

# The Pristine survey of the metal-poor halo

*Nicolas "the older" Martin*

*(Observatoire astronomique de Strasbourg  
& MPA Heidelberg — @nfmartin | 1980)*

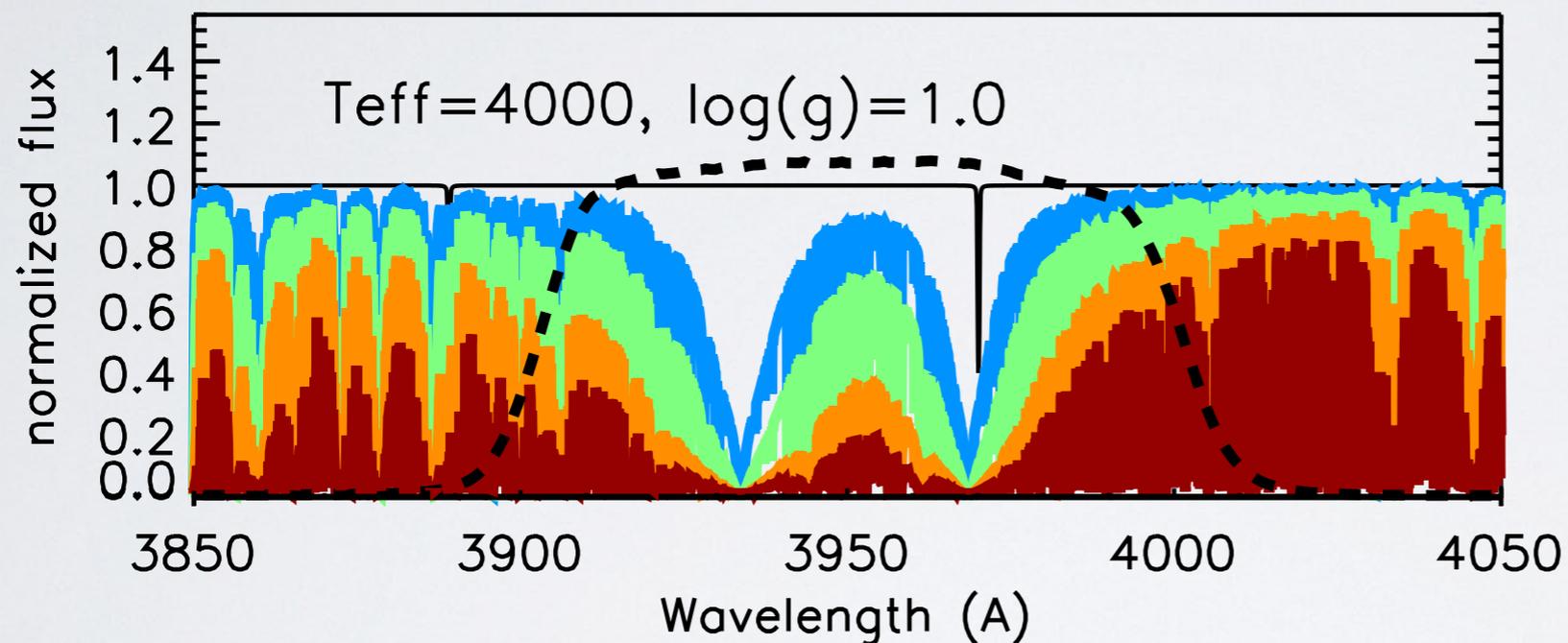


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**PI:** *Else Starkenburg & Nicolas Martin*. Co-Is: David Aguado, Carlos Allende Prieto, Anke Arentsen, Edouard Bernard, Piercarlo Bonifacio, Elisabetta Caffau, Raymond Carlberg, Patrick Côté, Morgan Fouesneau, Patrick François, Jonay Gonzales Hernandez, Stephen Gwyn, Vanessa Hill, Rodrigo Ibata, Pascale Jablonka, Collin Kiely, Nicolas Longeard, Alan McConnachie, Julio Navarro, Ruben Sánchez-Janssen, Mathias Schultheis, Federico Sestito, Eline Tolstoy, Kim Venn, Kris Youakim

# The Ca H&K doublet

Starkenburger, Martin *et al.* (2017)



$[Fe/H] = -3.0$

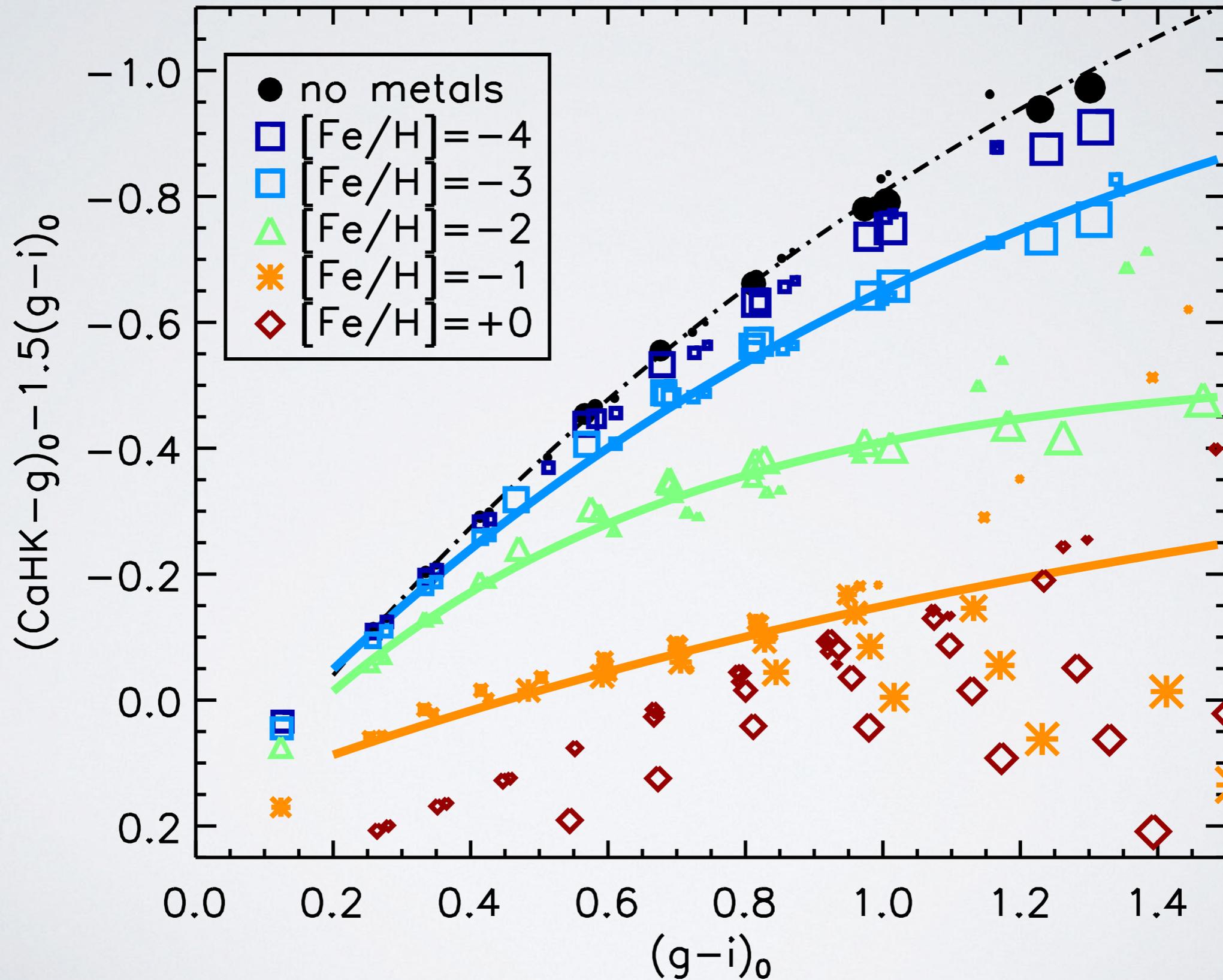
$[Fe/H] = -2.0$

$[Fe/H] = -1.0$

$[Fe/H] = +0.0$

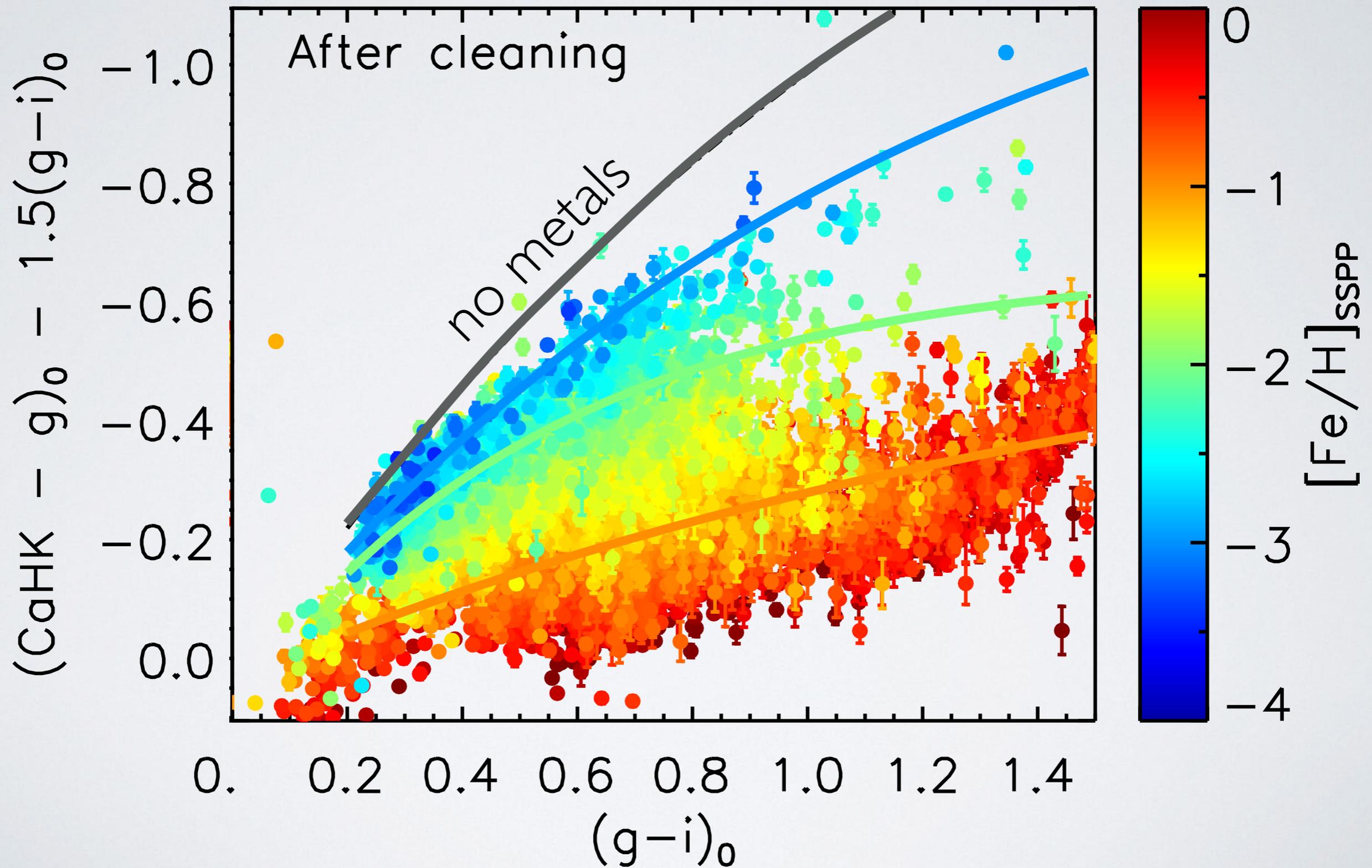
# Ca H&K — model predictions

Starkenbourg, Martin *et al.* (2017)



# CaHK $\rightarrow$ $[\text{Fe}/\text{H}]$ with SEGUE

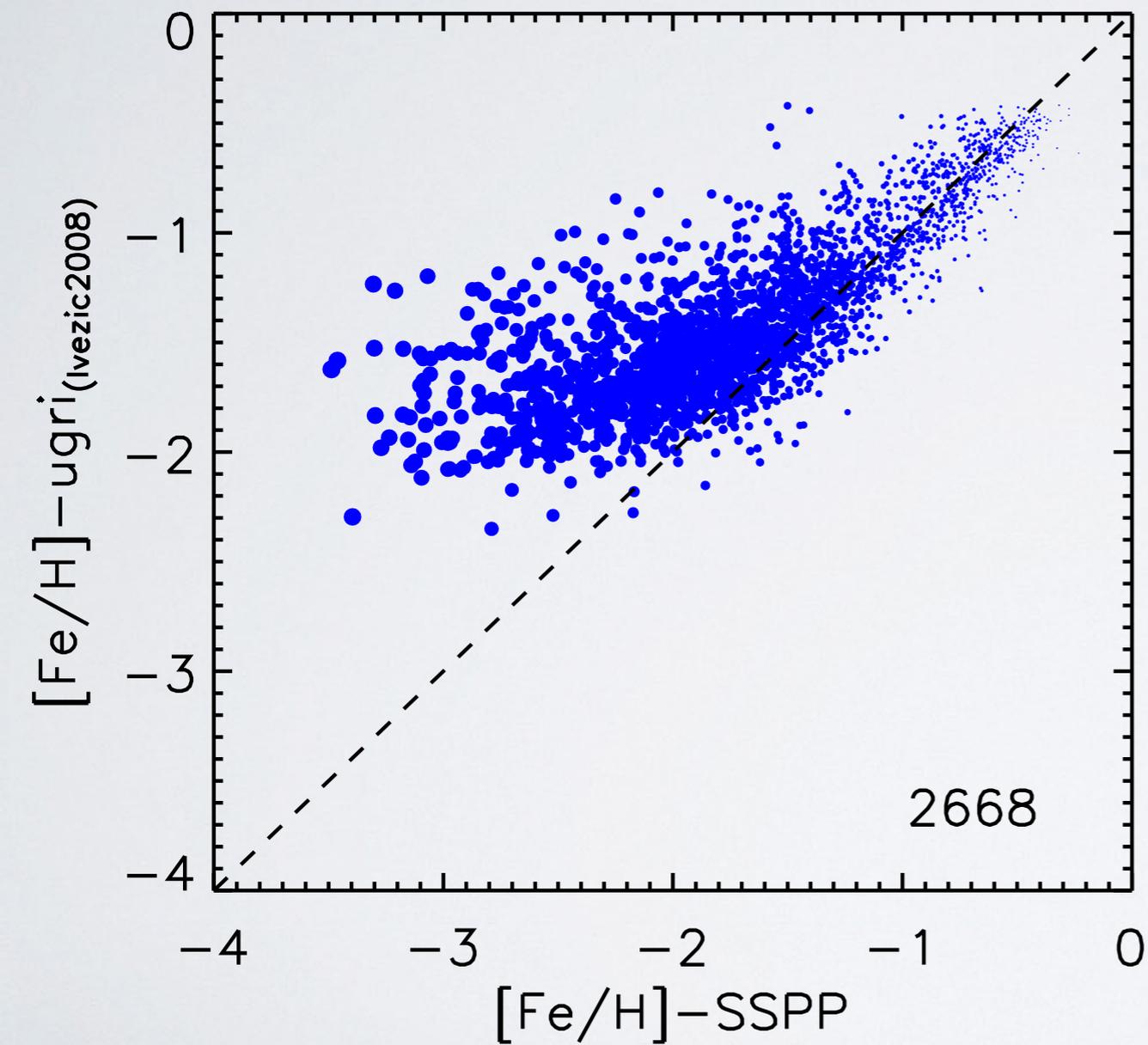
Starkenburg, Martin *et al.* (2017)



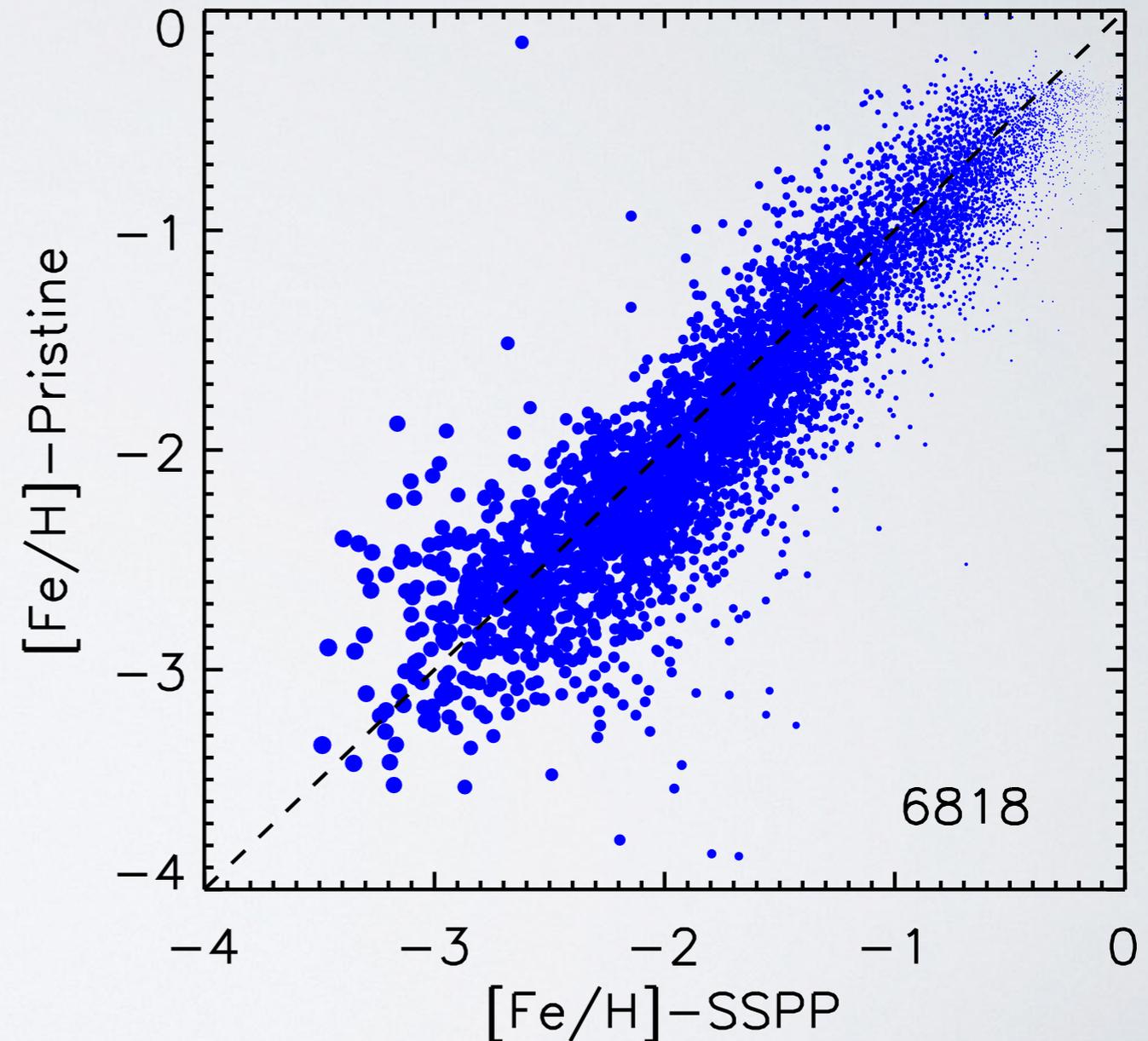
# An accurate metallicity decomposition

Starkenburg, Martin *et al.* (2017)

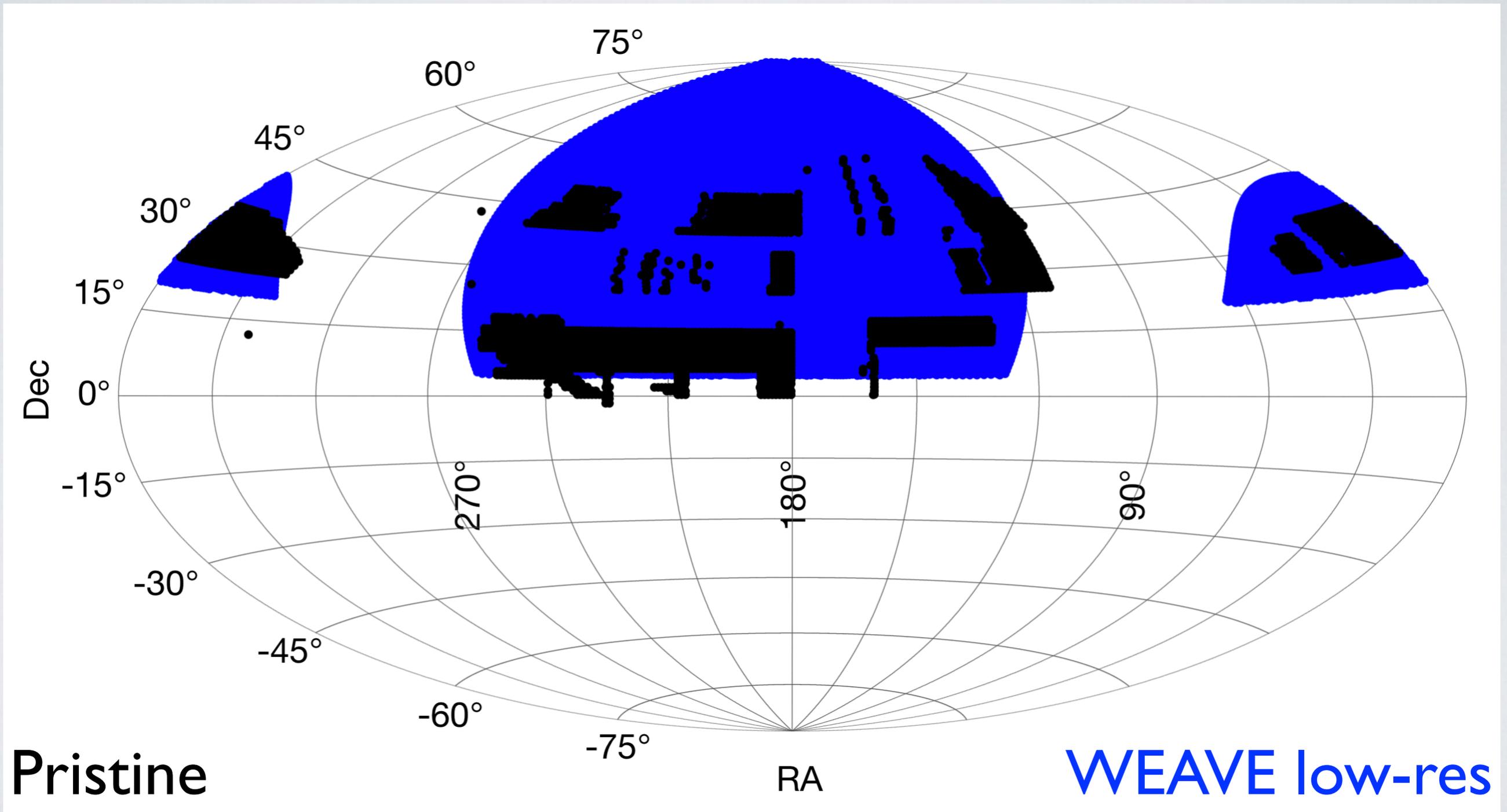
*Broadband ugriz*



*Pristine Ca H&K*



# Coverage



~4,000 deg<sup>2</sup> coverage and growing

# Summary

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## ◎ ***The metal-poor halo***

- Building large samples of EMP stars (4–5x more efficient than previous surveys)
- Already new discoveries  $[\text{Fe}/\text{H}] < -4.0$
- 4,000 deg<sup>2</sup> with good photometric metallicities ( $-3.0 < [\text{Fe}/\text{H}] < -1.0$ )
- Tailored to Gaia depth

## ◎ ***Spectroscopic follow-up***

- 1,500 stars already followed up at the bright end
- Future follow-up with WEAVE (few 10k stars with  $[\text{Fe}/\text{H}] < -2.5$ )

## ◎ ***See Kris Youakim's talk tomorrow morning***

# Pristine

Starkenburg, Martin et al. (2017)

