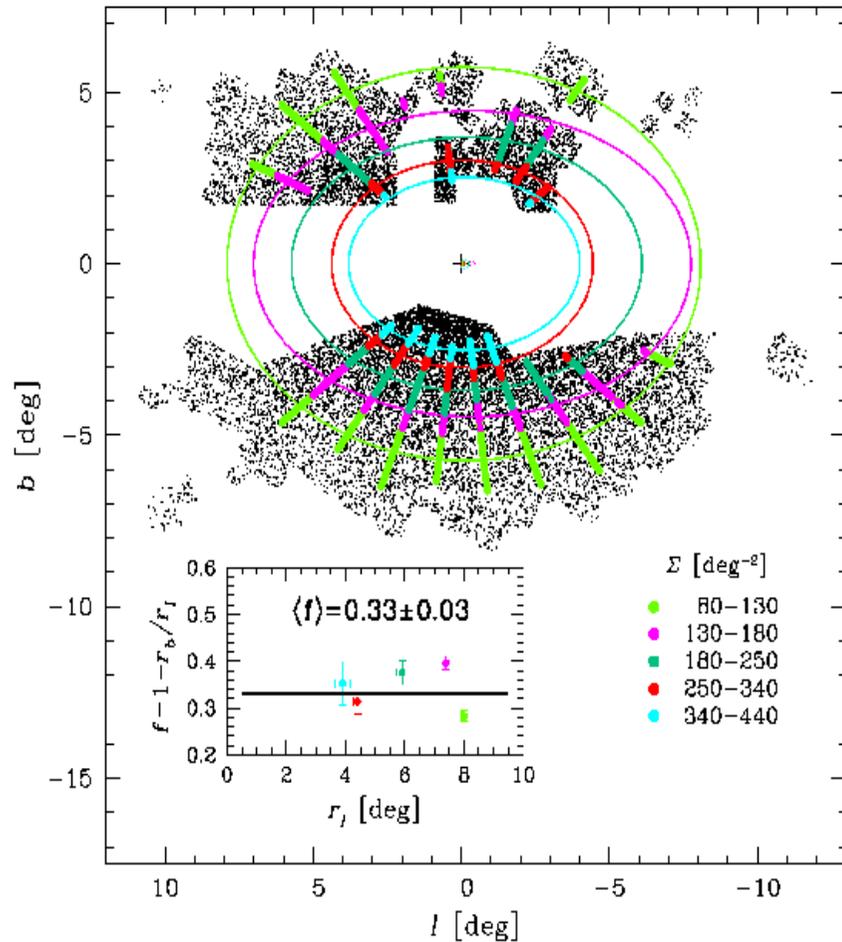


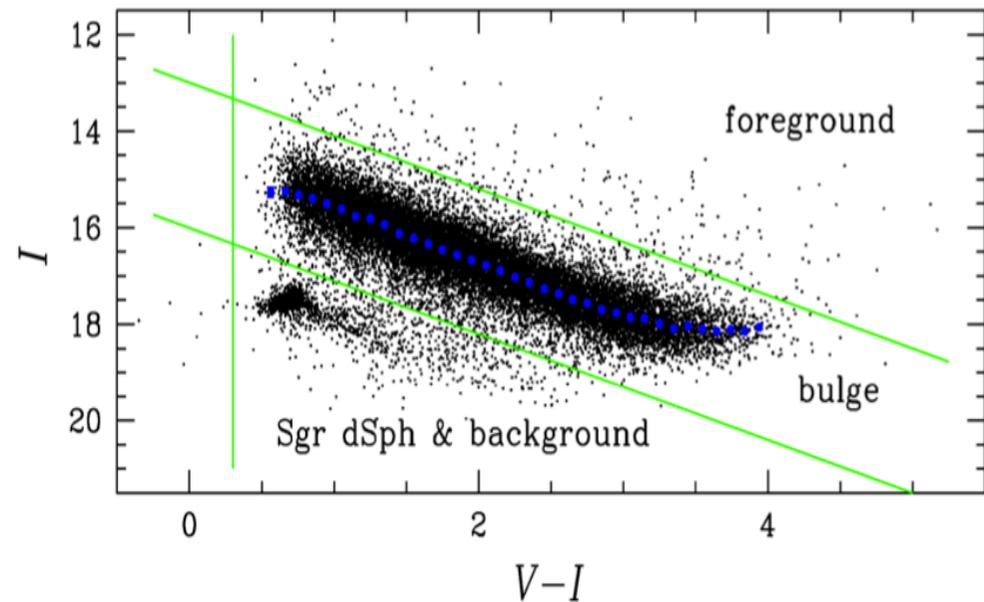
The 3D structure of the Galactic Spheroid: Bulge



Pietrukowicz + (2015)

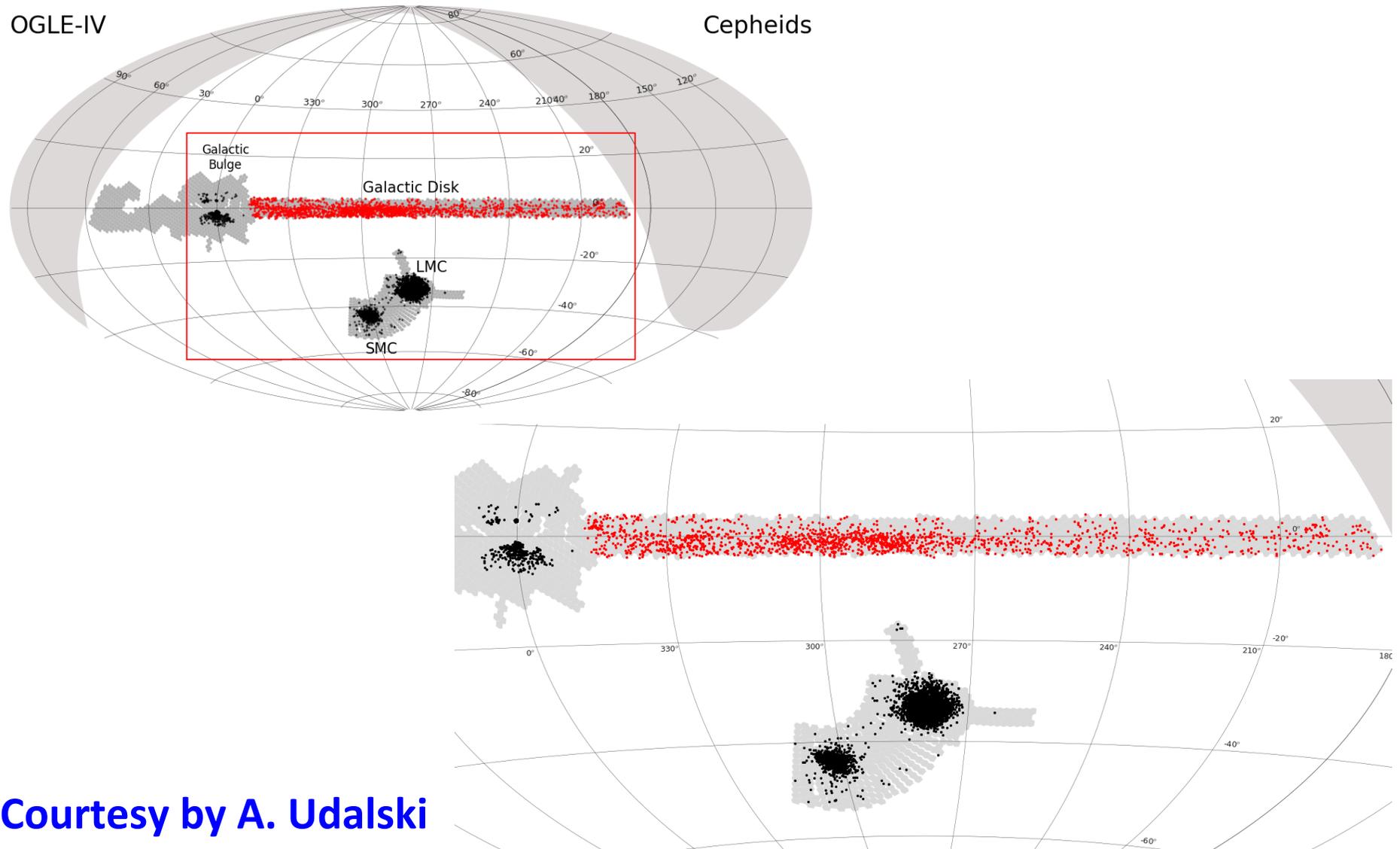
~27,000 RR Lyrae by OGLE IV

Census far from being complete!



VVV \rightarrow JHK~16-18

More than 1000 new Cepheids discovered by OGLE-IV along the Galactic plane



Courtesy by A. Udalski

Partecipanti e relative responsabilità/interessi

PIs:

G. Bono, UniToV -- **M. Dall'Ora**, INAF/OACN -- **G. Fiorentino**, INAF/OABO

Post Doc: **S. Marinoni** (ASDC, Rome), **D. Magurno (UniToV)** +
P. Marrese (ASDC) → Astrometry/Cross Correlations

Science Team: LSST Stellar variability teams +

Photometry: M. Castellani, I. Ferraro, G. Iannicola, L. Pulone → INAF/Roma

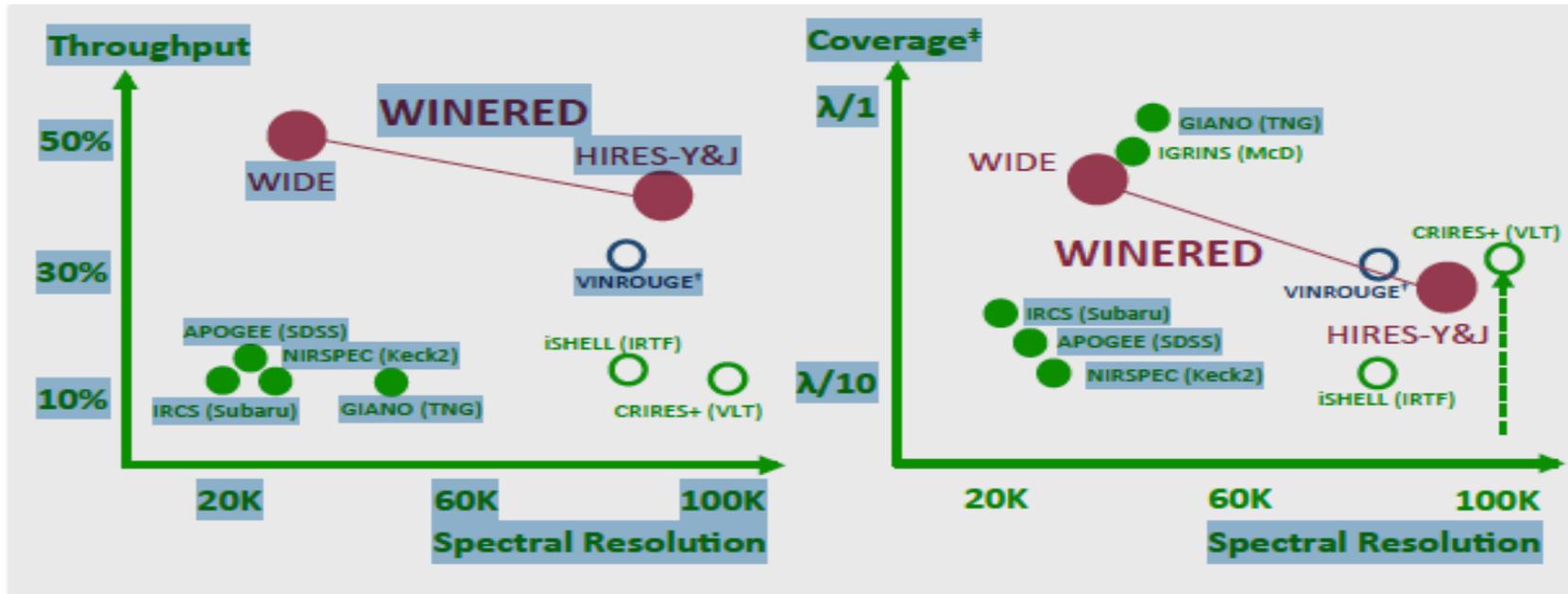
Modeling: A. Pietrinferni, S. Cassisi, A. Piersimoni, E. di Carlo → INAF/TE
L. Greggio, E. Tognelli, S. degl'Innocenti, P.G. Prada Moroni → UniPi

Spectroscopy: V. D'Orazi E. Held → INAF/PD, M. Nonino → INAF/TS,
M. Fabrizio (ASDC), **R. da Silva** (ASDC)

Stellar activity: A. Antonelli, A.F. Lanza, G. Leto → INAF/CT

+ International collaborations

Paving the way: WINERED@NTT



Two different observing modes:

WIDE \rightarrow zYJ in a single shot with $R \sim 14,000$ & 28,000

HIRES \rightarrow either Y or J with $R \sim 80,000$

Tipo di analisi dati prevista, inclusa di sviluppo e cadenza temporale

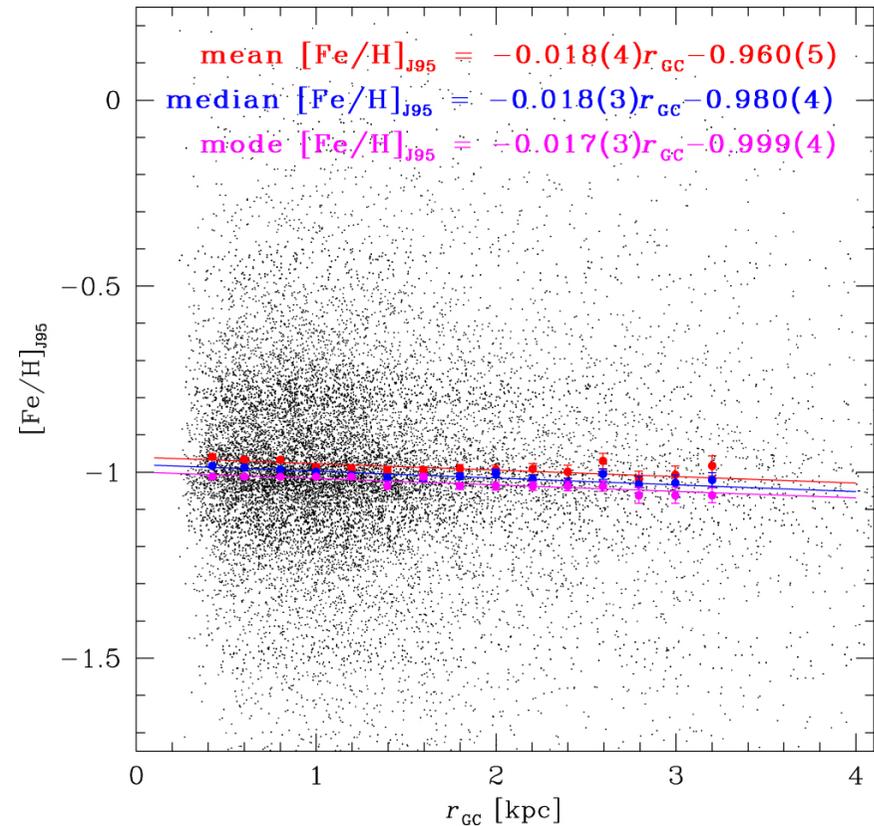
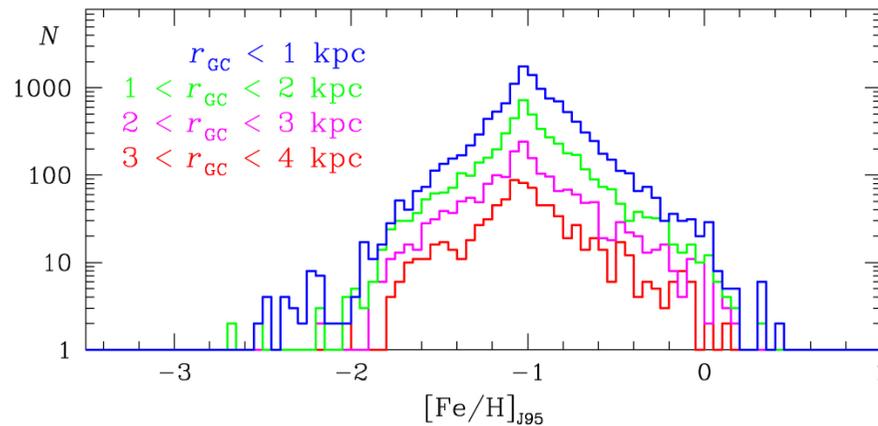
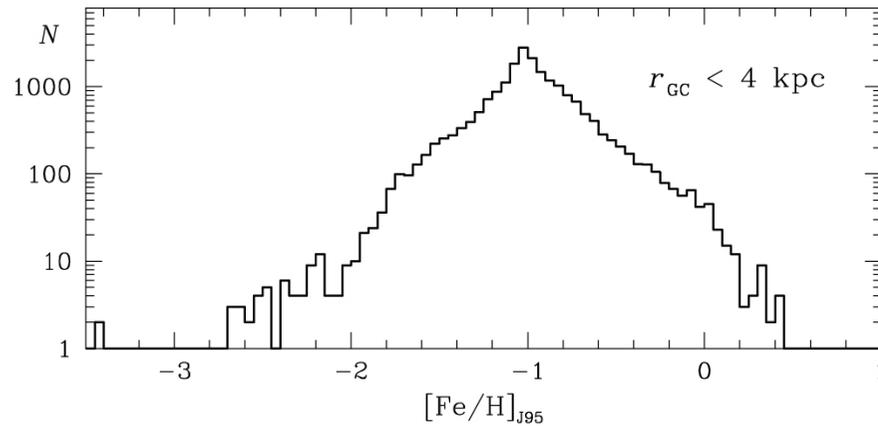
A few relevant crucial issues we are interested in:

- a) Cadence of visits across Galactic Bulge & Disk + izY imaging
- b) Development of new algorithms for PSF photometry in crowded fields
- c) Absolute and relative astrometry in crowded stellar fields

Ready to start once we will have access to photometric catalogs used by LSST to train the pipeline

... even more for Eng. First Light and Commissioning ...

Bulge metallicity gradient



Pietrukowicz + (2015)

Based on Fourier parameters of the I-band light curve,
no coverage in the metal-rich & in the metal-poor tail

Galactic Bulge: Baade window RR Lyrae

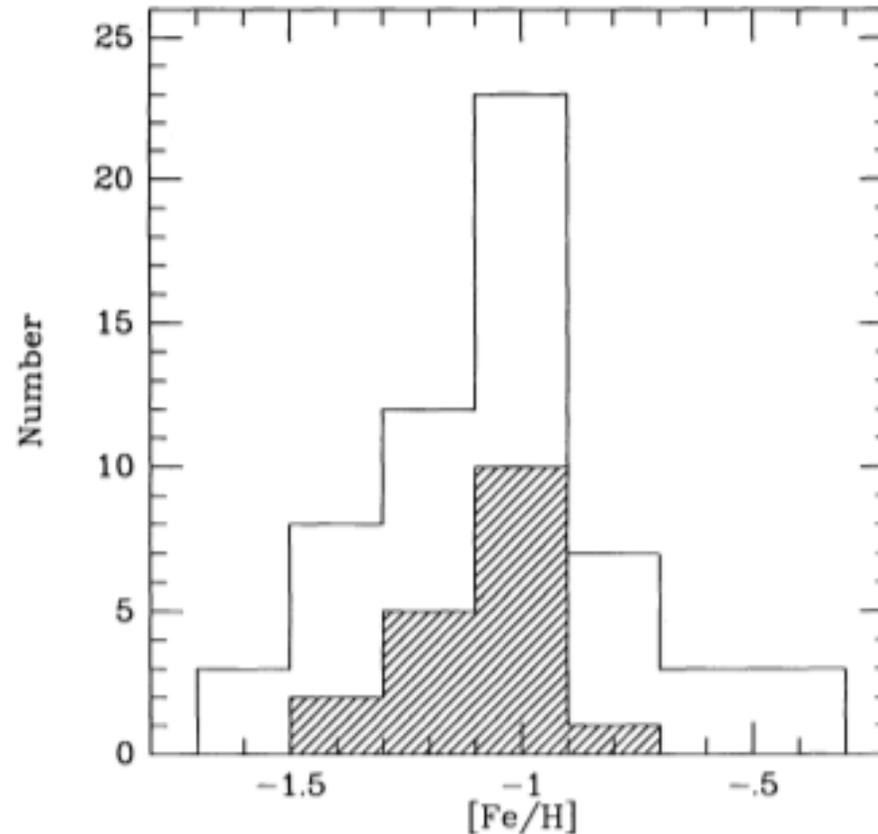


FIG. 7.—Histogram of the abundances determined for the BW RR Lyrae stars. The RRC stars are shaded.

Walker & Terndrup (1991) 59 RRLs using the ΔS method