

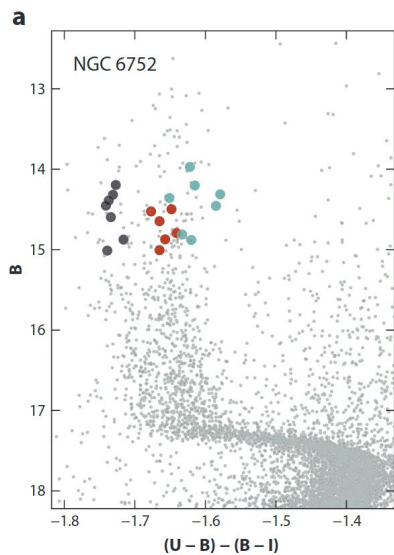


Annual Meeting

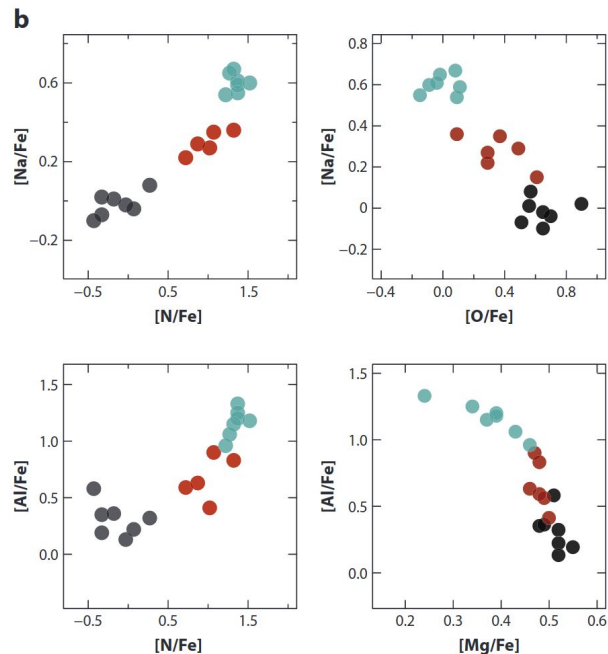
Sergen Özdemir

In collaboration with R. Smiljanic, J.E. Martinez-Fernandez, M. L. L. Dantas
and A. R. da Silva

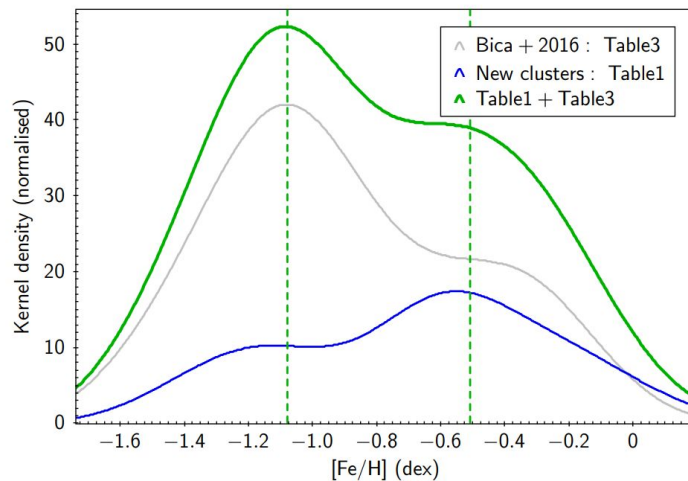
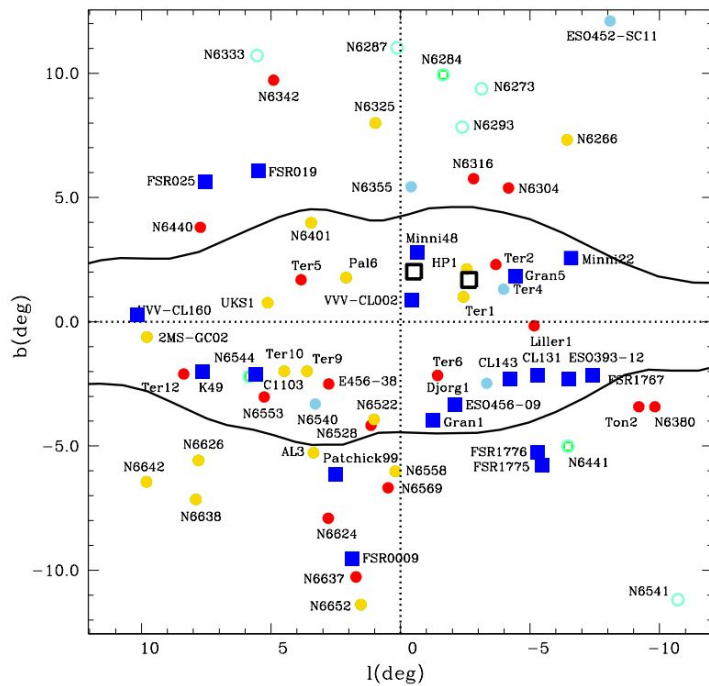
Globular clusters and multiple populations



Bastian and Lardo (2018)

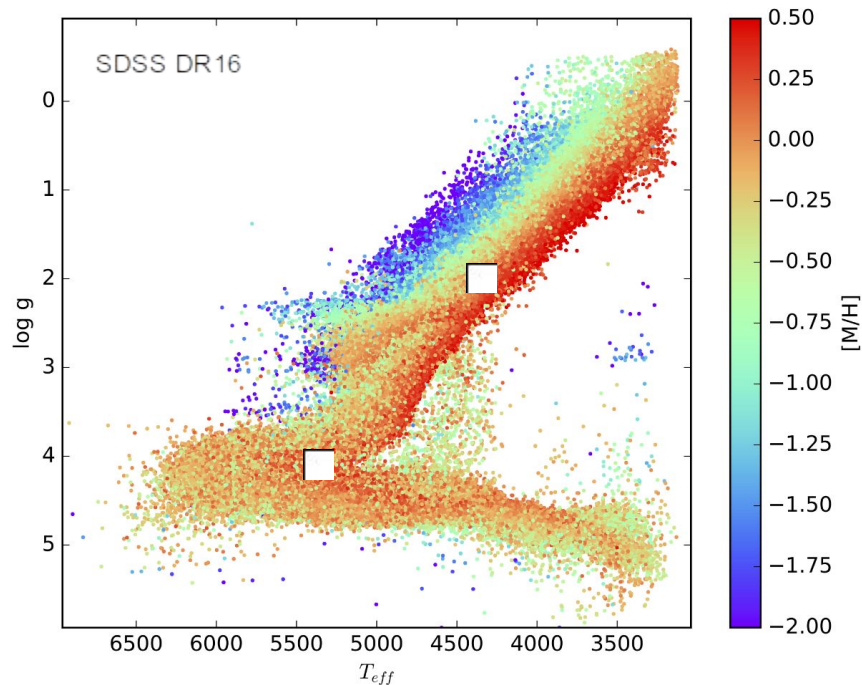


Bulge Globular Clusters

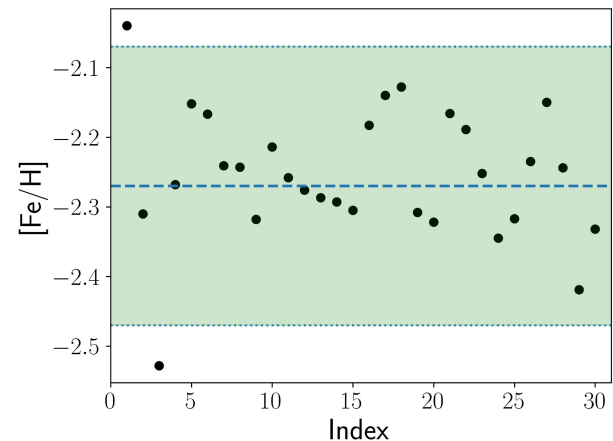
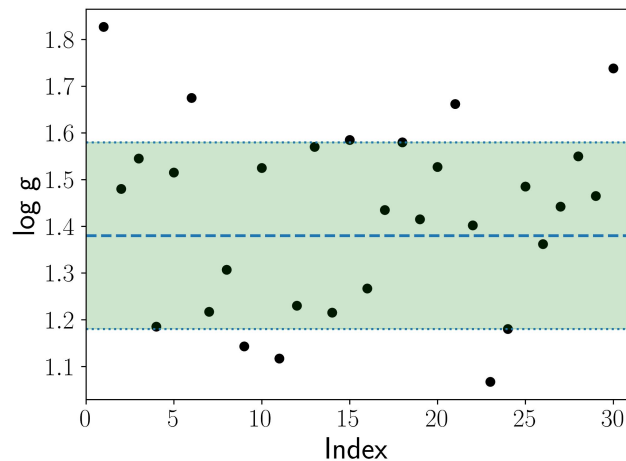
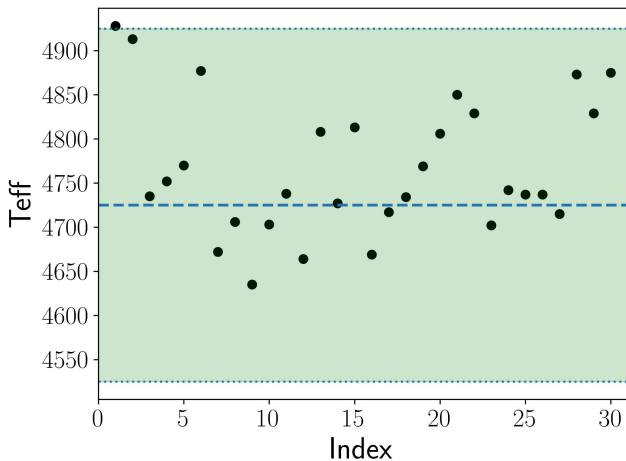


Similarity Analysis for CHESSE Pipeline

- CHESSE: CHEmical Survey analysis System
- High precision
- Very similar stars in terms of temperature, gravity and metallicity are needed for differential analysis
- Using dimensionality reduction techniques to find similar stars **without a priori** information
- Details of the similarity analysis will be submitted soon:
 - Martinez-Fernandez et al. (in prep.)



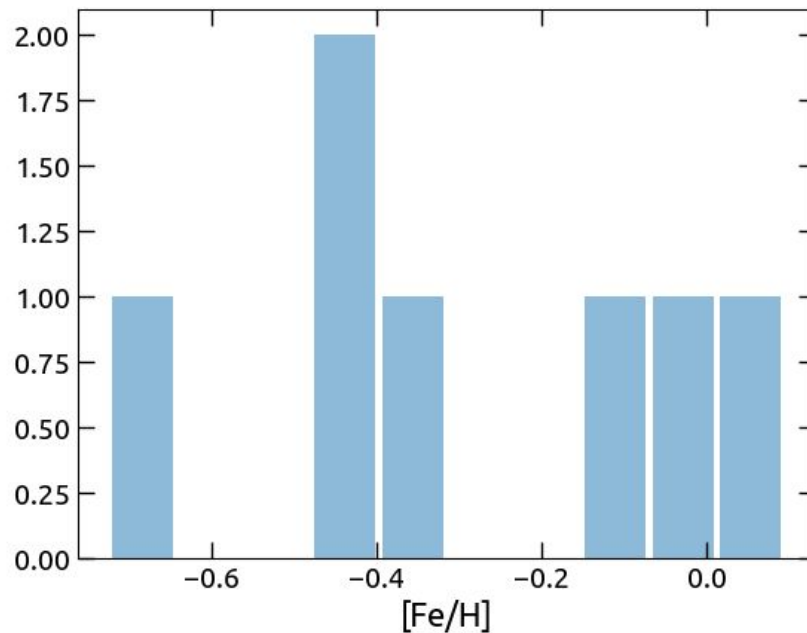
Analysis Results for Similar Stars



- Benchmark star used in the analysis BD+09 2870; $T_{\text{eff}} = 4725$ K, $\log g = 1.38$ and $[\text{Fe}/\text{H}] = -2.27$

Preliminary Analysis

- 261 processed slit spectra from the regions around the 5 bulge clusters: NGC6522, NGC6558, NGC 6626, NGC6553, NGC6540
 - 219 spectra of 102 individual stars used in similarity analysis
 - 87 individual stars matched with at least one reference stars
 - Only 13 stars are members (11 of them from NGC6553)
 - 7 analyzed
- Raw MOS data downloaded and reduced for those 5 clusters (about 150 stars)
- **Work is ongoing**



Future Work

- Analyze the sample of bulge globular cluster stars
- Increase the sample size by preparing the MOS data format
- Deriving elemental abundances
 - Light elements
 - Heavy elements
 - Iron-peak elements? (may not be a part of the PhD project)

Other Activities

- Part of an international group working on chemical abundances in stars:
 - One submitted paper as the first-author:

High-Resolution Infrared Spectroscopy of the Dust-Obscured Metal-Poor Open Cluster Trumpler 5

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H. Oh⁶, K. Sokal³, G. N. Mace³, and D. T. Jaffe³

- 2 talks and 2 poster presentations in conferences
- Taking lectures and helping the organization of popularization activities in GeoPlanet doctoral school
- Talk in the Annual PhD Seminar at CAMK

Thank you!