

***Asteroseismology for  
Galactic Archaeology:  
bridging two fields***



***Luca Casagrande  
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***Dennis Stello, Aldo Serenelli  
Daniel Huber, Katie Schlesinger,  
Ralph Schönrich, Sofia Feltzing***



# ***Asteroseismology for Galactic Archaeology: bridging two fields***

[www.mso.anu.edu.au/saga](http://www.mso.anu.edu.au/saga)

2014, ApJ, 787, 110

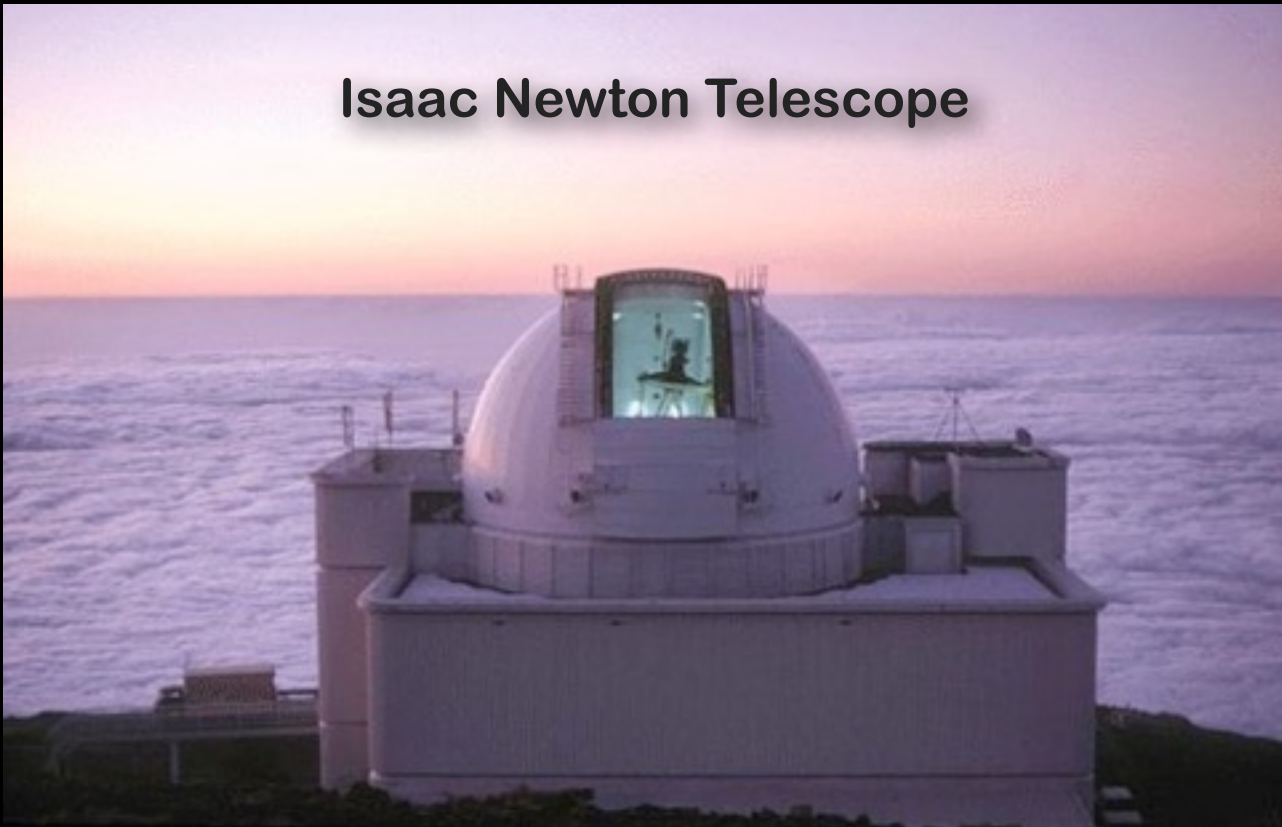


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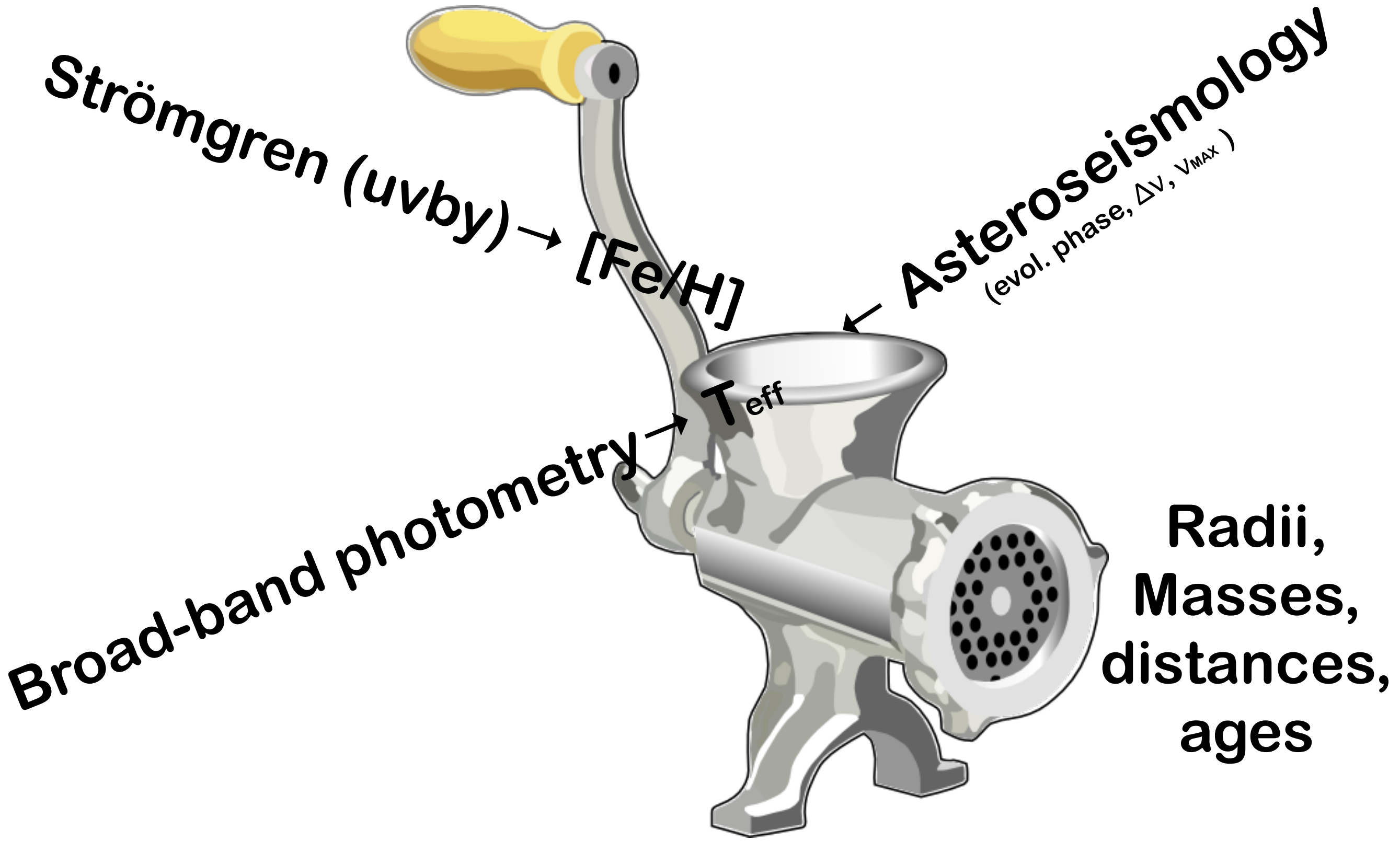
# ***Strömberg survey for Asteroseismology and Galactic Archaeology***

Isaac Newton Telescope



## **WFC @ INT:**

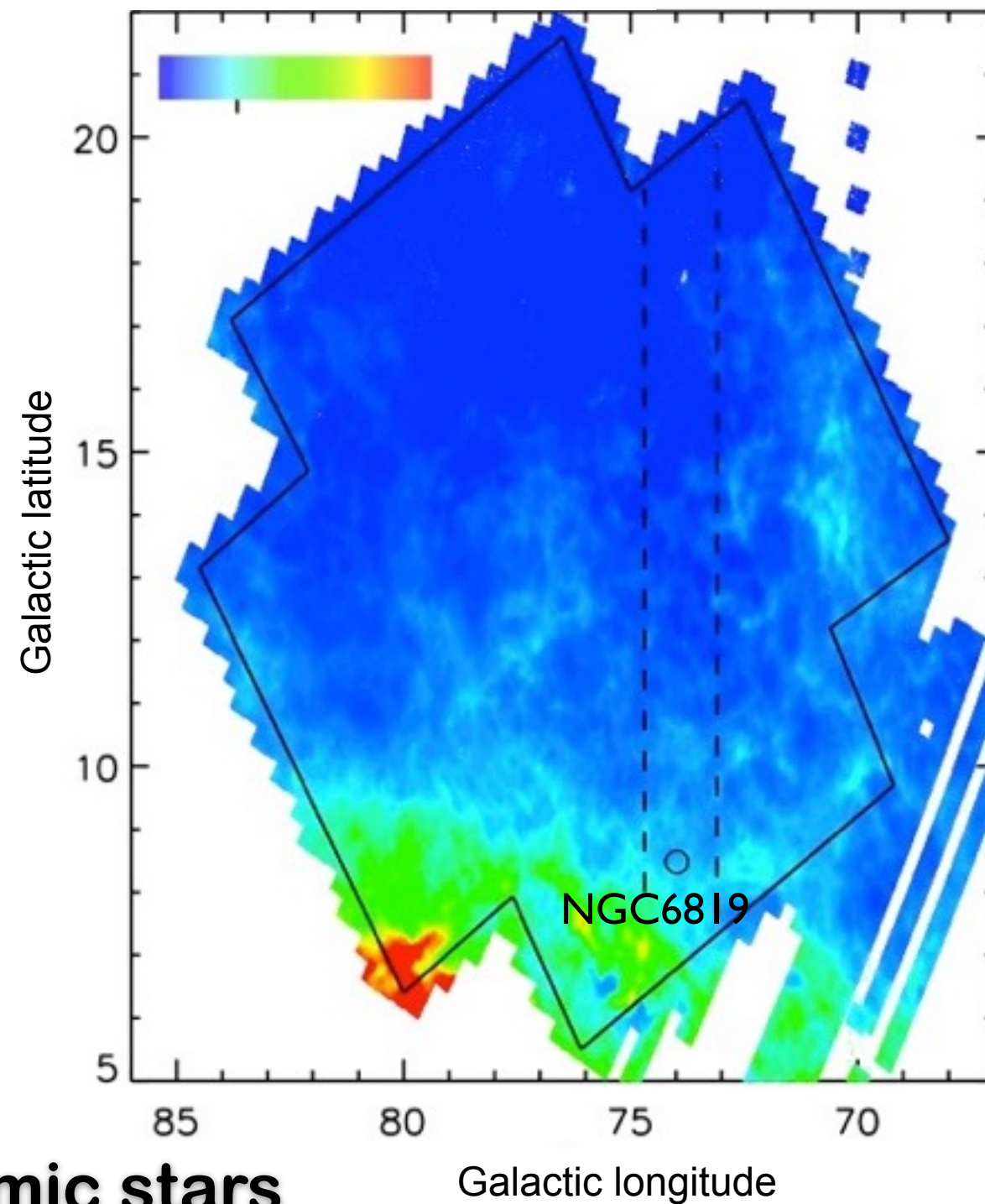
- 2.5 m**
- 34' x 34' FOV**
- Strömberg uvby**
- 28 nights (2012-2014)**
- 37 nights (2015)**







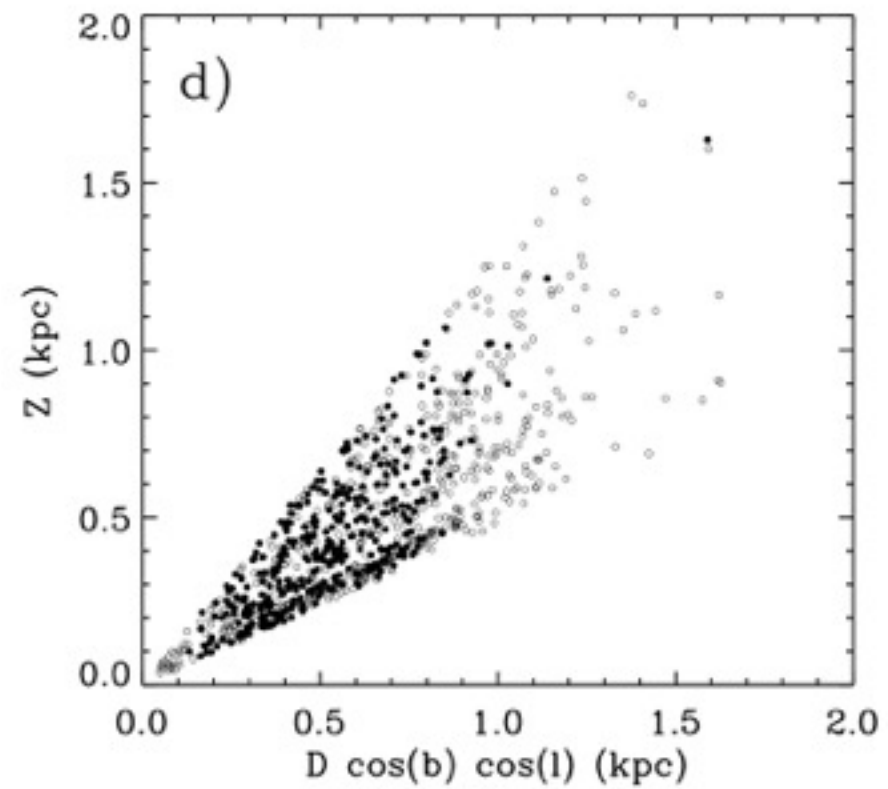
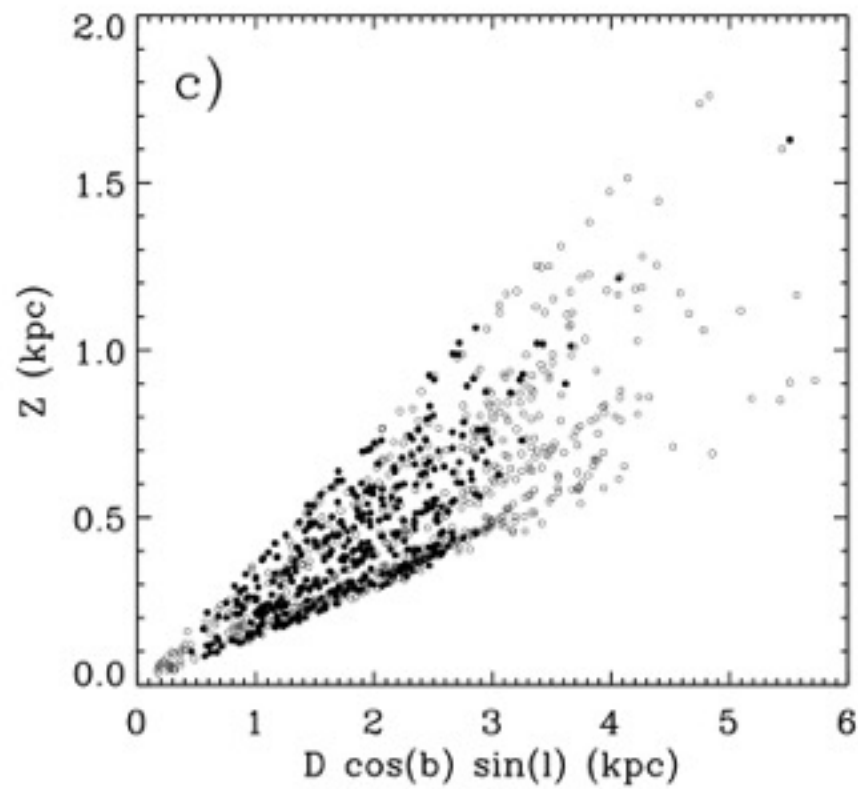
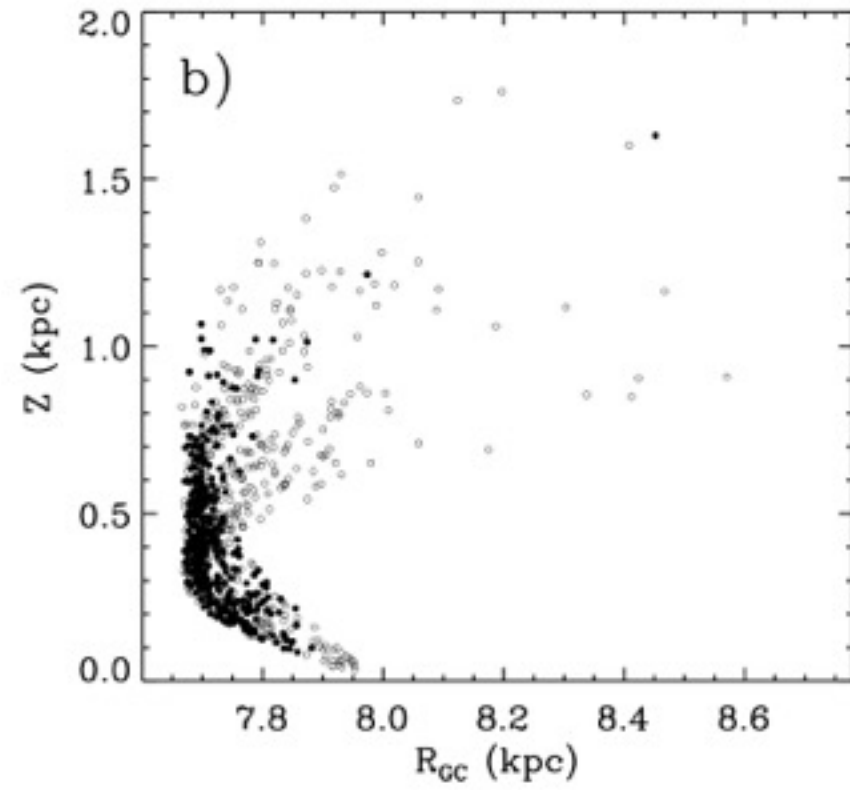
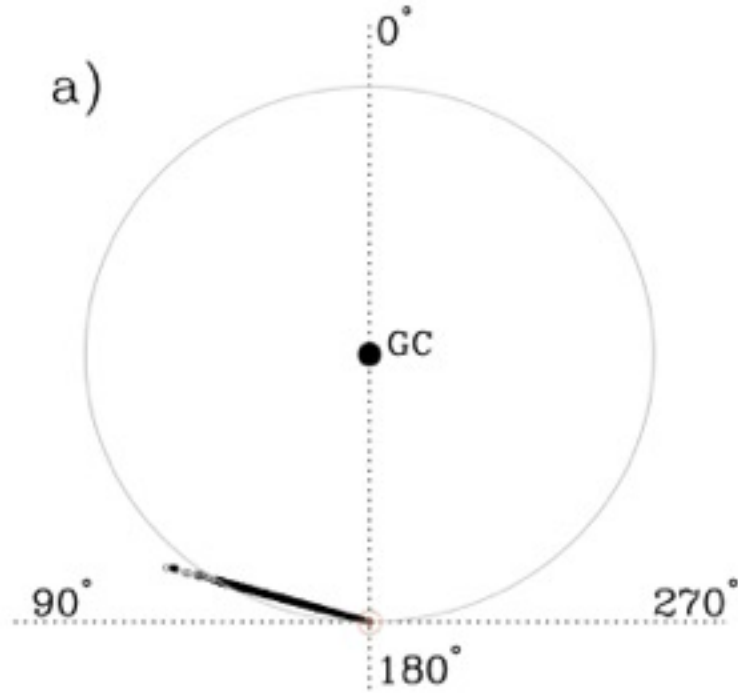
# ***Strömgren survey for Asteroseismology and Galactic Archaeology***



**989 seismic stars**  
**29000 stars**

**Casagrande, Silva Aguirre, Stello et al. (2014)**

# In situ





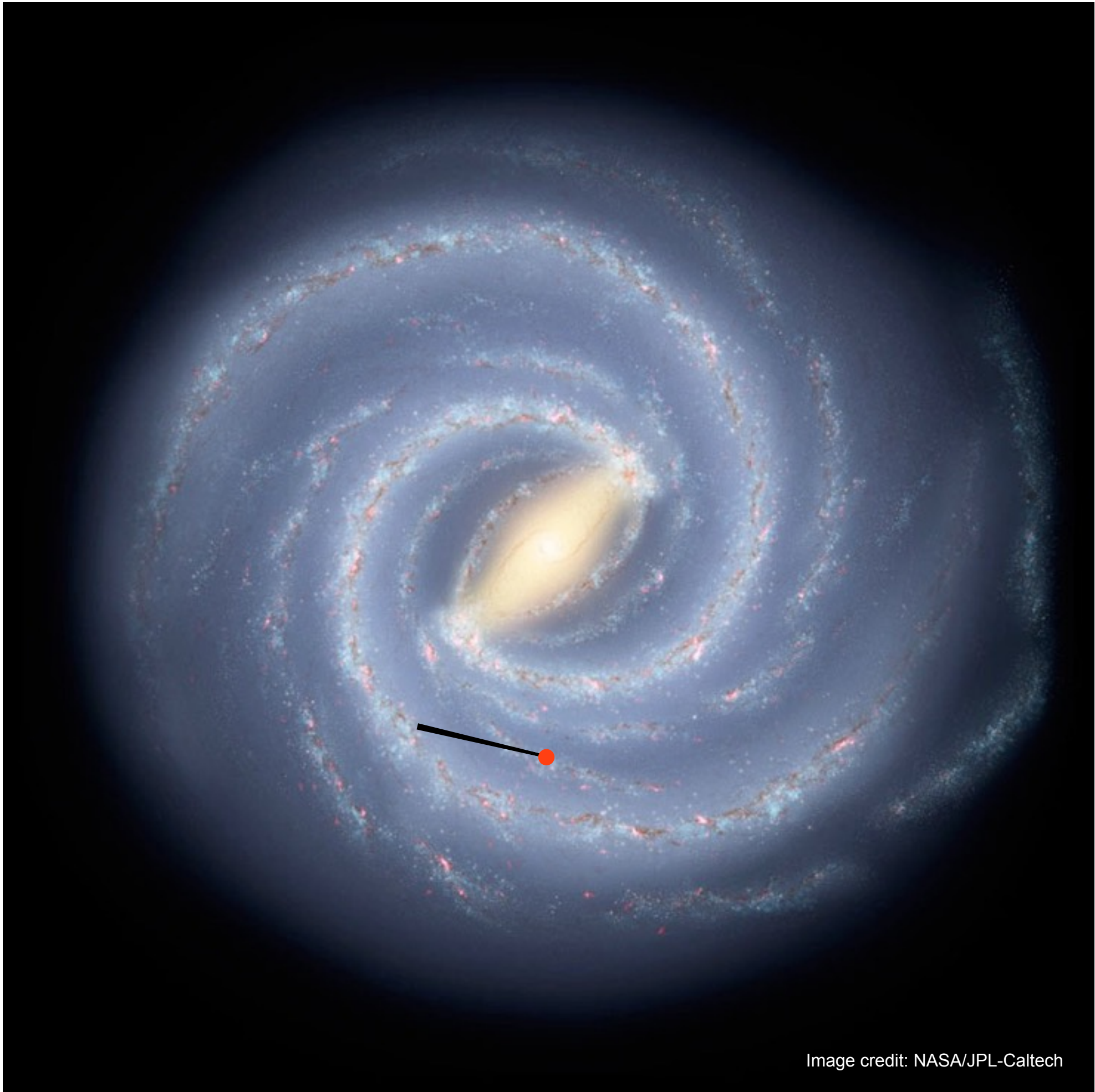
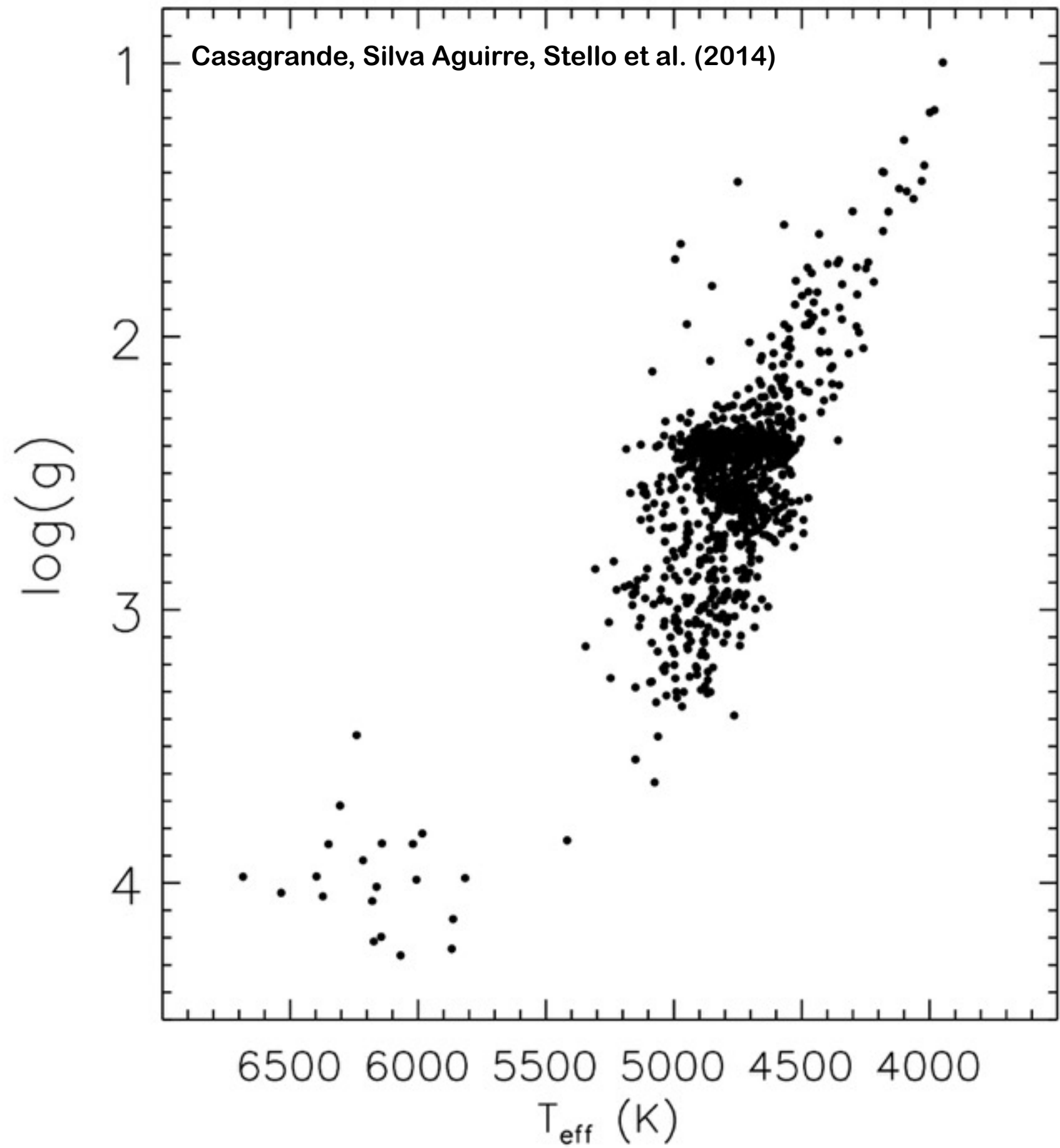


Image credit: NASA/JPL-Caltech

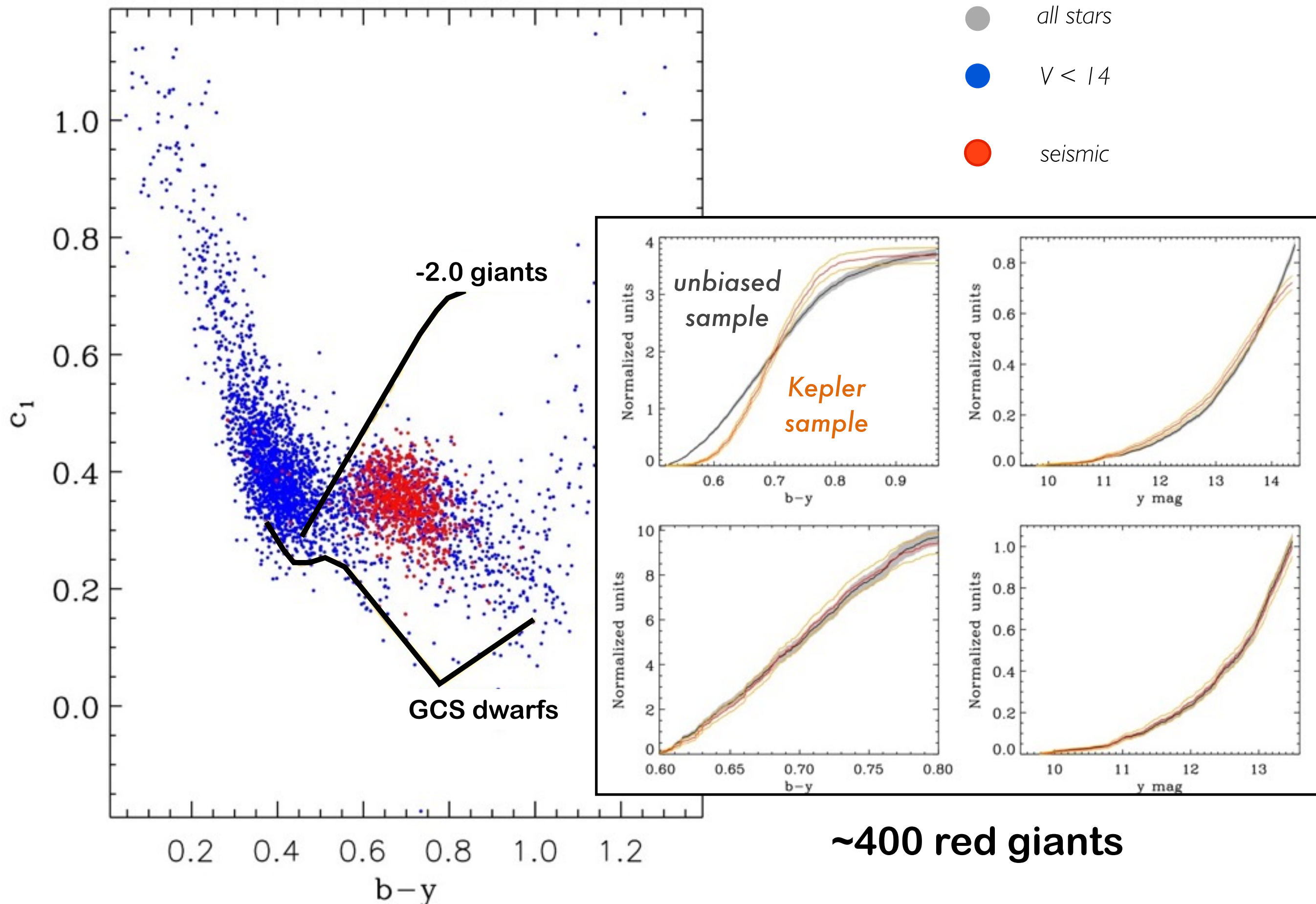




# WYSIWYG?

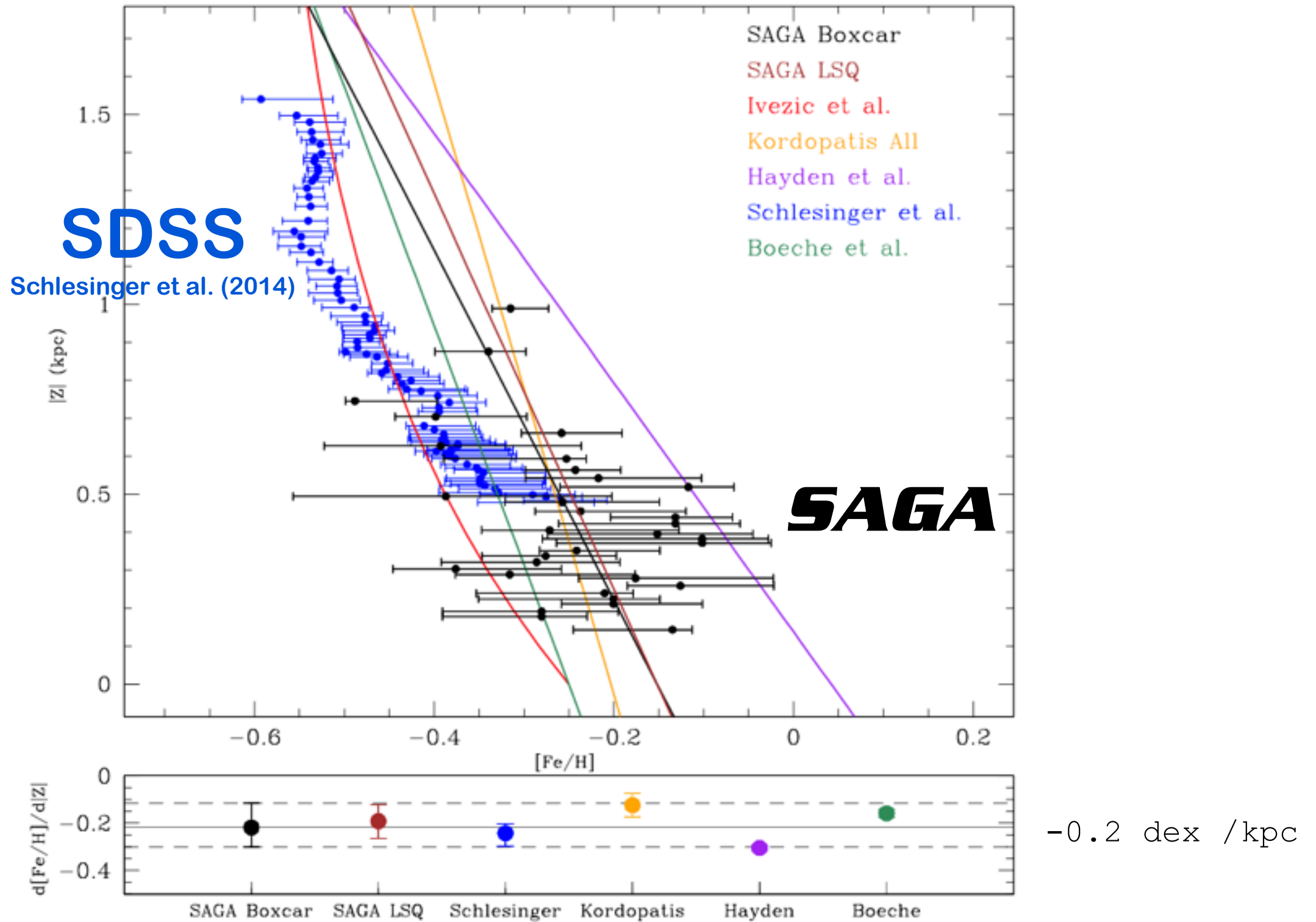
(the magic of asteroseismology?)

# Benchmarking



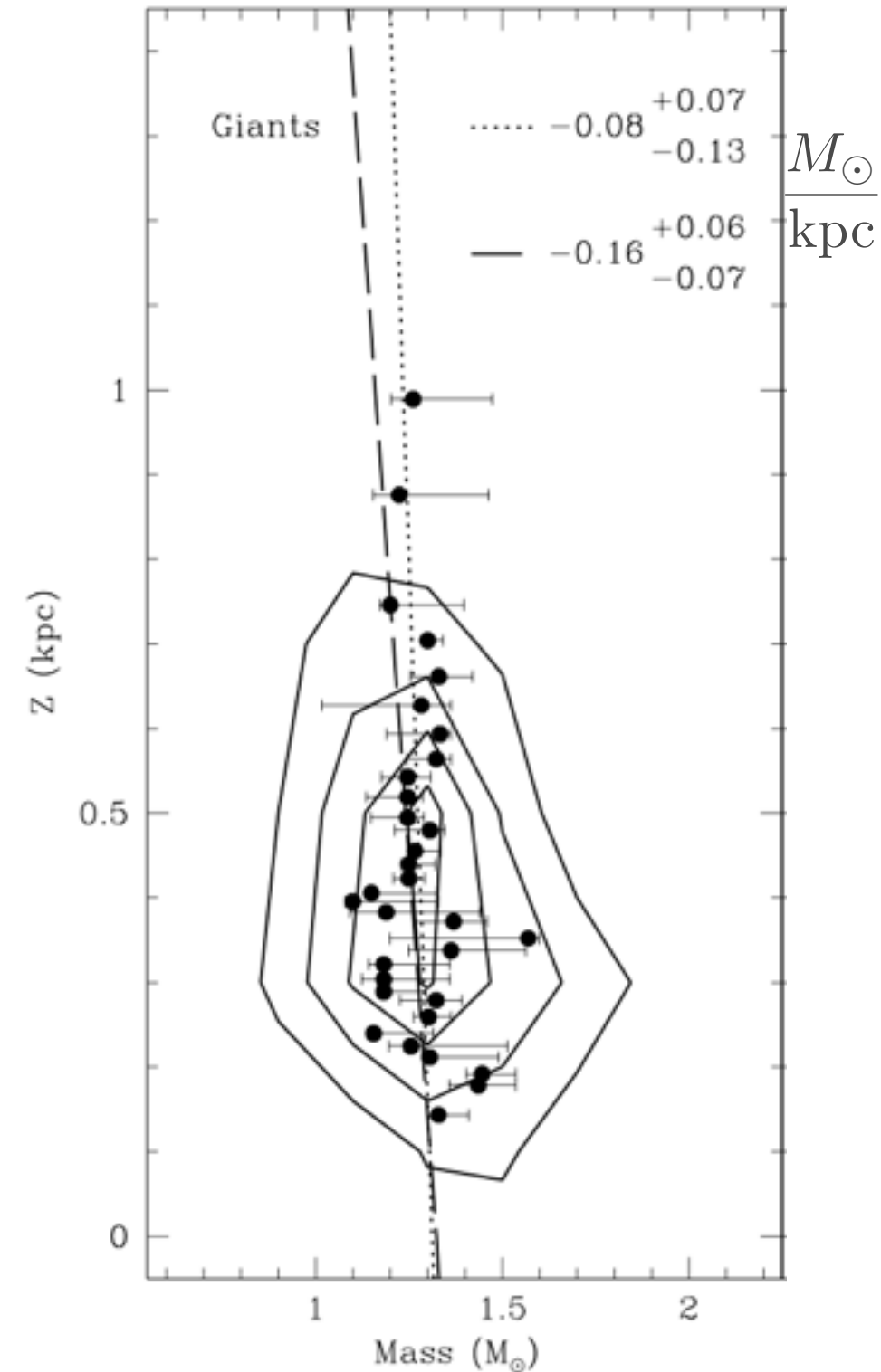
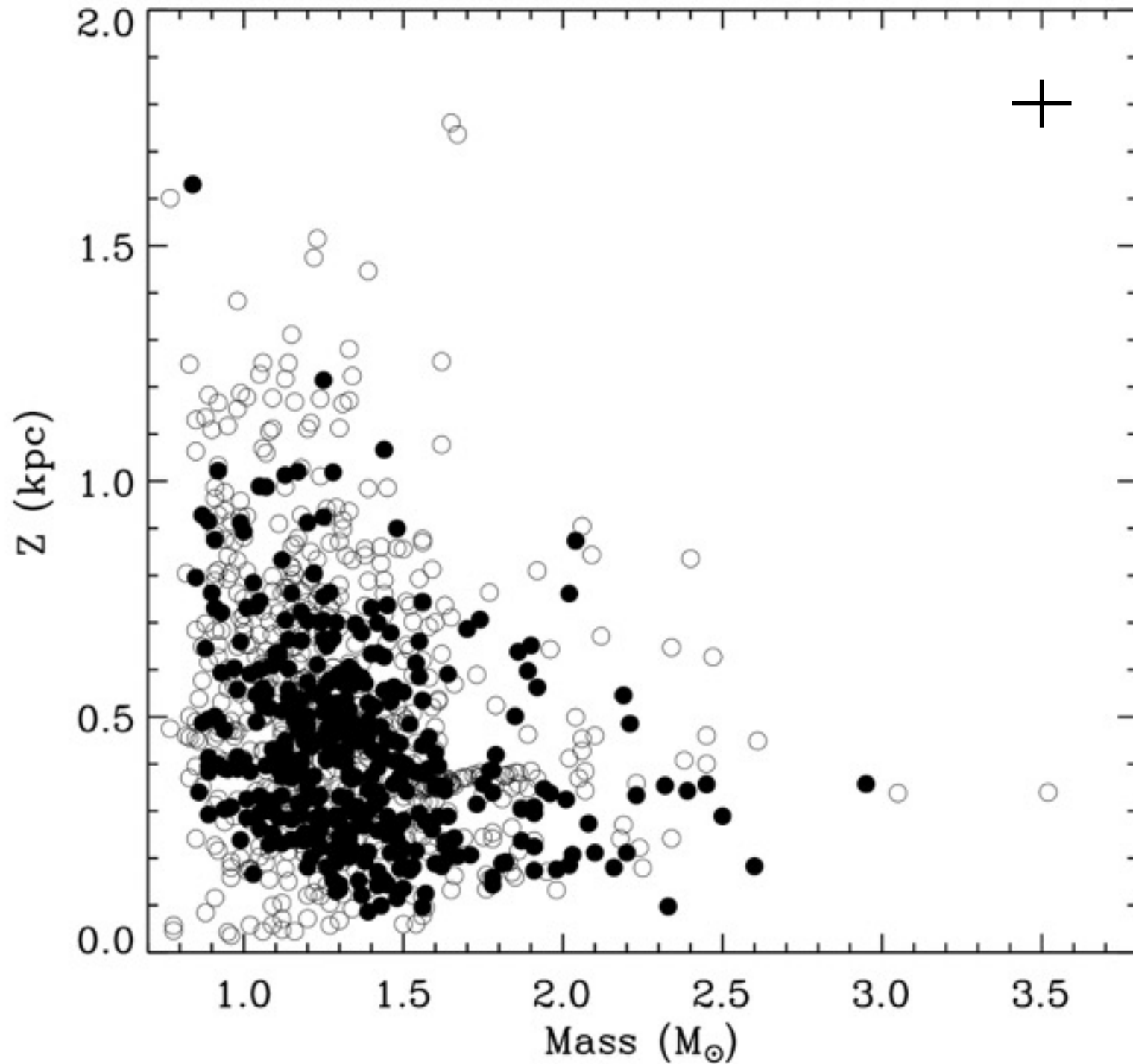
# [Fe/H] gradient

Schlesinger et al. (in prep)



# Stellar Mass gradient

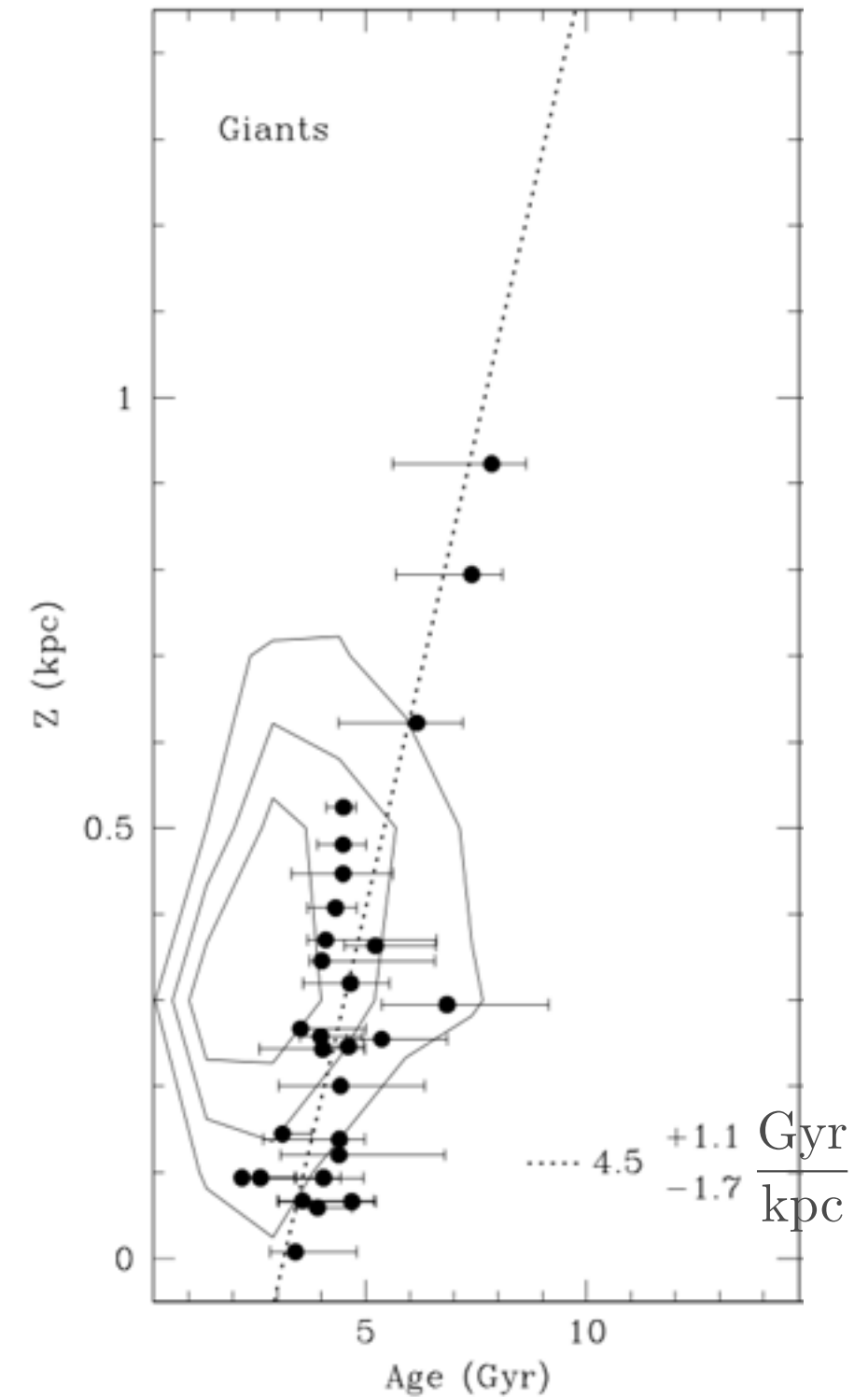
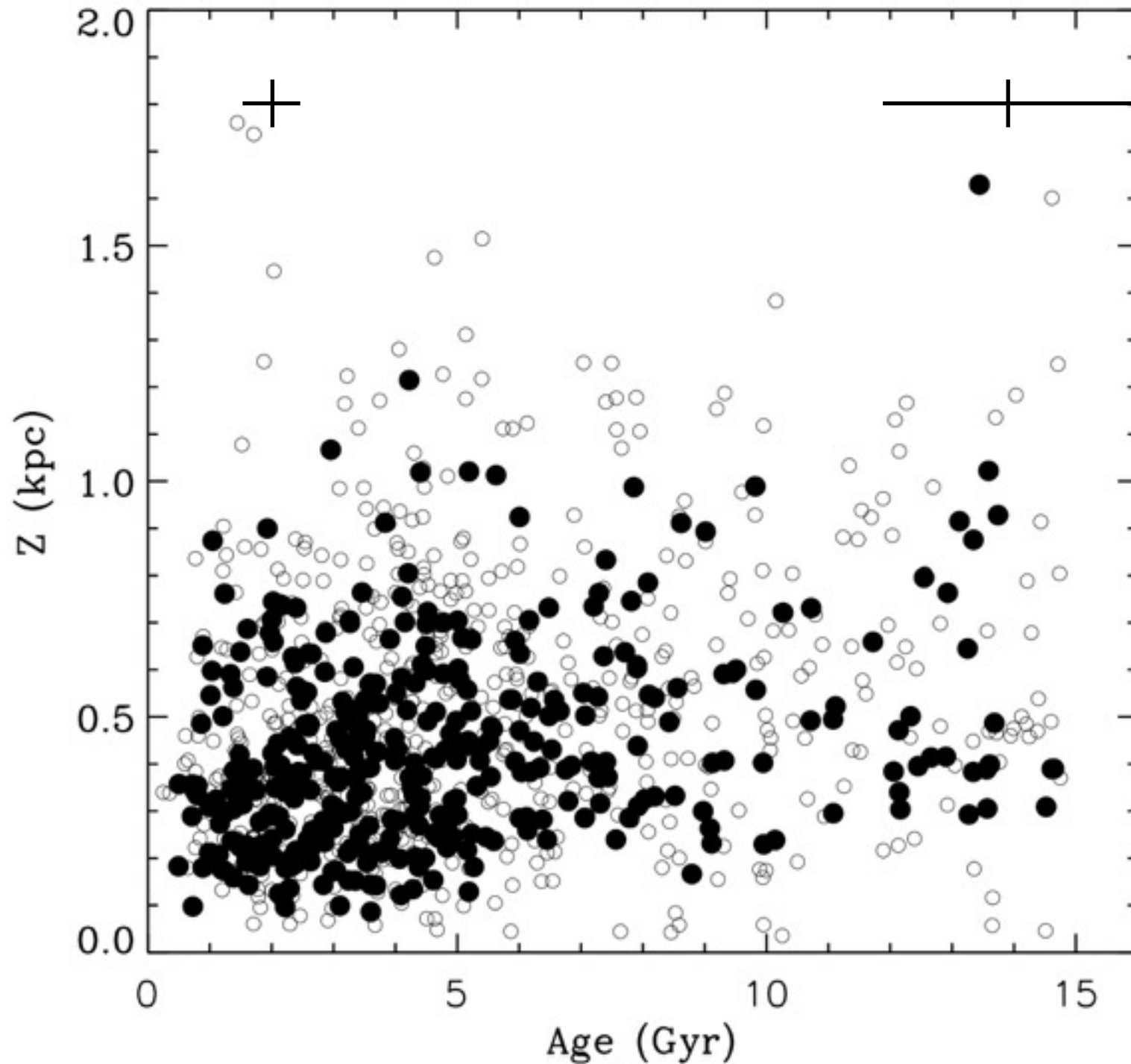
Casagrande, Silva Aguirre, Schlesinger et al. (in prep)





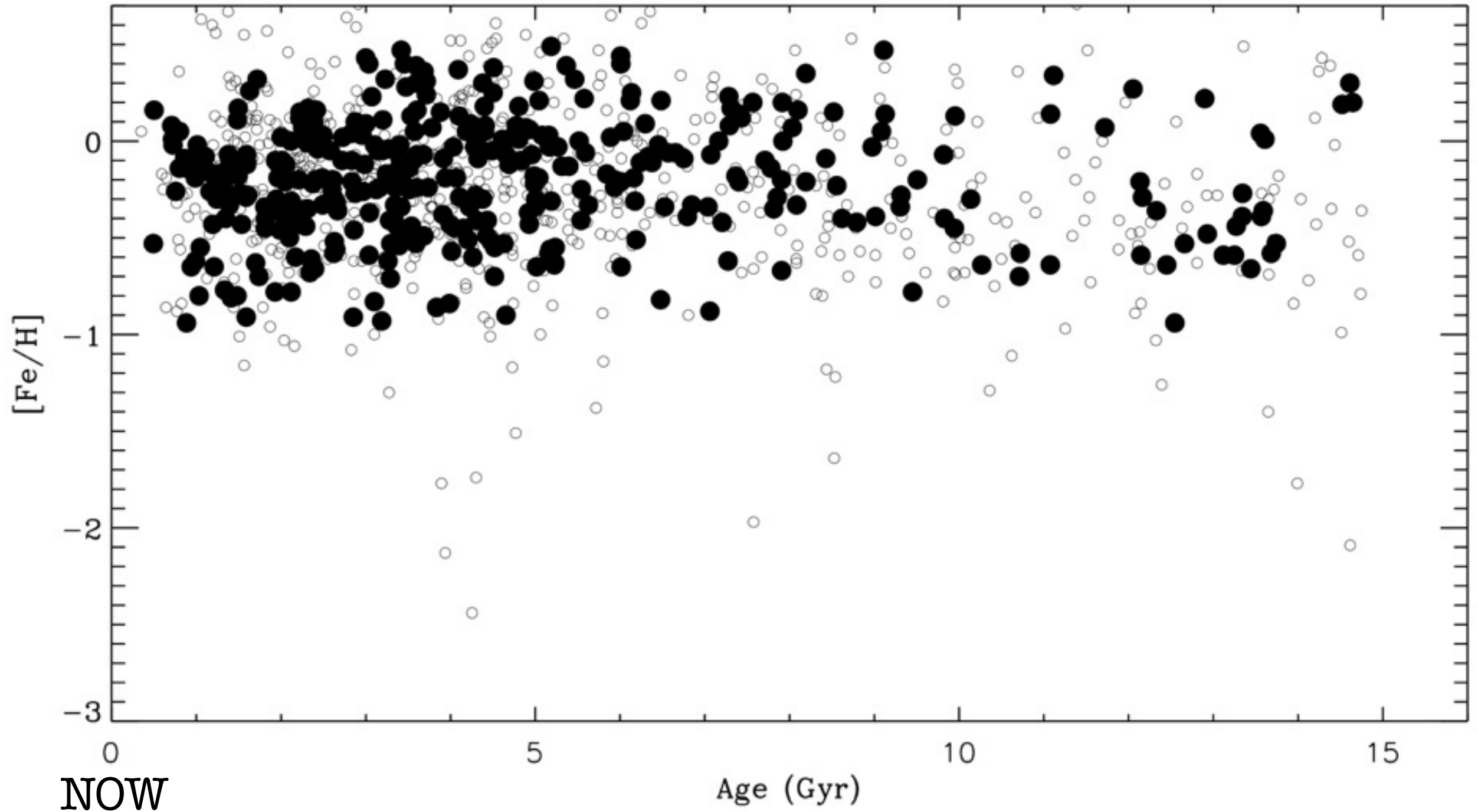
# Age gradient

Casagrande, Silva Aguirre, Schlesinger et al. (in prep)



# Age-Metallicity

Casagrande, Silva Aguirre, Schlesinger et al. (in prep)



# Conclusions

**Asteroseismology is ideal for Galactic studies**

**Vertical structure of the disk:**

**metallicity**

**mass**

**age**

**age-metallicity**