



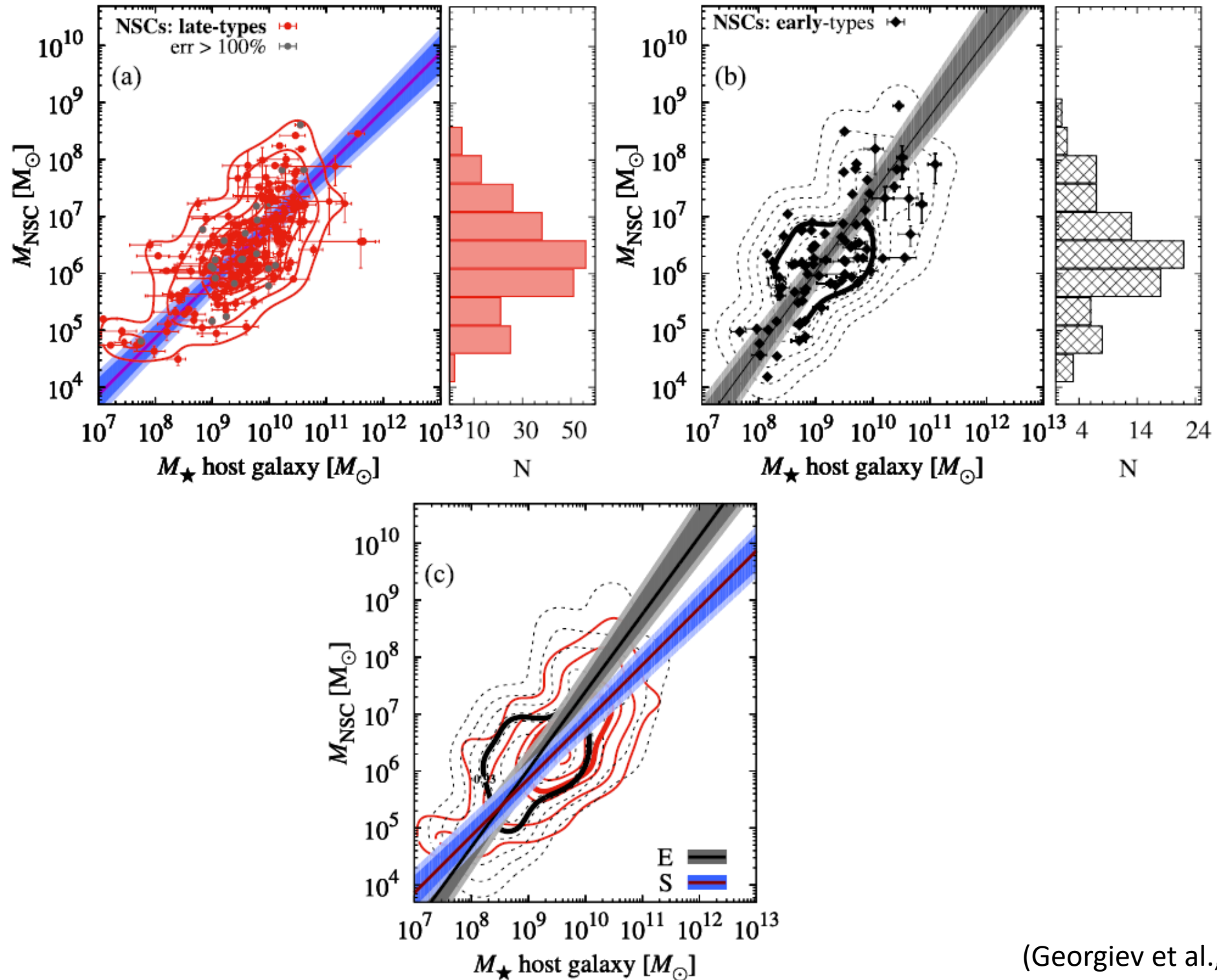
LUND
UNIVERSITY

Clues to galaxy evolution from chemical abundances of stars in the Galactic centre

ASTRONOMDAGARNA ONLINE, BRIAN THORSBRO, OCTOBER 22, 2021

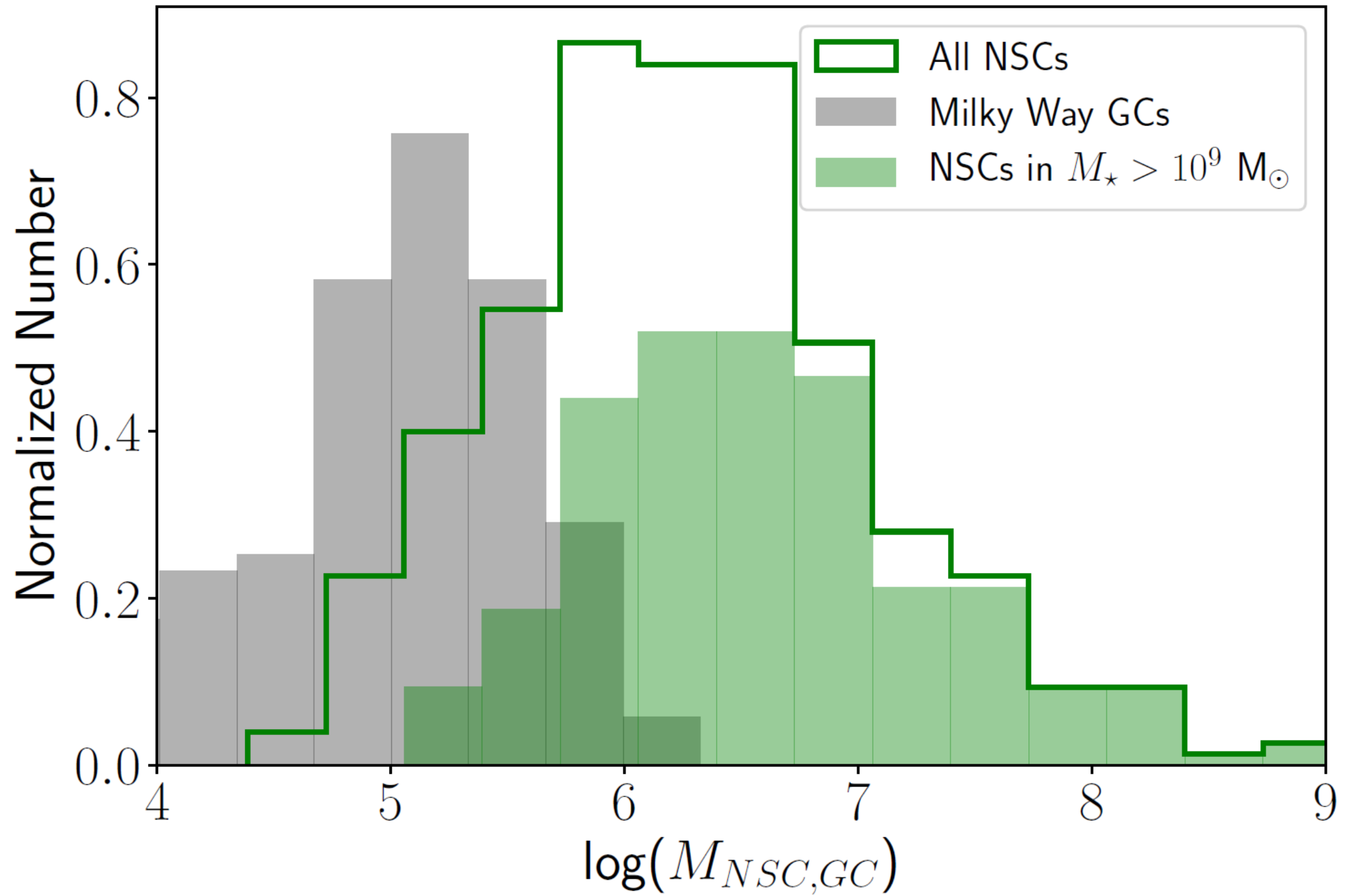


Galaxies and their centres



(Georgiev et al., 2016)

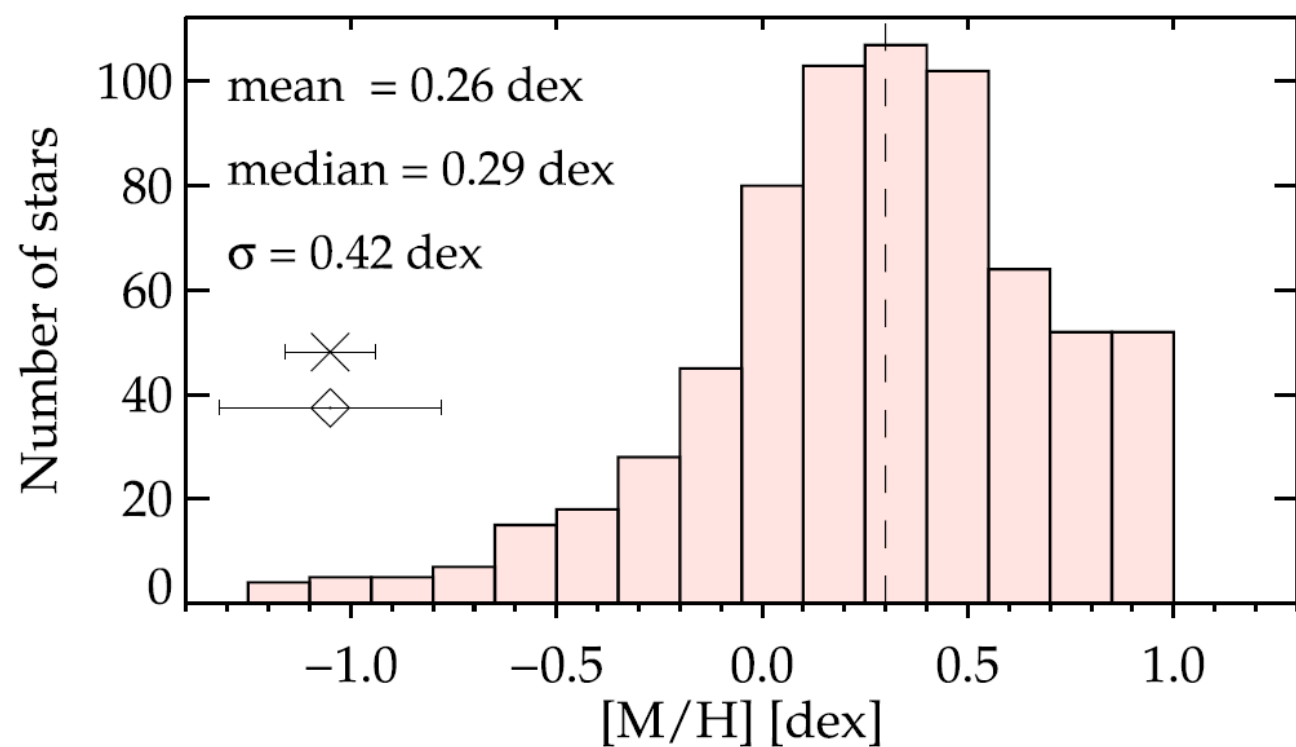
Galaxies and their centres



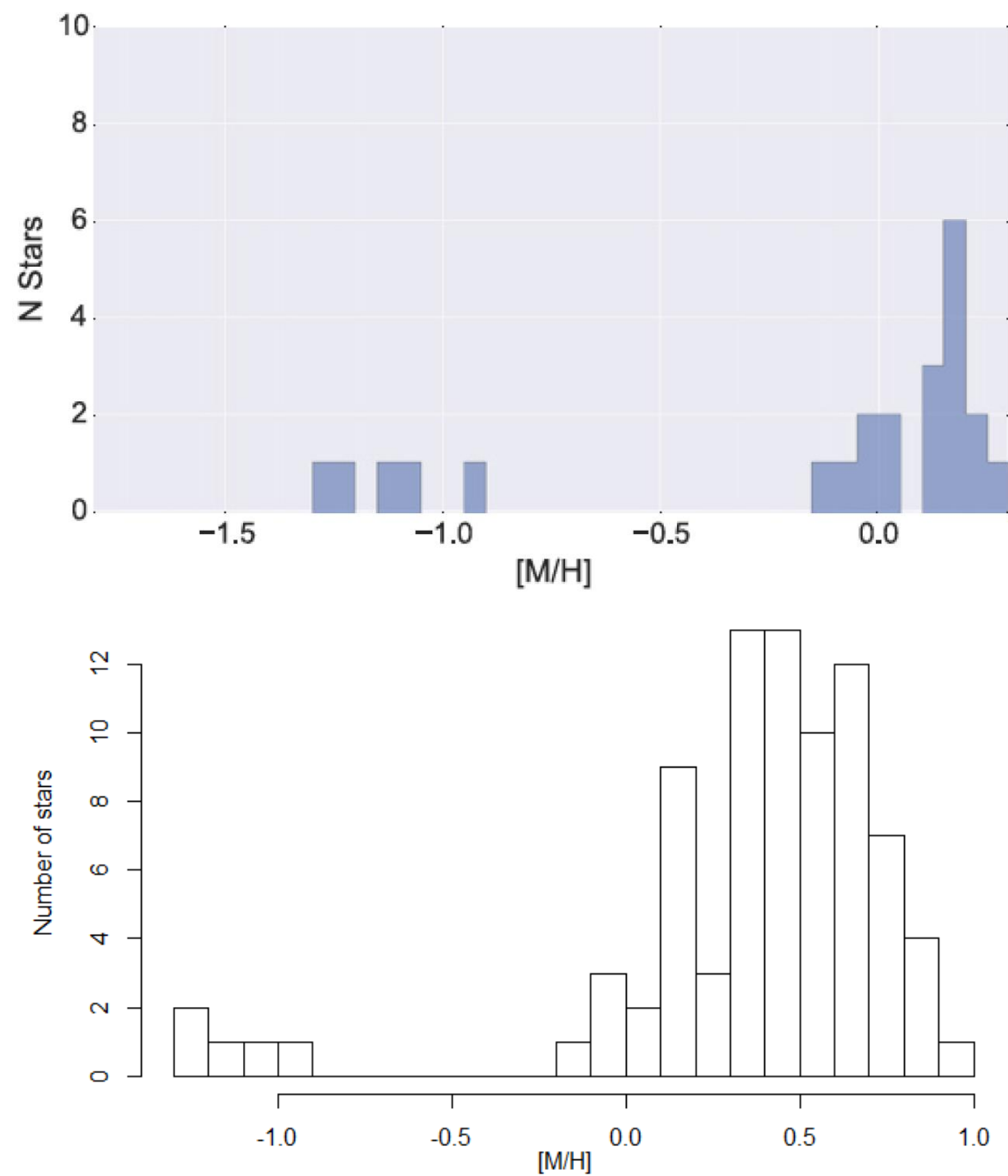
(review by Neumayer et al, 2020)

Nuclear stellar cluster metallicity

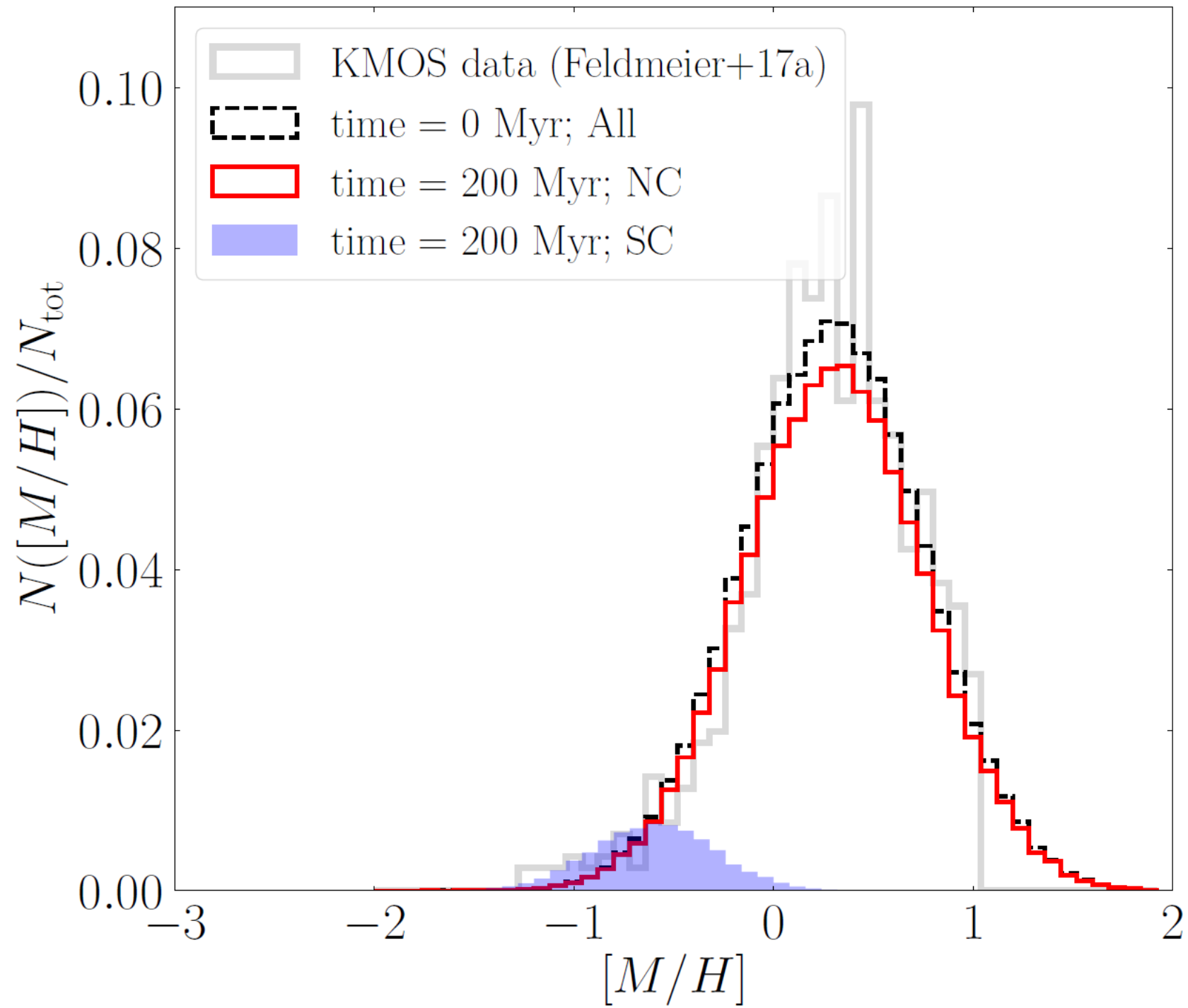
Feldmeier-Krause et al. 2017



Do et al. 2015

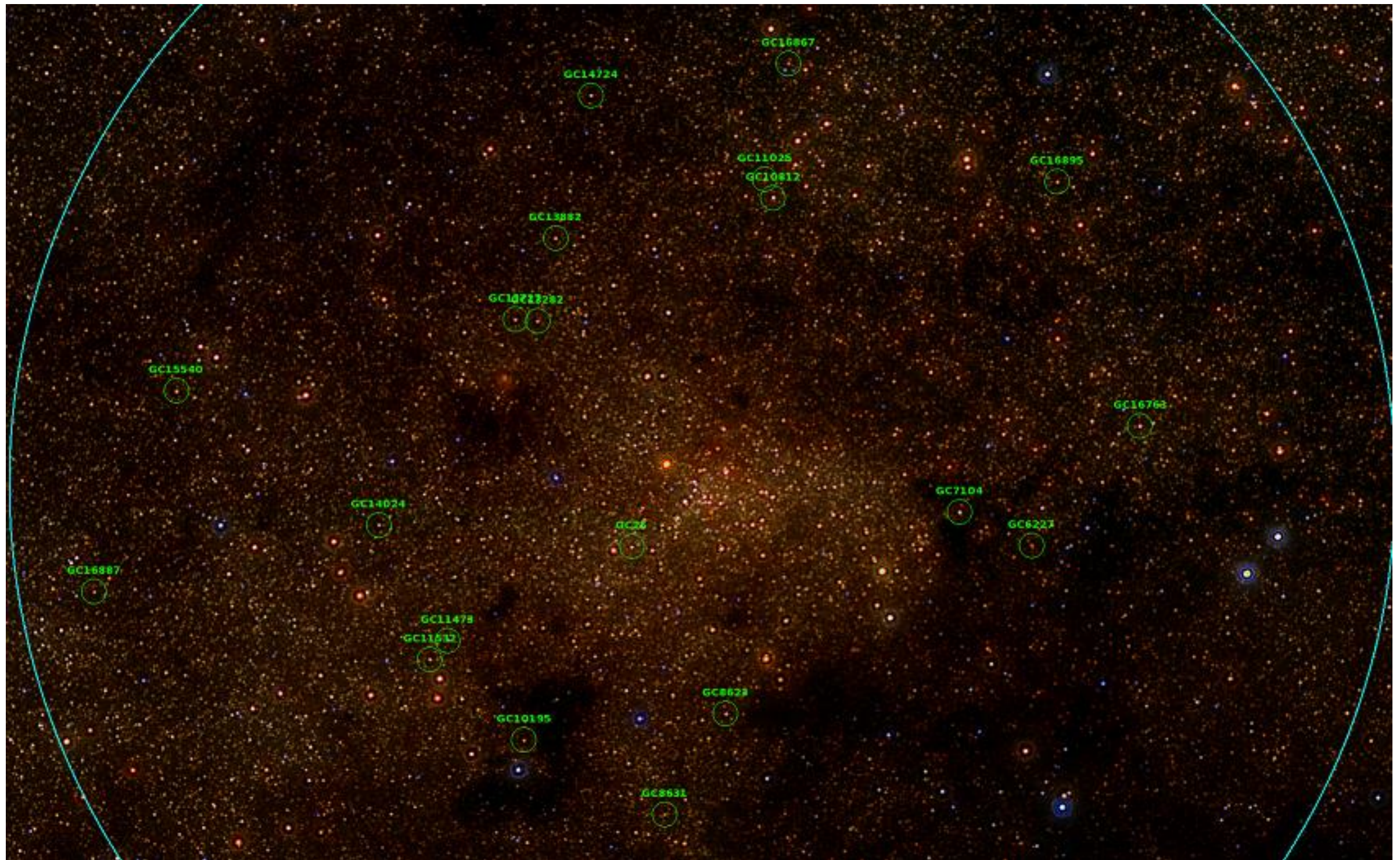


Simulating cluster infall



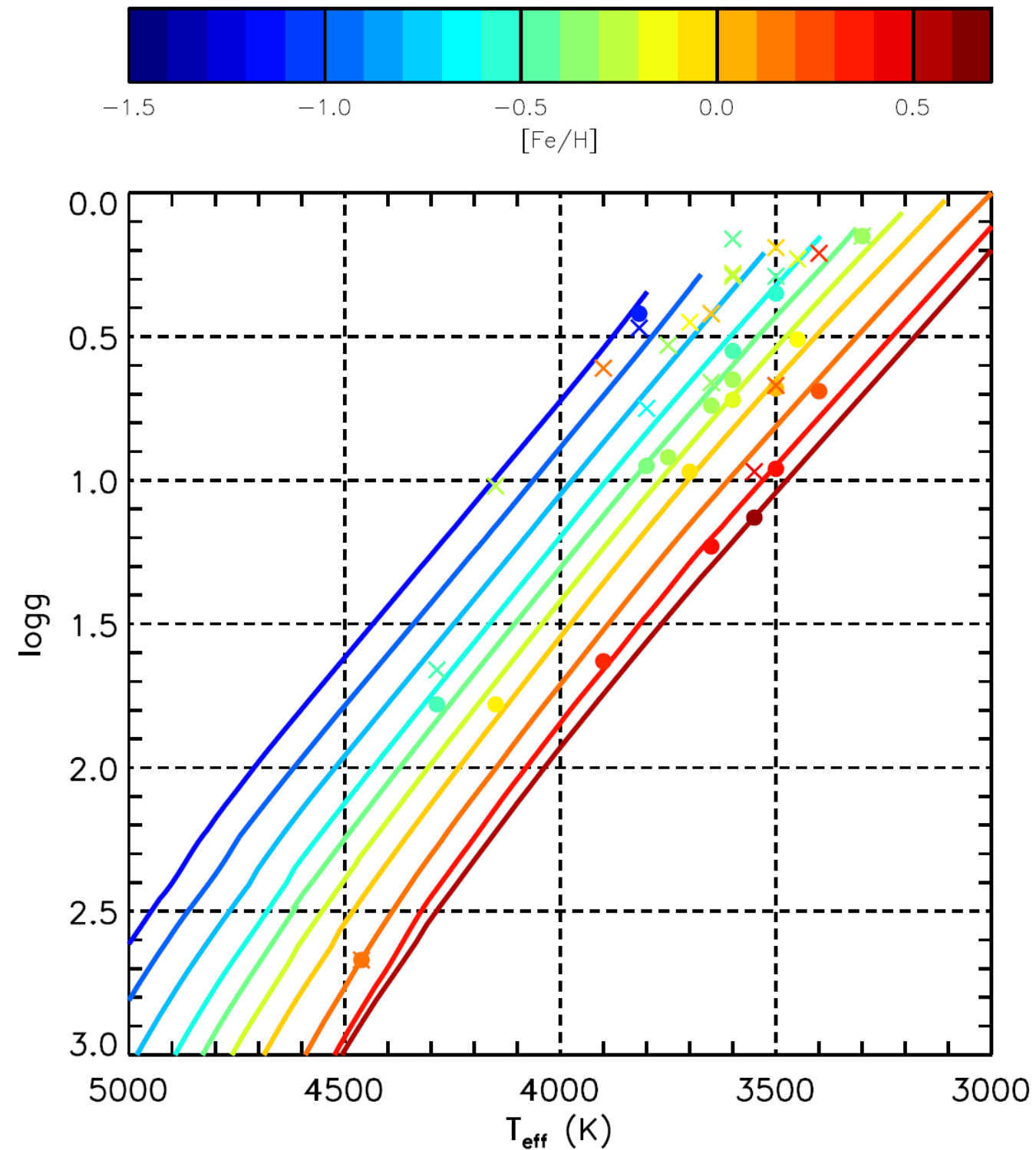
Arca Sedda et al. 2020

Targeted stars, with KECK/NISPEC



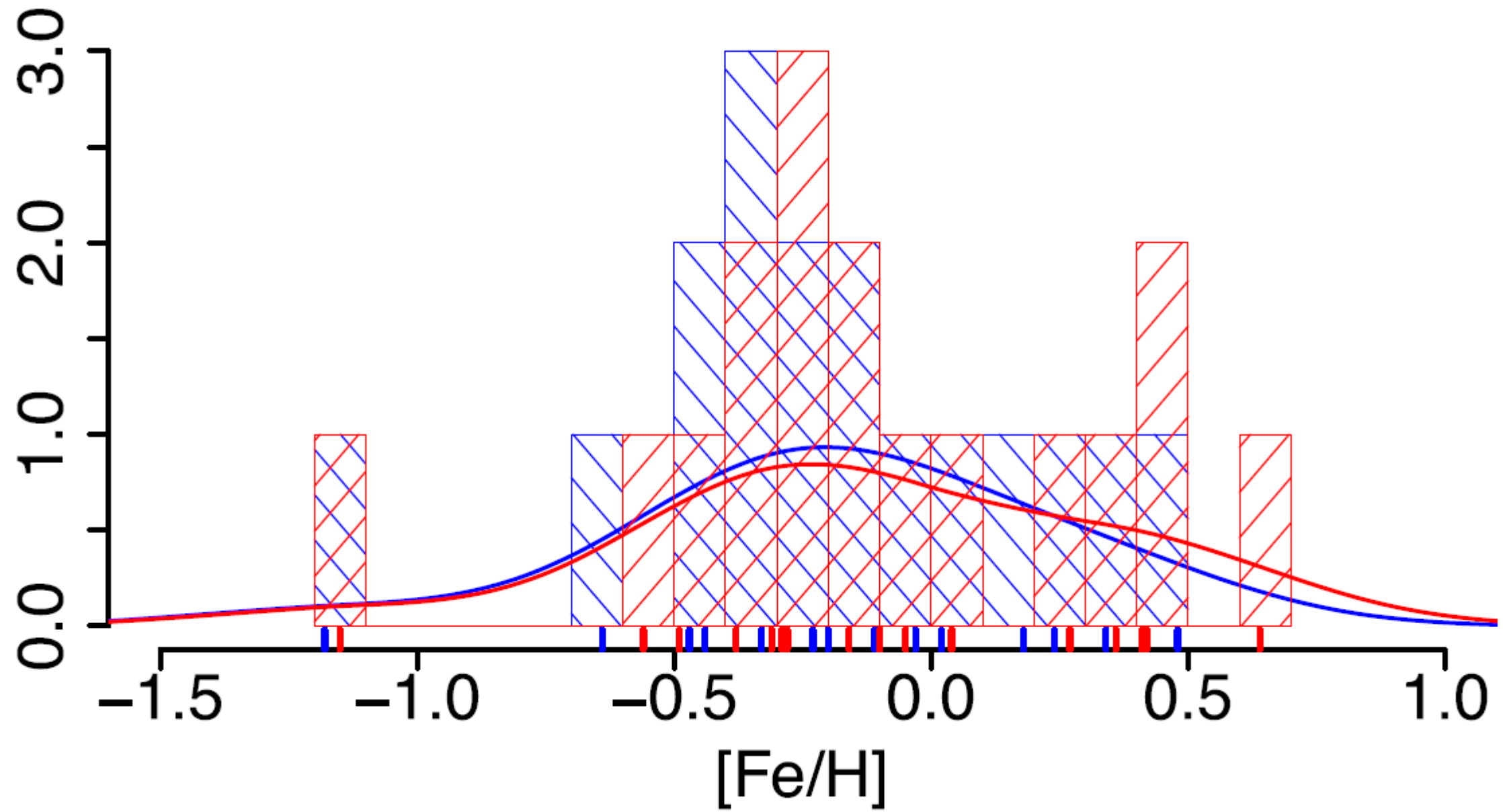
JHKs RGB image from the GALACTICNUCLEUS survey (Nogueras-Lara et al. 2018, 2019)

Isochrone method for logg



(Rich et al. 2017)

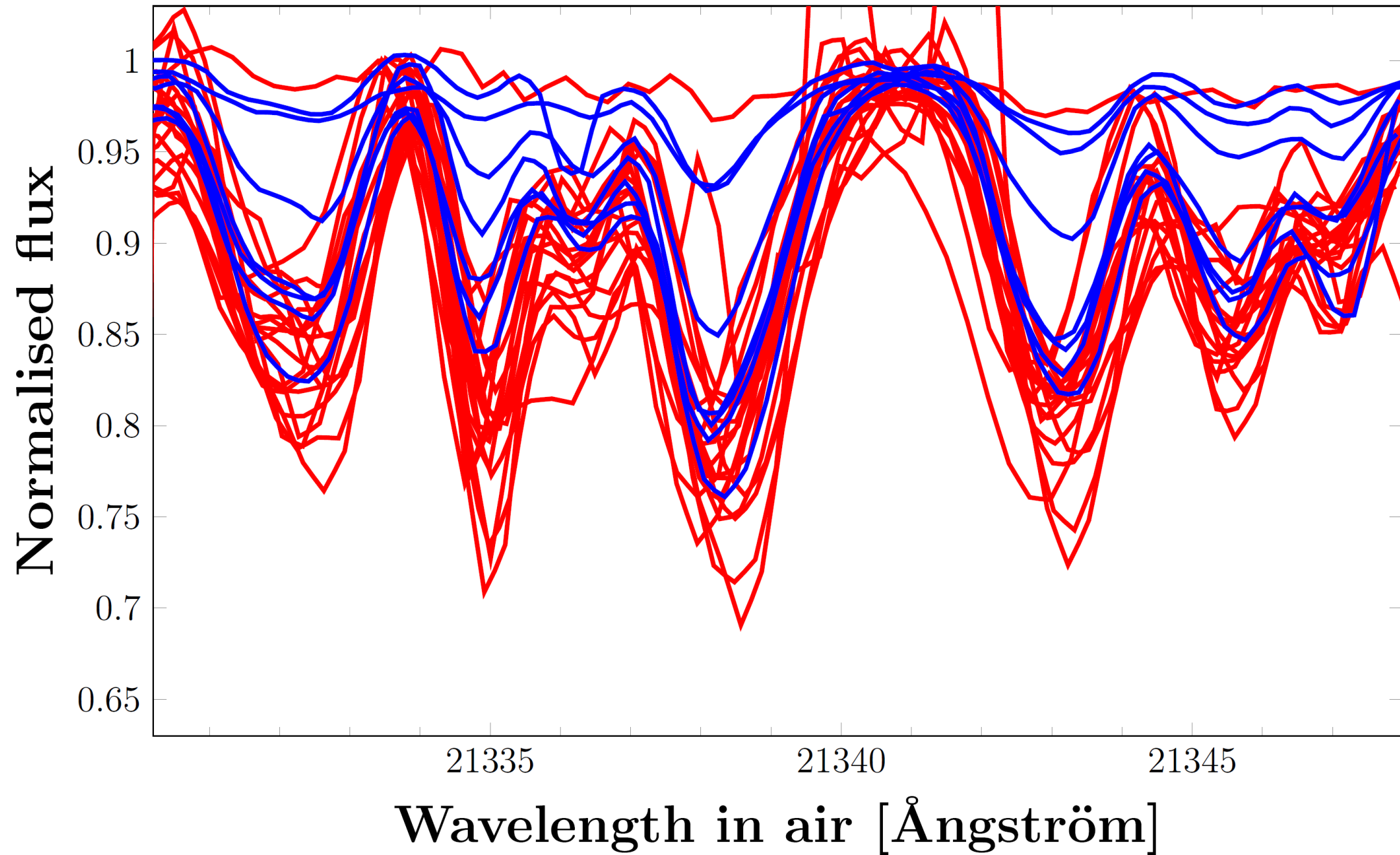
Galactic centre MDF



Blue: Photometry
Red: Isochrone method

(Rich et al. 2017)

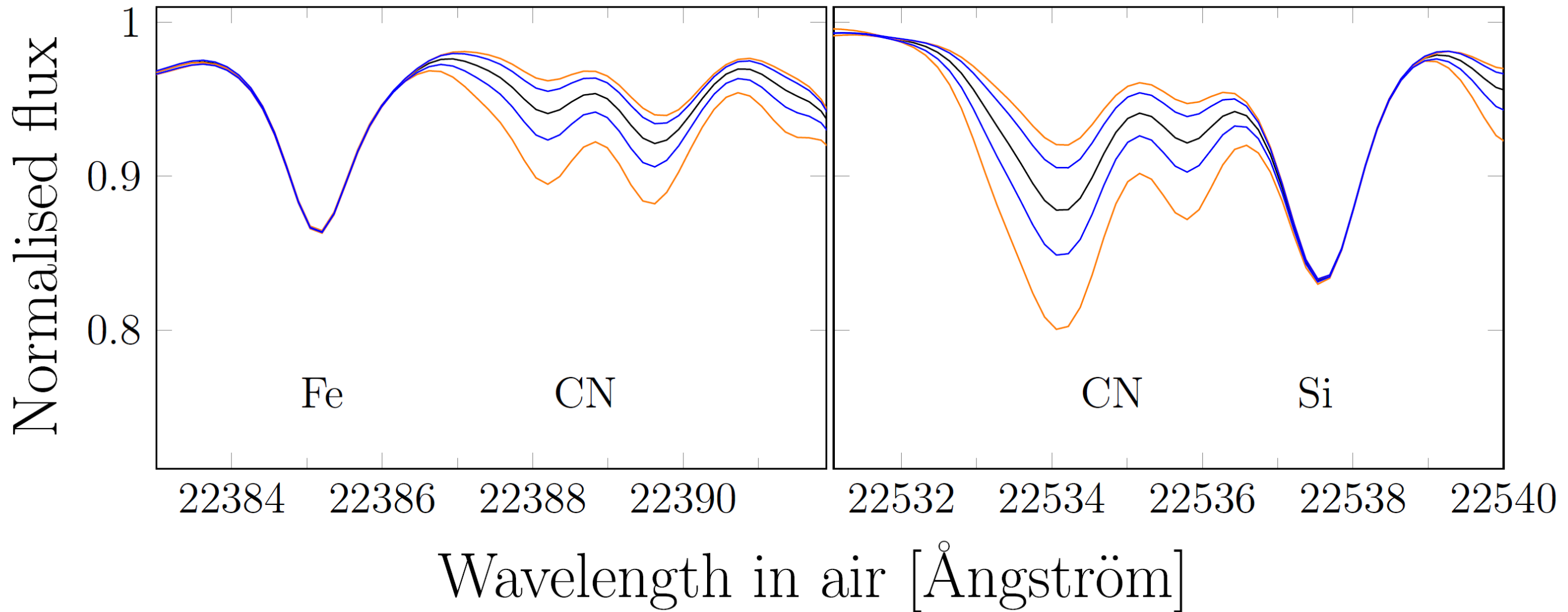
CN features challenging



Red: NSC stars

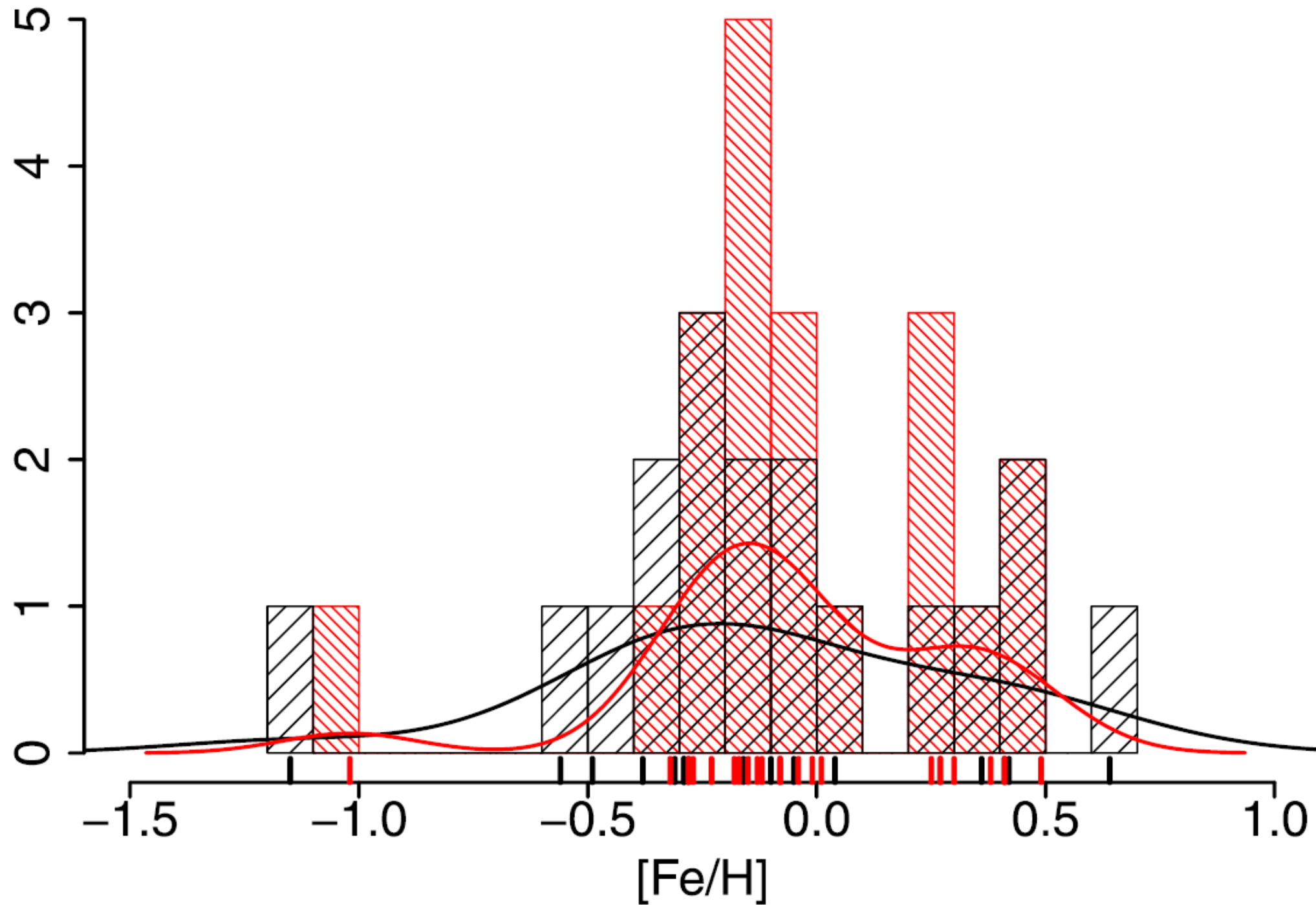
Blue: Local disk stars

Line List rework



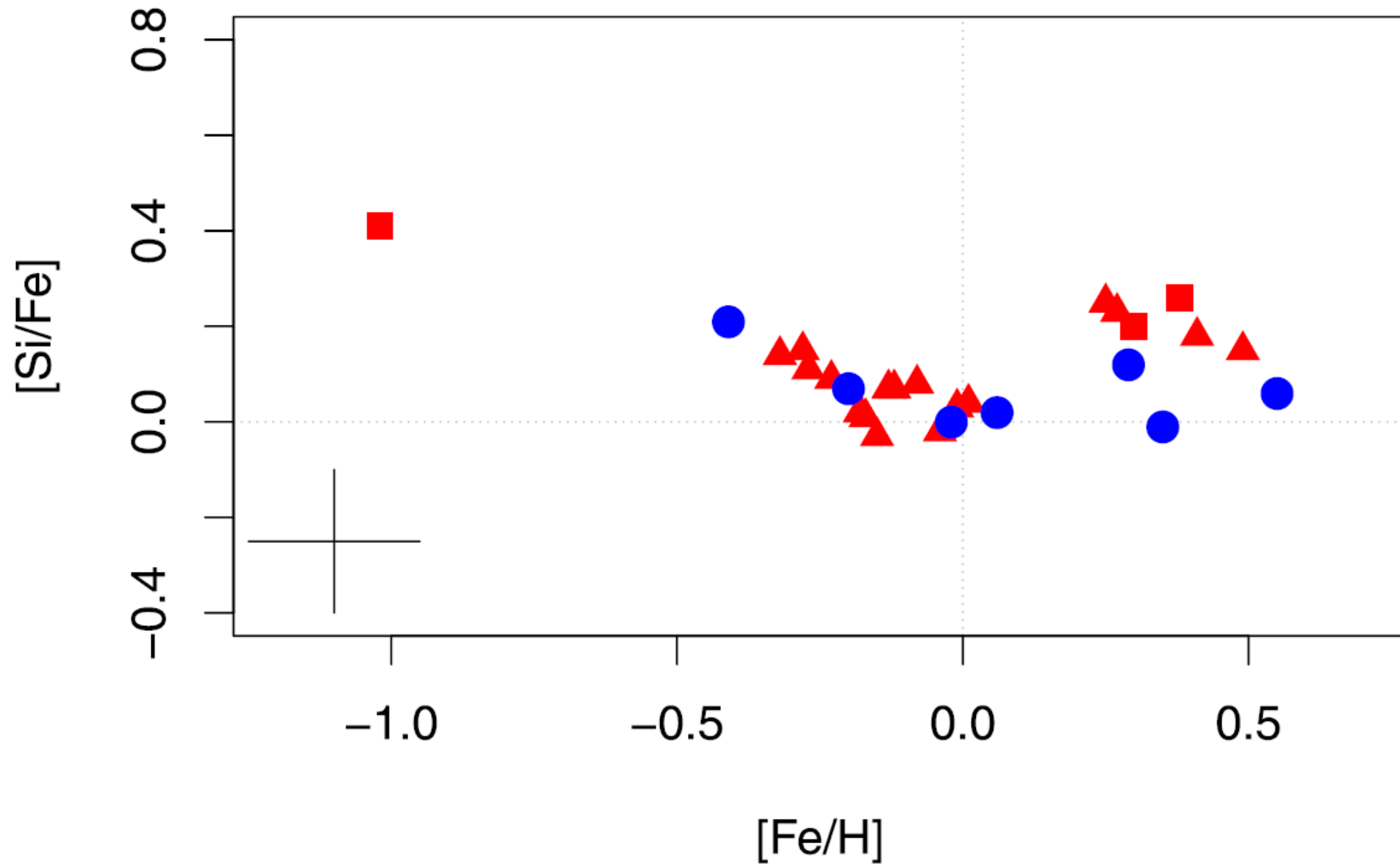
(Thorsbro et al., 2020)

MDF revisited



Black from Rich et al. (2017), Red from Thorsbro et al. (2020)

NSC Alpha abundances

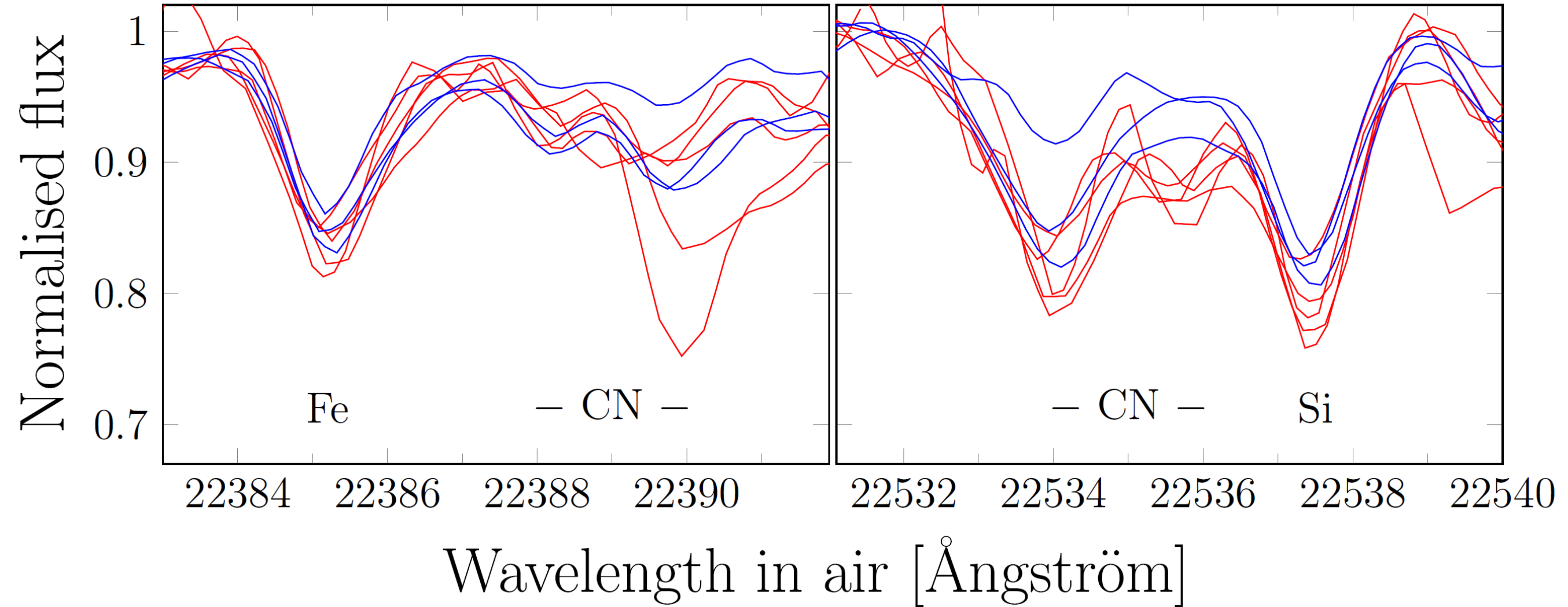


Red: NSC stars (squares NSD)

(Thorsbro et al., 2020)

Blue: Local disk stars

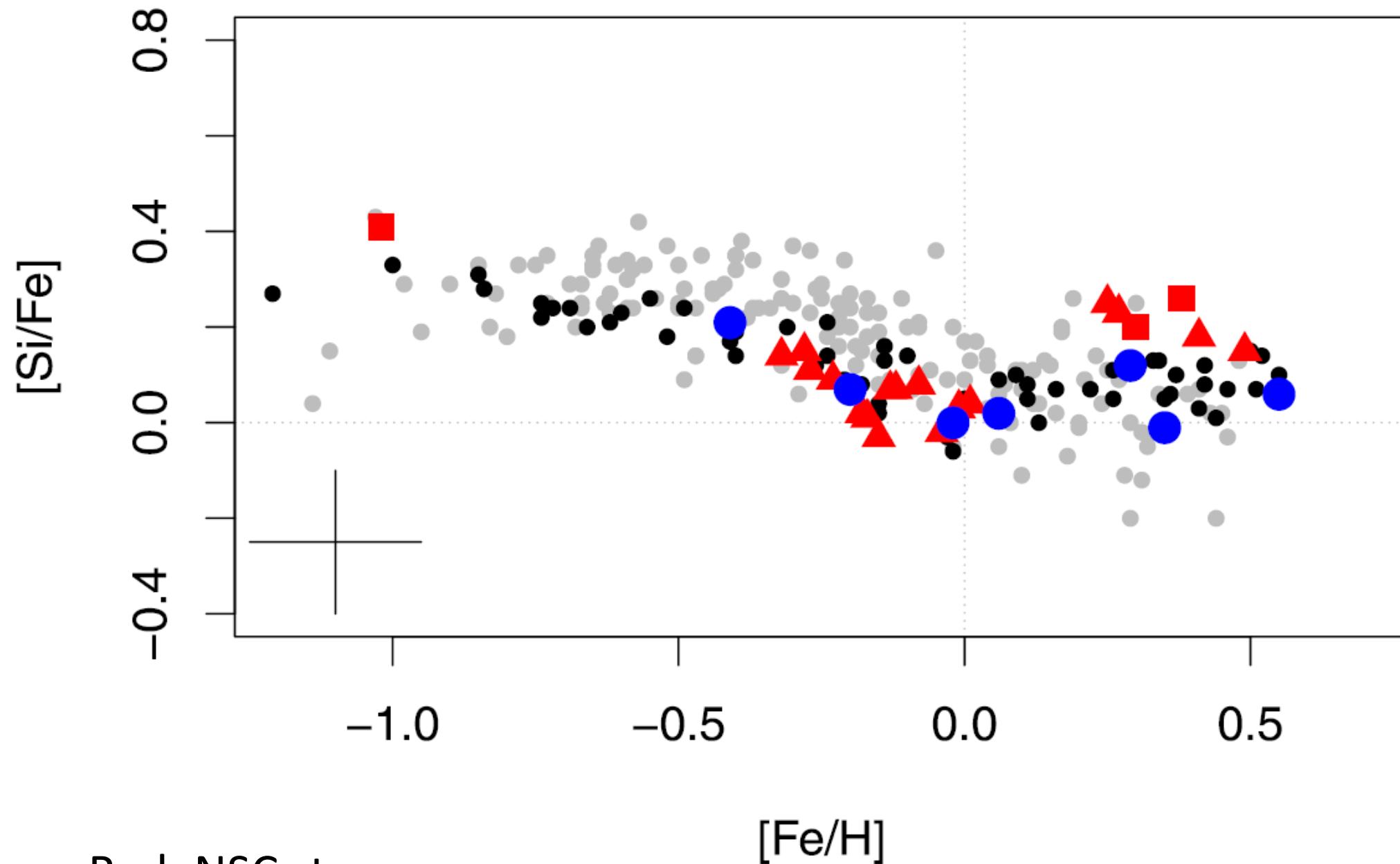
Observed lines



Red: NSC/NSD stars
Blue: Local disk stars

(Thorsbro et al., 2020)

NSC Alpha abundances



Red: NSC stars

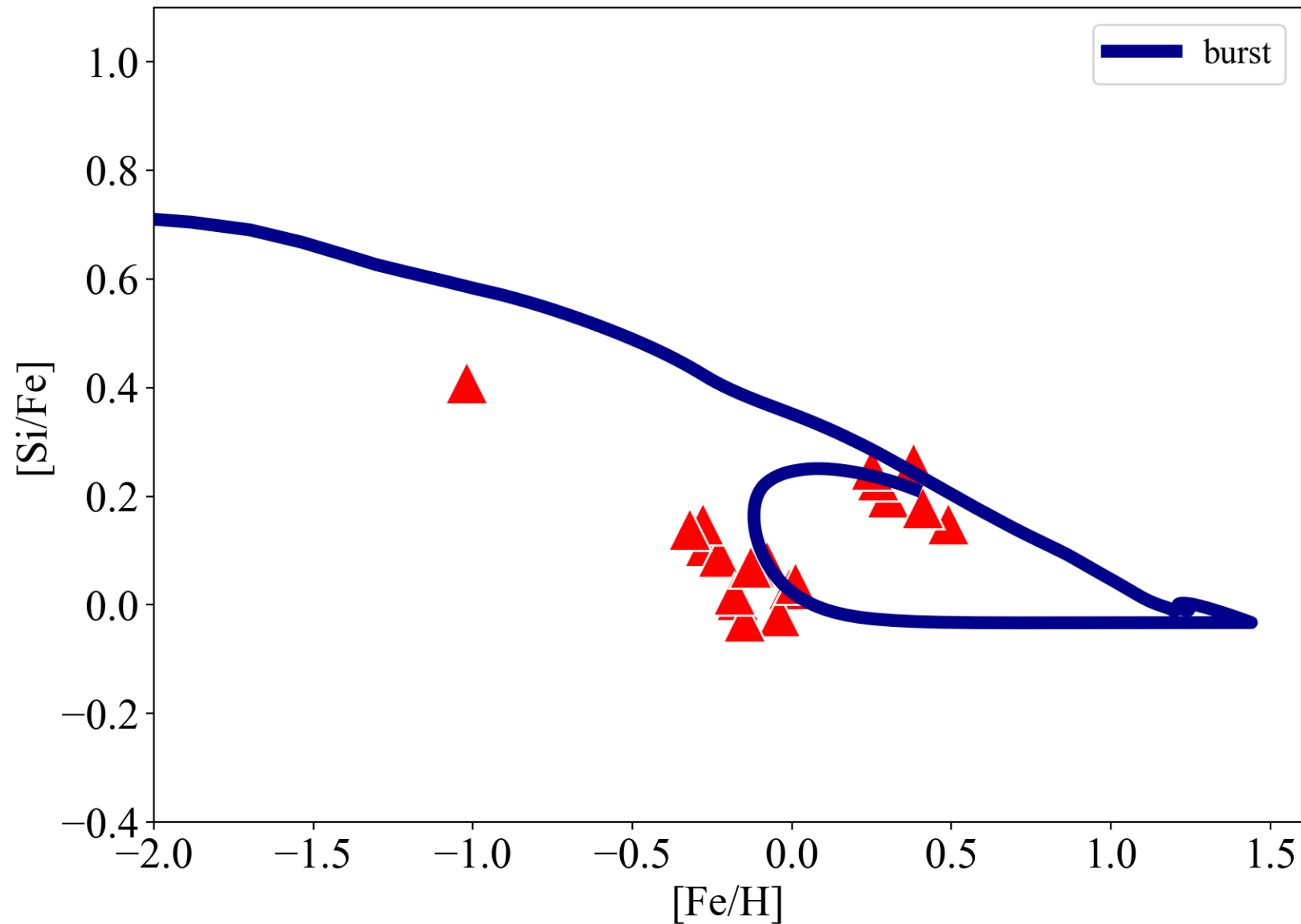
Blue: Local disk stars

Grey: Johnson bulge giants

Black: Bensby microlensed bulge dwarves

(Thorsbro et al., 2020)
(Johnson et al., 2014)
(Bensby et al., 2013)

Silicon GC chemical evolution



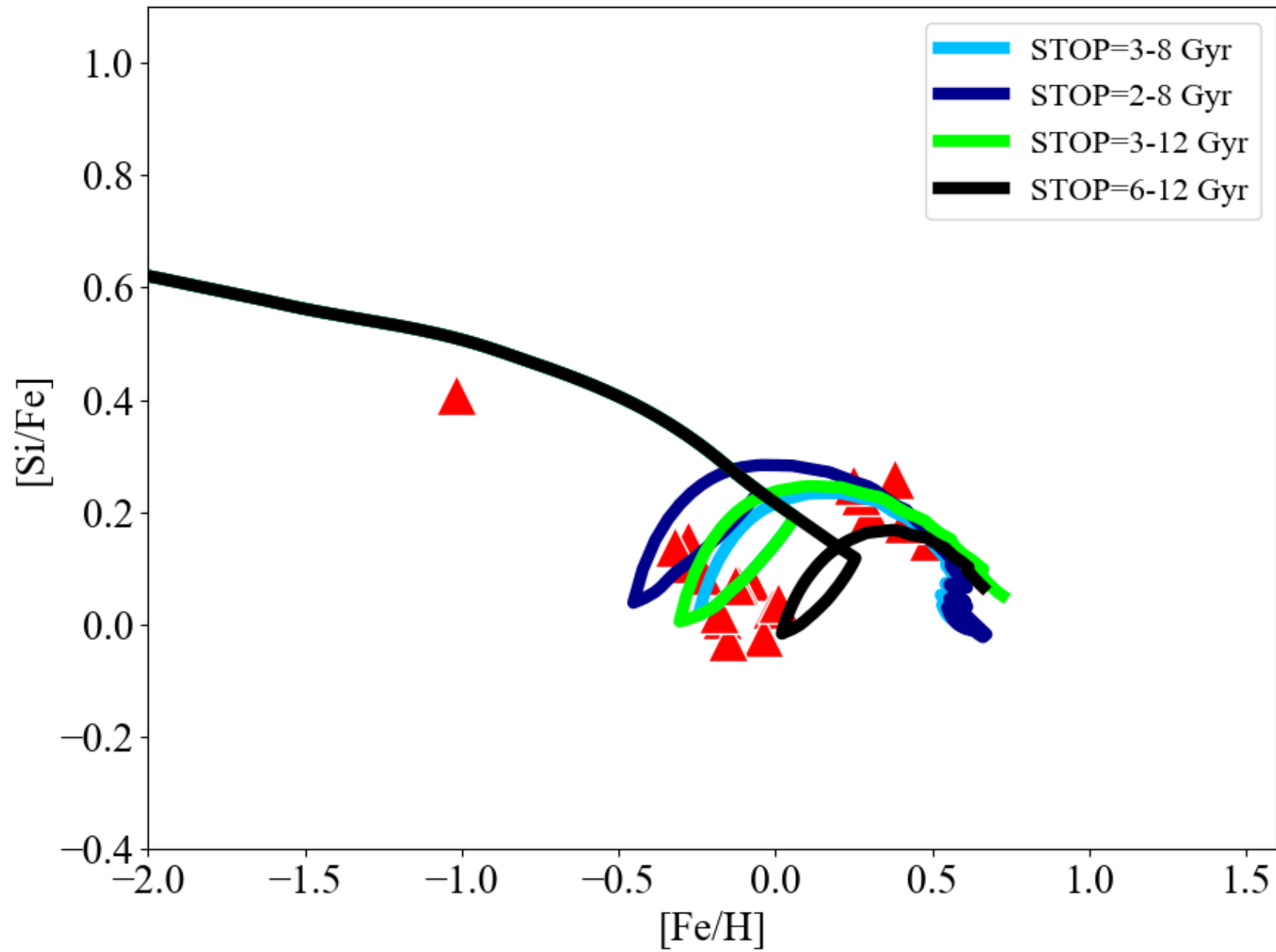
Model parameters:

2nd infall approx. 2 Gyr ago as per Pfhul et al. 2011

Primordial gas

(Thorsbro et al., 2020)

Silicon GC chemical evolution



Stop in star formation

(Thorsbro et al., 2020)

Thank you!