The early chemical evolution of the Sagittarius dwarf galaxy

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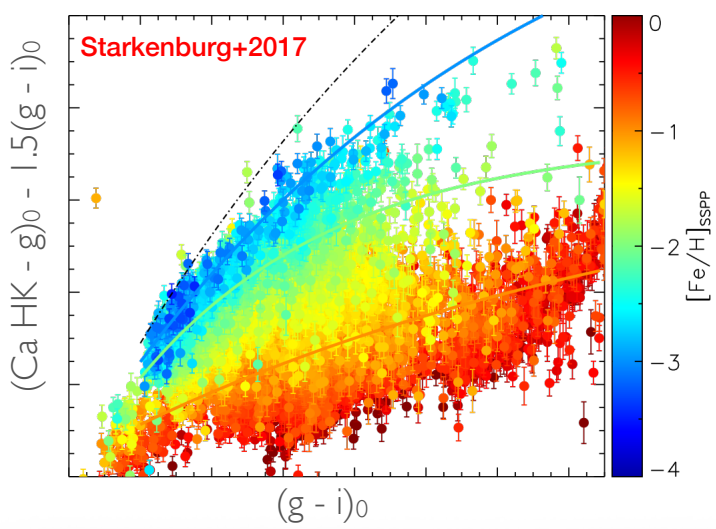
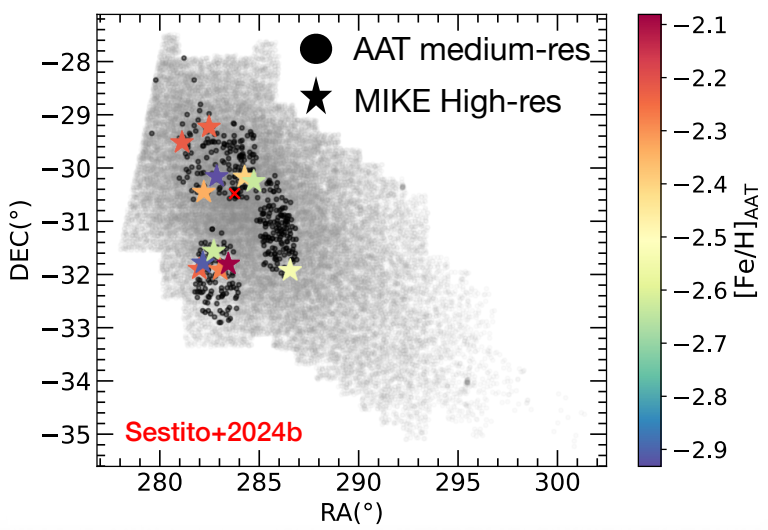
Federico Sestito and the Pristine Inner Galaxy Survey (PIGS)

Ca H&K photometry to select metal-poor stars in the Sagittarius core

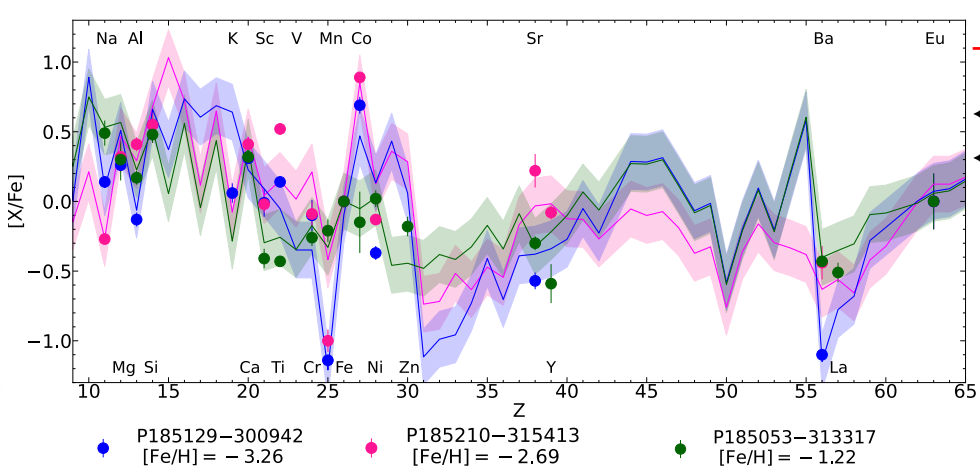




High-res

Medium-res

The largest high-resolution sample of very metal-poor stars in Sagittarius core

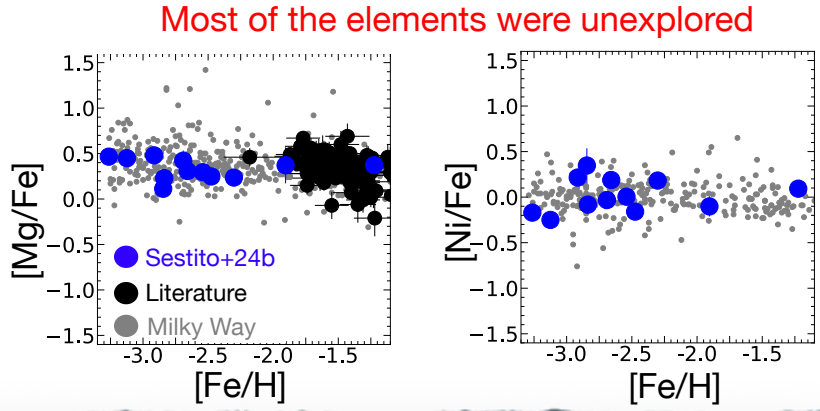


ONLY 12 VMP stars with high-res:
Multi-object high-res spectrographs are needed!

The recipe of the most metal-poor stars in Sgr

- From C to Zn: High-energy and hypernovae with $10 - 70\ M_{\odot}$
- n-capture: neutron stars merger, fast-rotating metal-poor stars, asymptotic giant branch stars

Most of the elements were unexplored



Carbonicity to trace SNe retention: Sagittarius vs the 7 dwarfs and the Milky Way

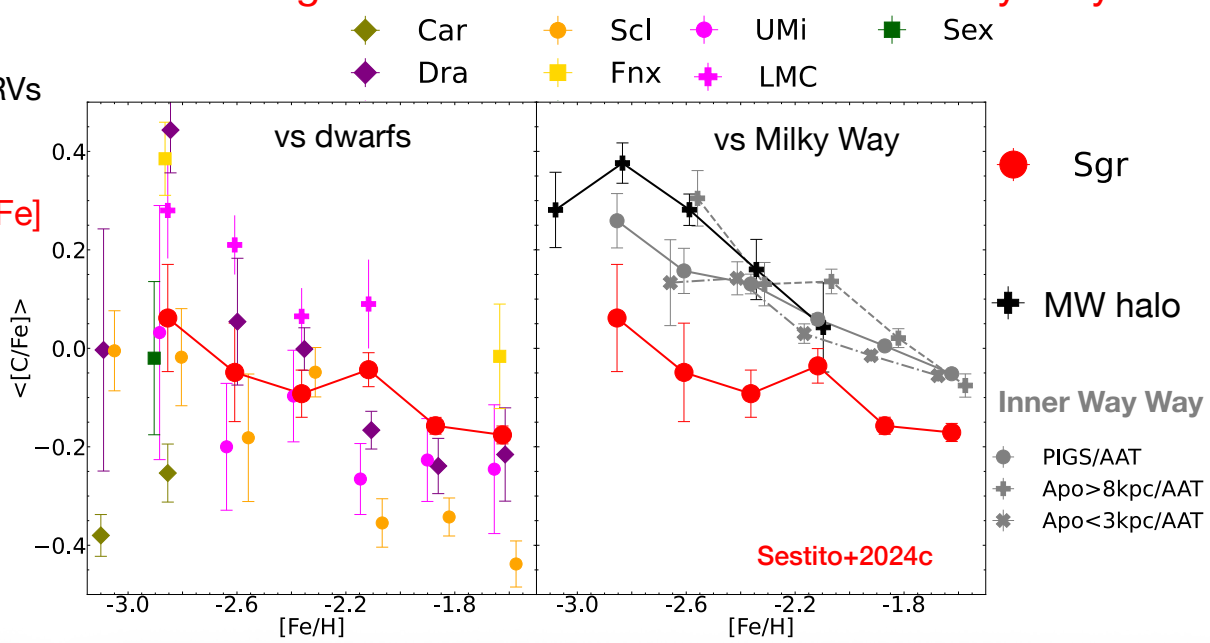
Medium-resolution PIGS/AAT sample:

~830 metal-poor Sgr stars with [Fe/H] and RVs

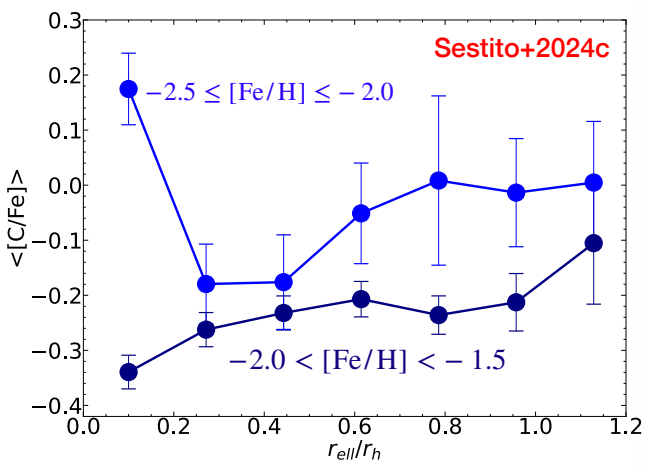
~350 have "good" [C/Fe] measurements

The higher the SNe energy, the lower [C/Fe]

- Sgr/DGs: Imprints of high-energy SNe events
- MW building blocks: predominance of faint SNe events?



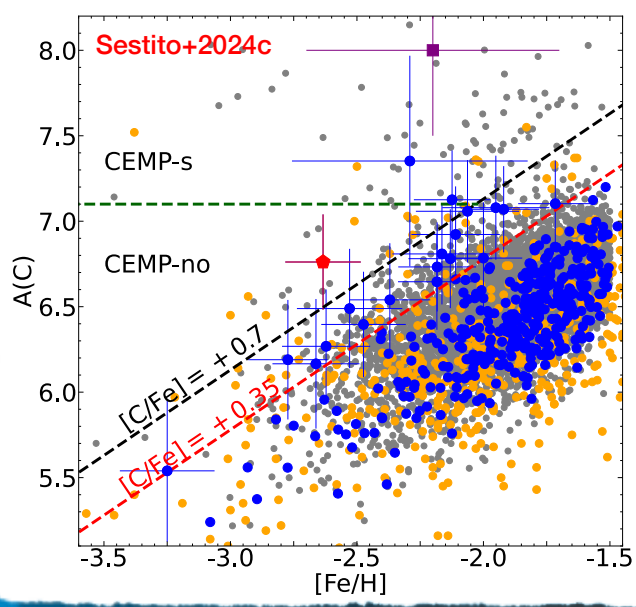
Carbon gradient in Sagittarius



Carbon gradient at "higher" [Fe/H]

- Hint of Sne Ia in the inner core?

Should we re-define "CEMP"?



- Lower [C/Fe] in Sgr/DGs than in the MW
- Lower fraction of CEMP in Sgr/DGs than in MW
- CEMP definition based on MW observations
- How about to re-define "CEMP" as outliers from the average [C/Fe] of a given system?