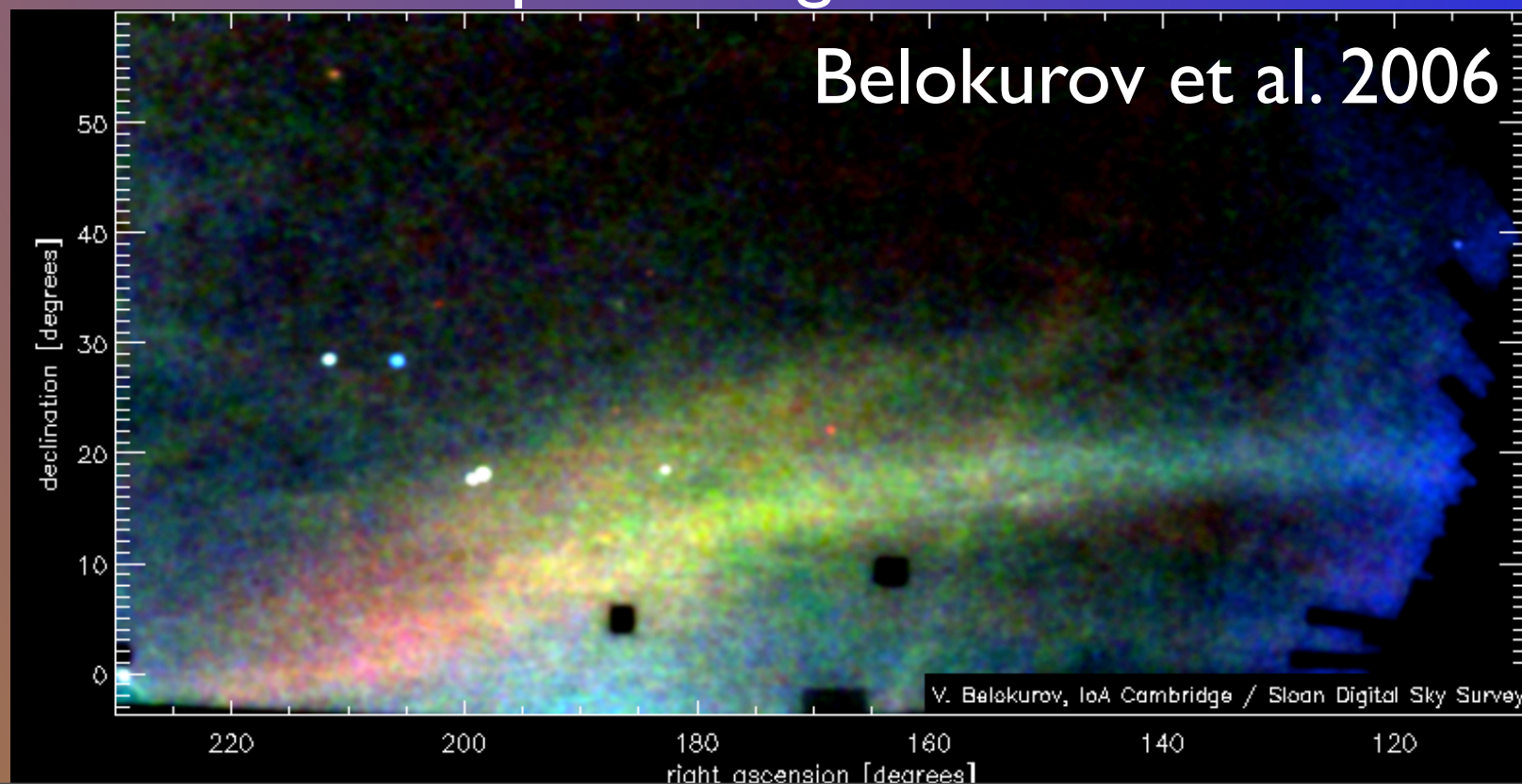


# Blue Stragglers in the Field of the Milky Way halo

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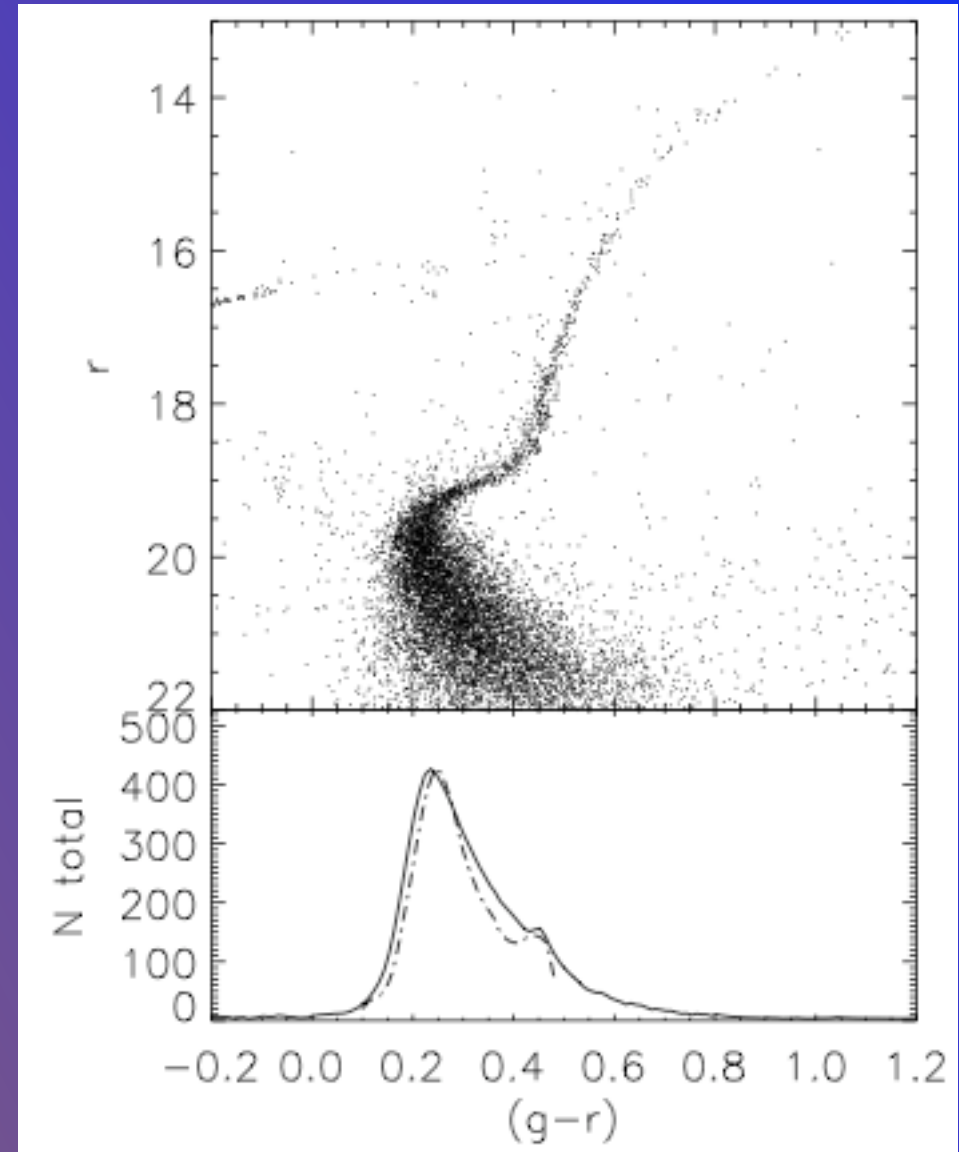
# The stellar content Galactic halo field

- It is a complicated structure as it shows overdensities and streams which might be related with past mergers.



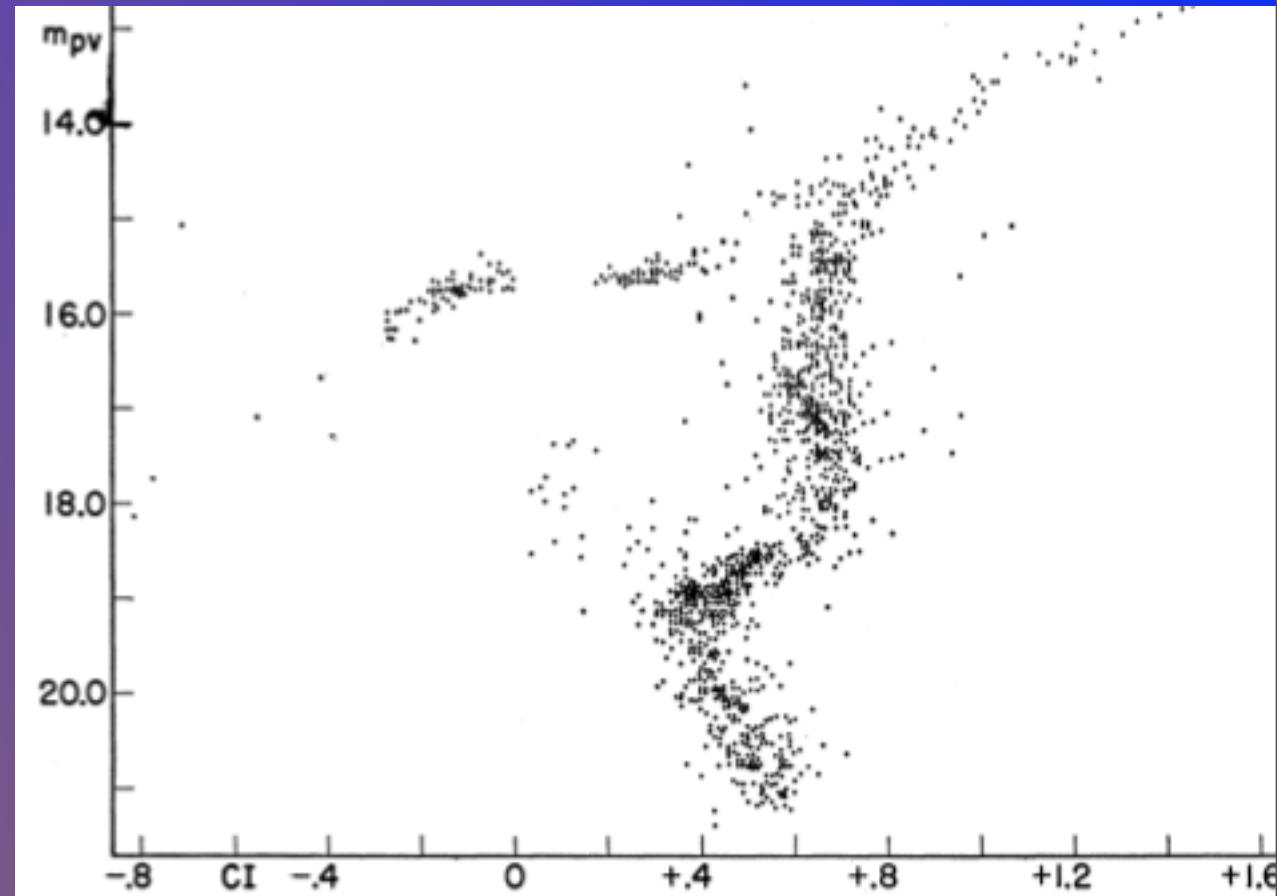
# The stellar content Galactic halo field

- On the other side, it has also a simple structure as we can find with large spectroscopic surveys one dominant population.
- It can be related with the past monolithic collapse proposed by Eggen, Lynden-Bell and Sandage in 1962



# Blue Stragglers in a dominant population

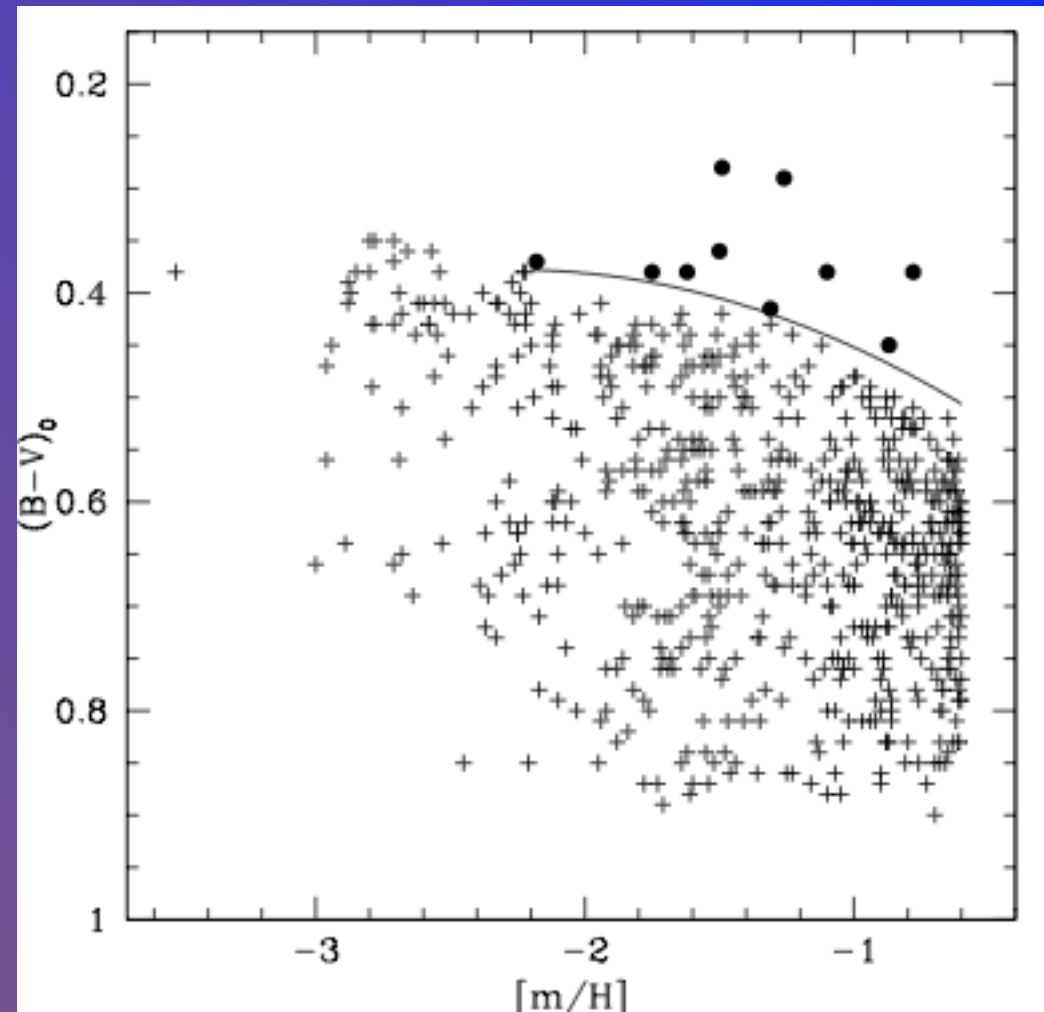
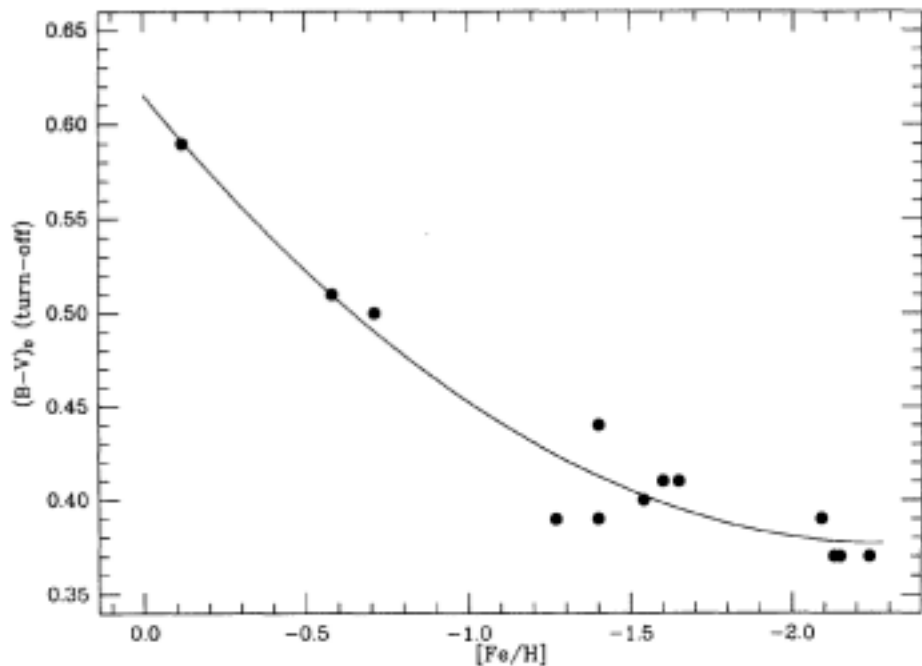
- Blue Stragglers are bluer than the main-sequence turn-off color of a population



M3 (Sandage 1953)

# Blue Stragglers in a dominant population

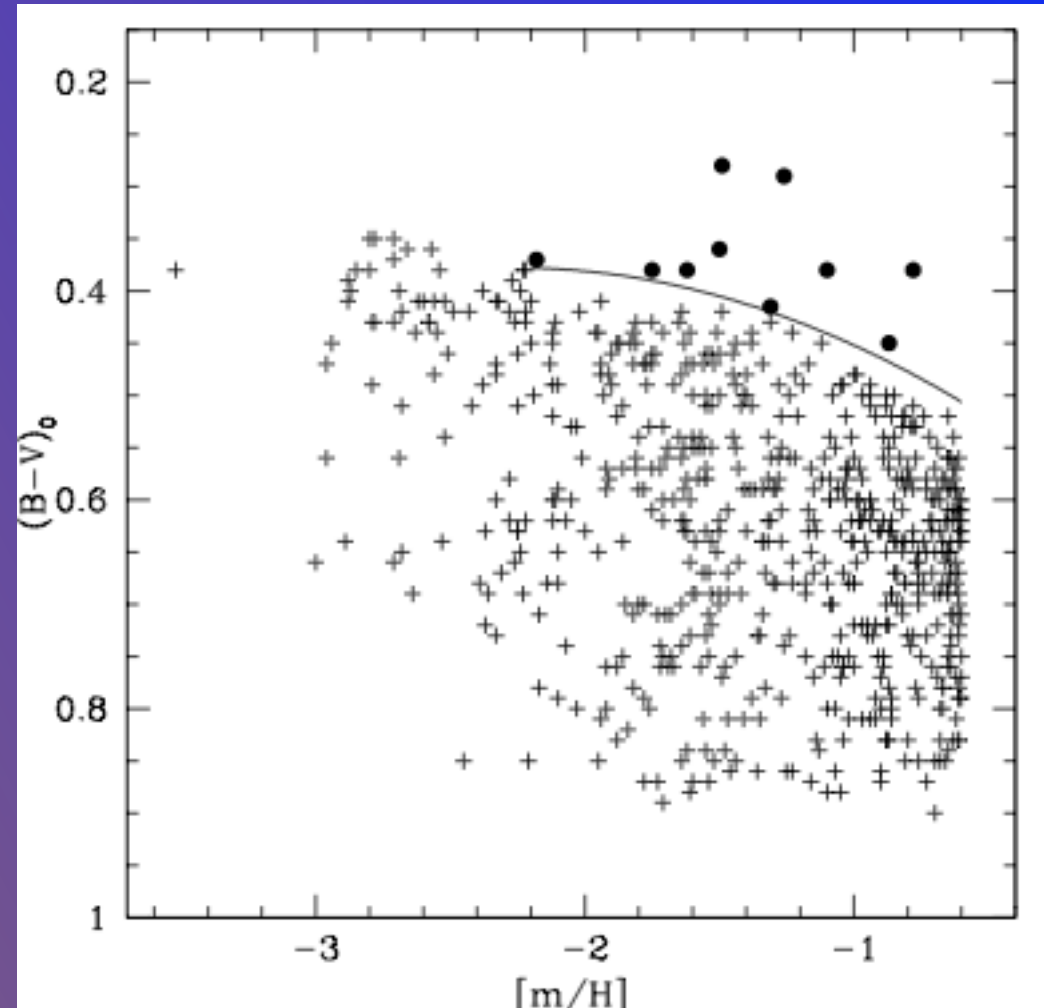
- Carney et al 1994: If turn-off color is an unique function of metallicity for globular cluster, one can draw this relation and look for blue stragglers which lie above that limit



Carney et al. 2001

# Era of Galaxy stellar surveys: Blue Stragglers in the field

- By having many stars, we can find the turn-off color as a function of metallicity directly from the field stars
- 1. Avoid systematic differences such as color-transformations or metallicity determinations
- 2. Can obtain high accuracy in the turn-off color

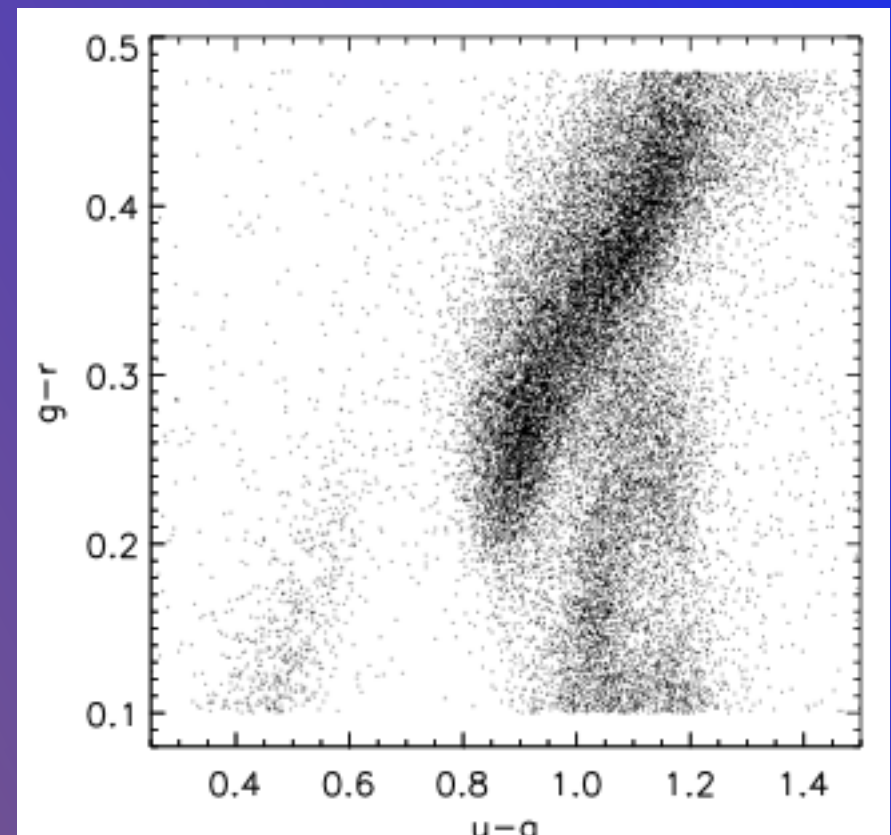


Carney et al 1994, 2001

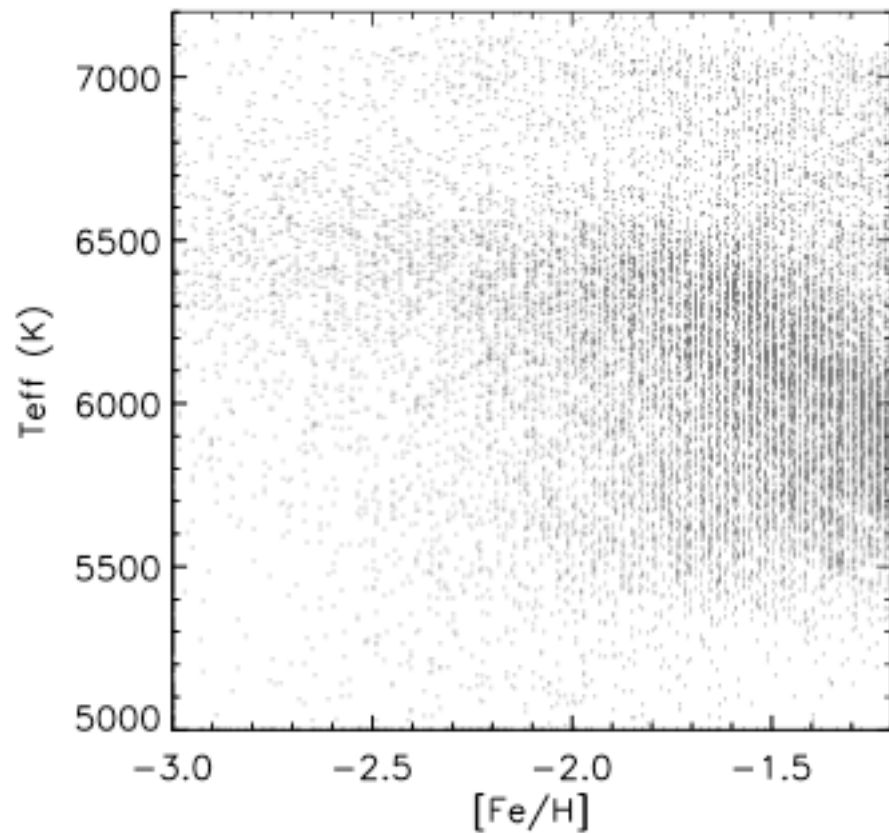
# SDSS-TO: Photometric selection and parameter determination

- We select from SDSS those stars that have main-sequence color and allow bluer colors too.
- We take their low resolution spectra and determine temperature and metallicity using the MAX automatic code (Jofre et al 2010)

“G-blue” sample  
(Jofre and Weiss 2011)

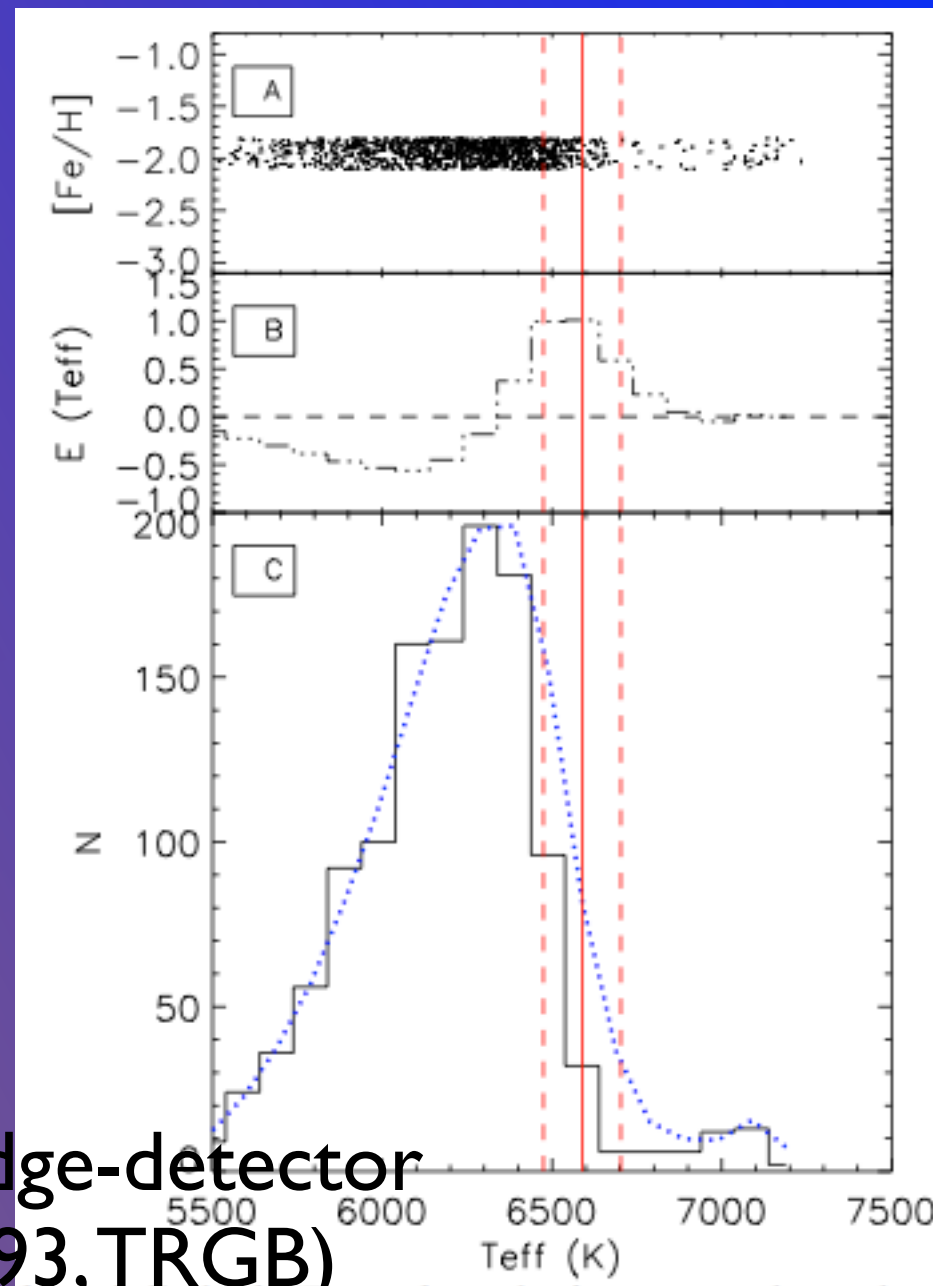
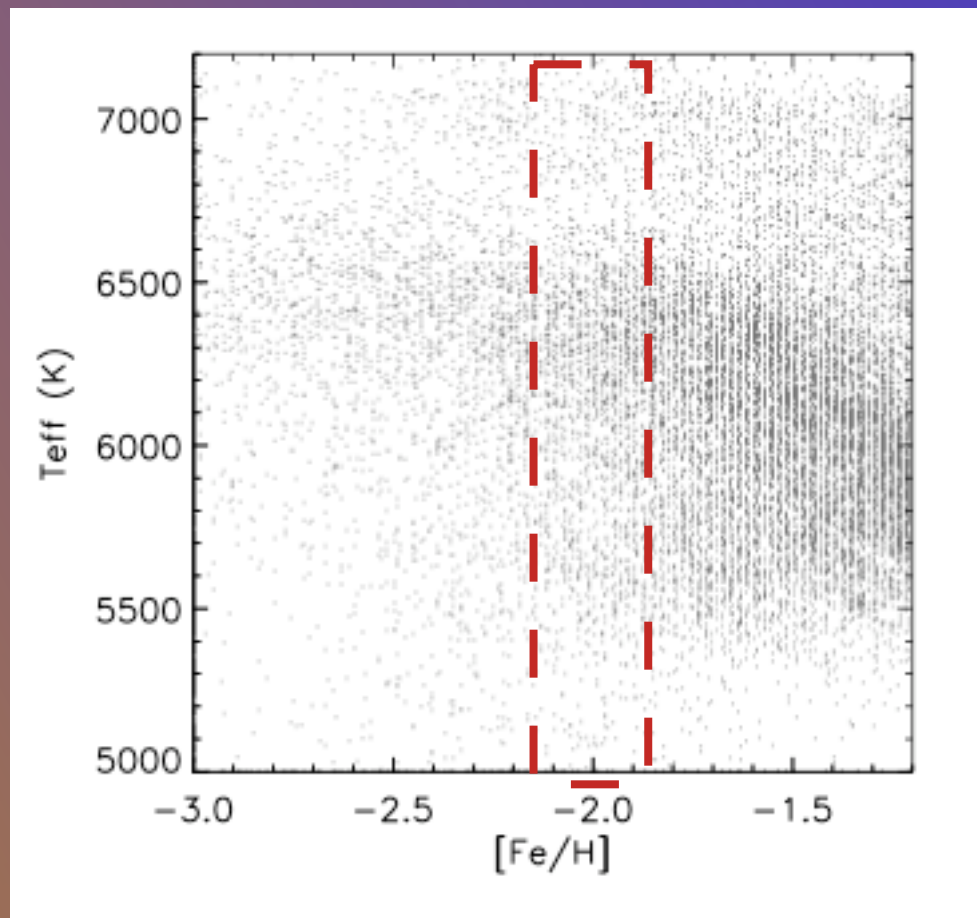


# Turn-off detection



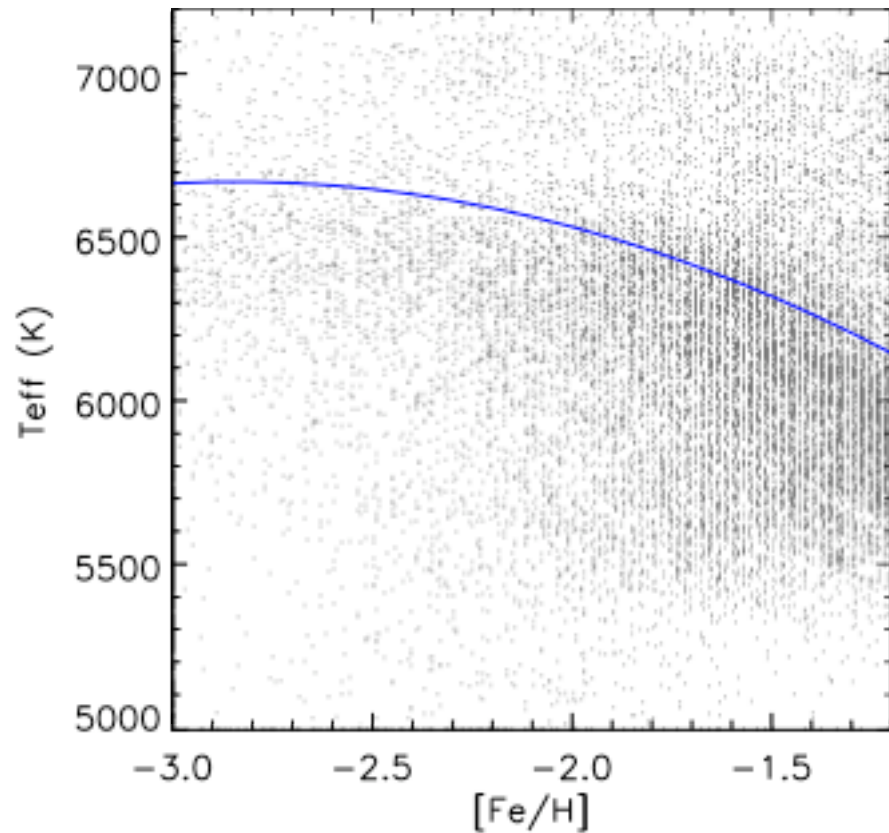


# Turn-off detection



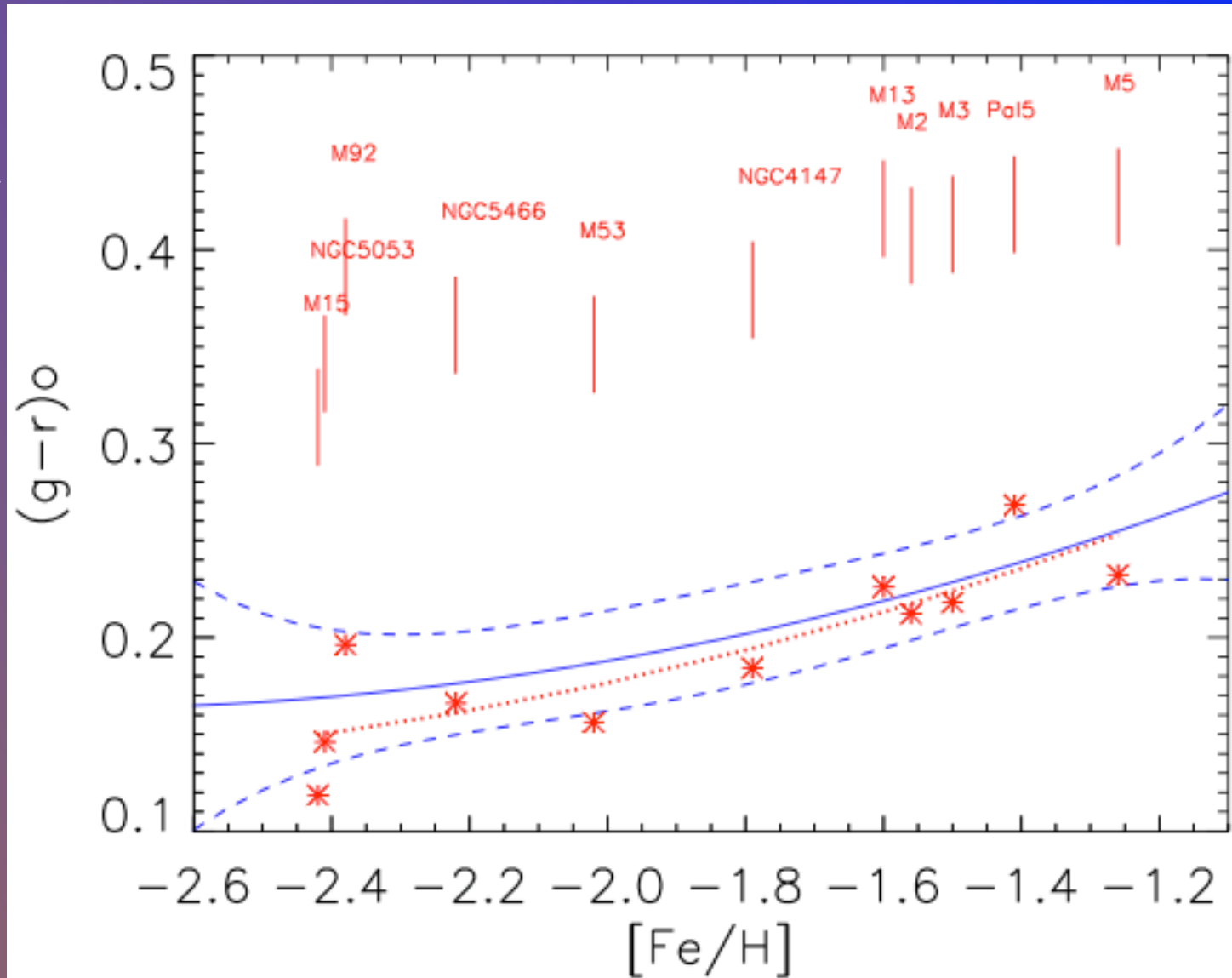
Sobel Kernel edge-detector  
(Lee et al 1993, TRGB)

# Turn-off detection



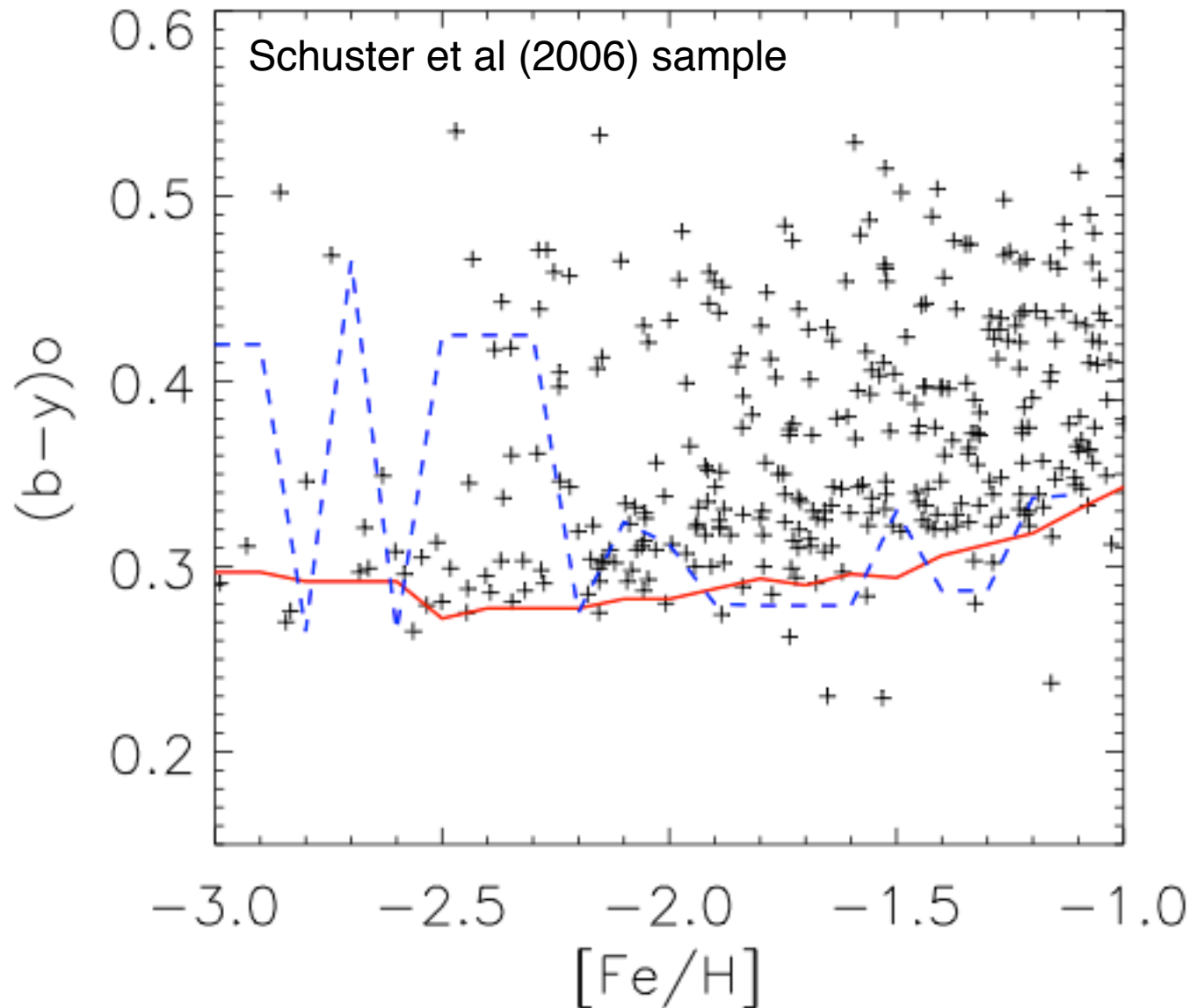
# Turn-off: field v/s clusters

- Agreement of field and cluster TO color as a function of metallicity
- By having the TO color of field, we can look at lower metallicities than what GC's allow



# Turn-off: massive surveys

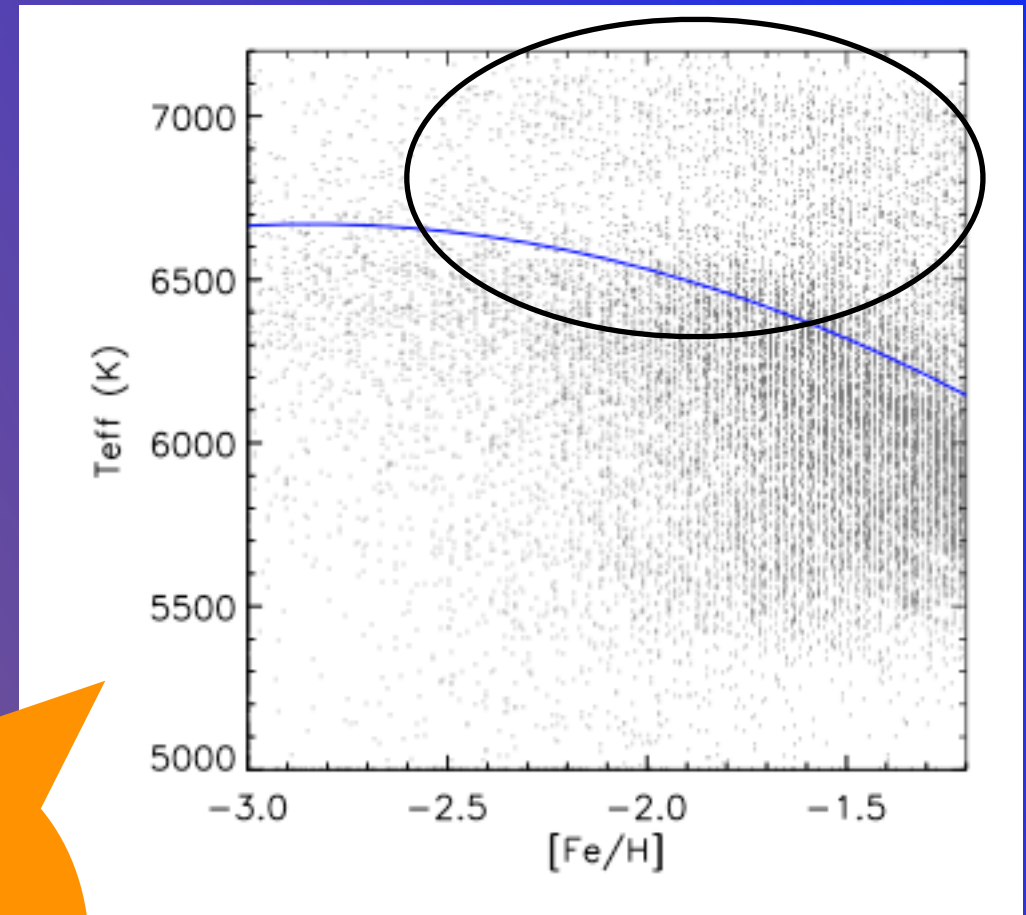
- Agreement of field TO color with different samples
- From large surveys we obtain a more accurate turn-off, especially at low metallicities



# Follow up

- Full kinematics: SDSS proper motions + photometric distances + spectroscopic RV
- Full spectroscopic: SDSS is an ideal survey to target Blue Stragglers and perform follow up high resolution spectroscopy

#BS/#MS  
#BS/#BHB  
BS binarity  
#BS/#IA



SDSS, LAMOST, Gaia,  
Gaia-ESO, HERMES.....