

Lithium abundances in high- and low-alpha halo stars

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and

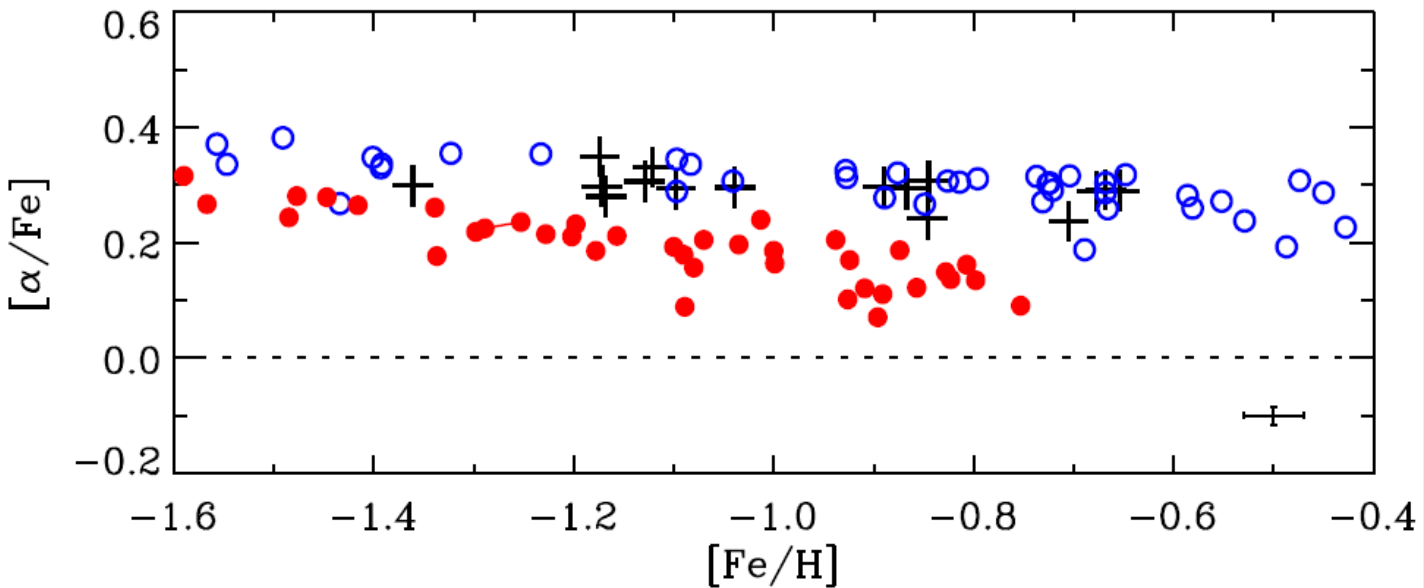
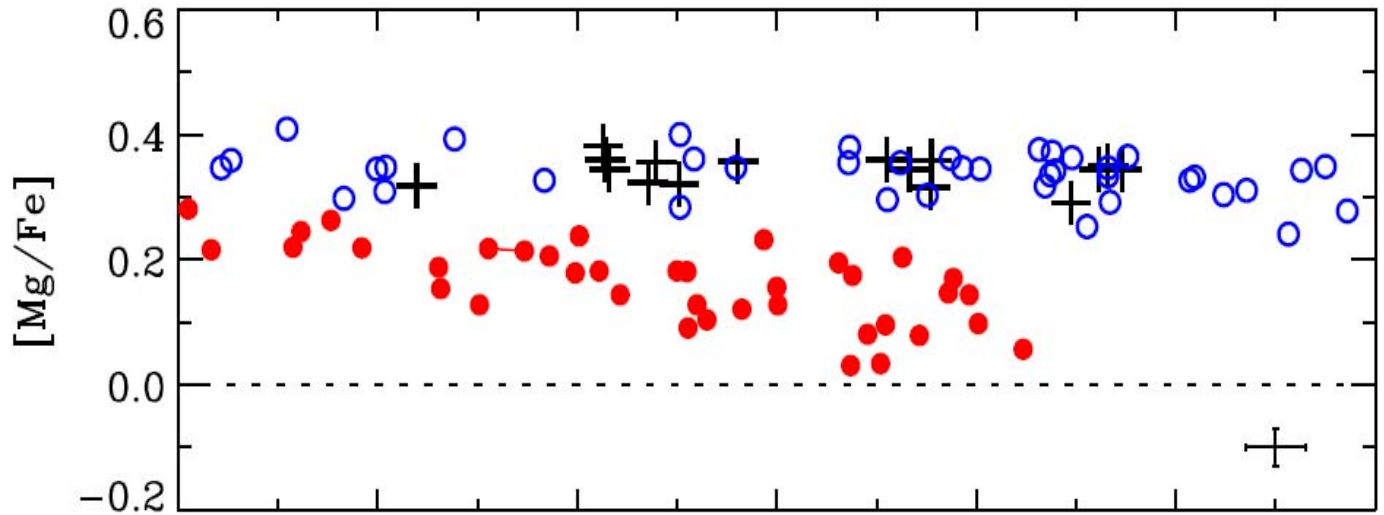
William J. Schuster

Observatorio Astronomico Nacional

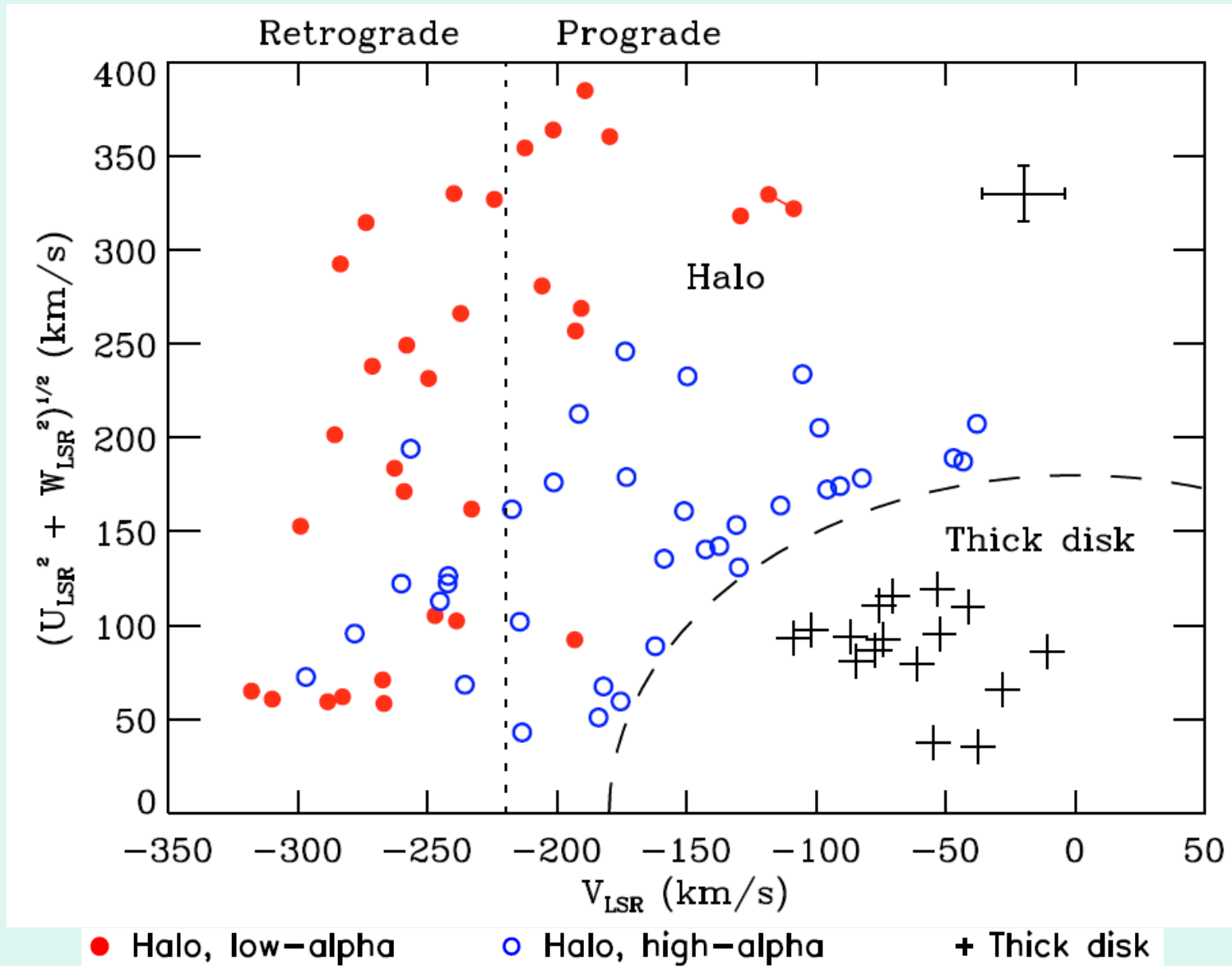
UNAM, Ensenada, Mexico

$$[\alpha/\text{Fe}] = \frac{1}{4} ([\text{Mg}/\text{Fe}] + [\text{Si}/\text{Fe}] + [\text{Ca}/\text{Fe}] + [\text{Ti}/\text{Fe}])$$

● Halo, low- α ○ Halo, high- α + Thick disk



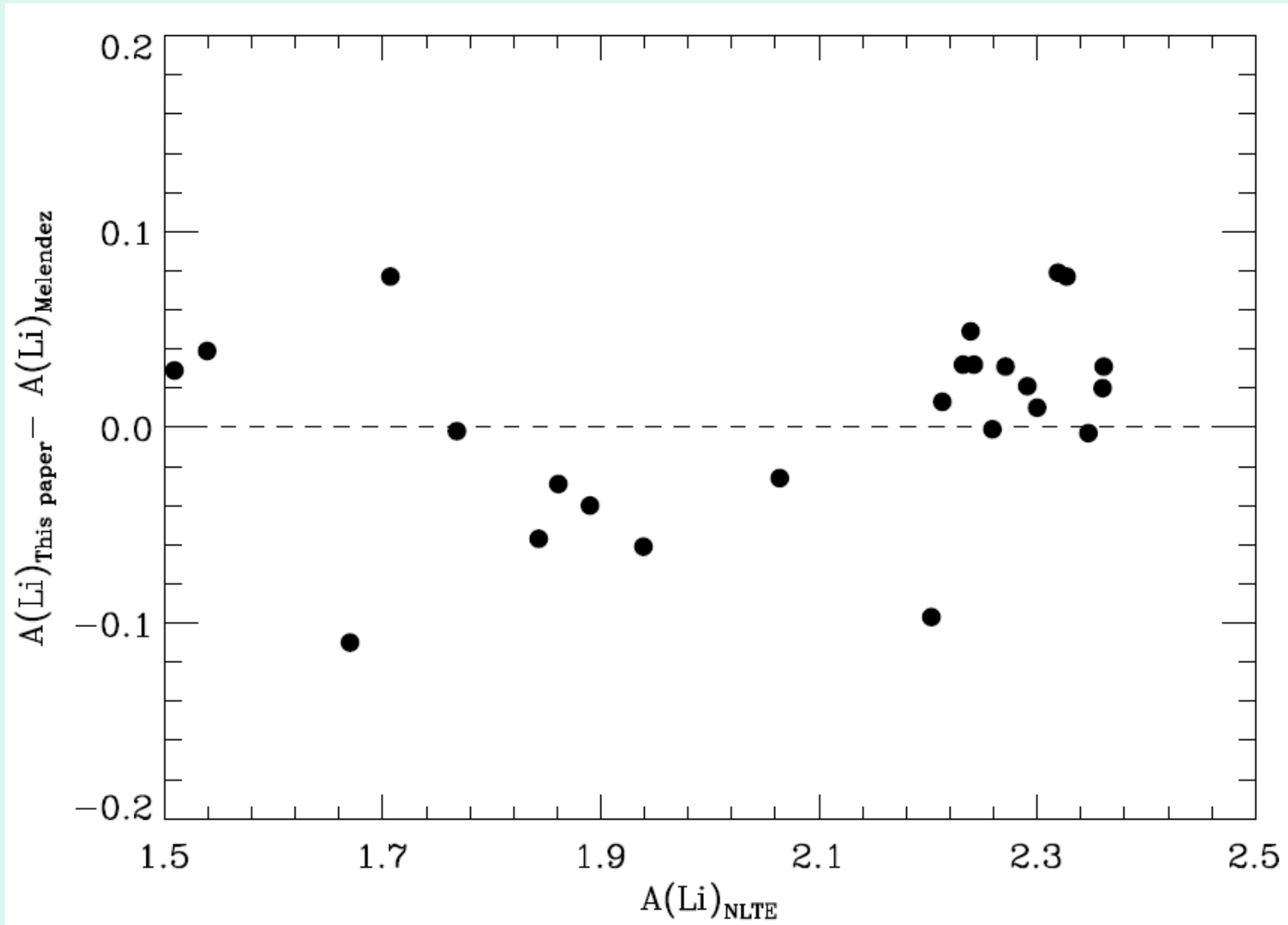
Toomre diagram for stars with $[Fe/H] > -1.4$.

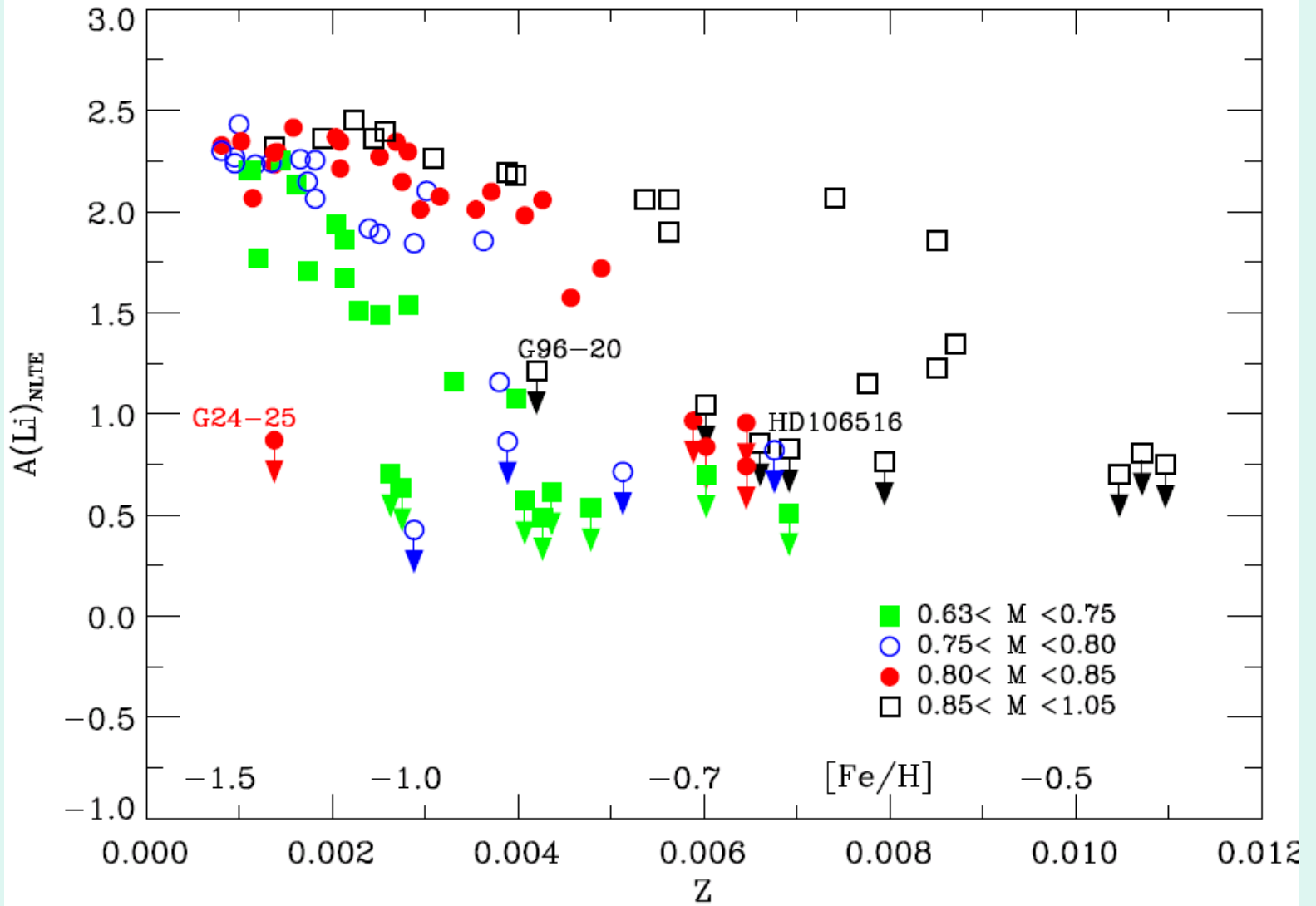


Methods

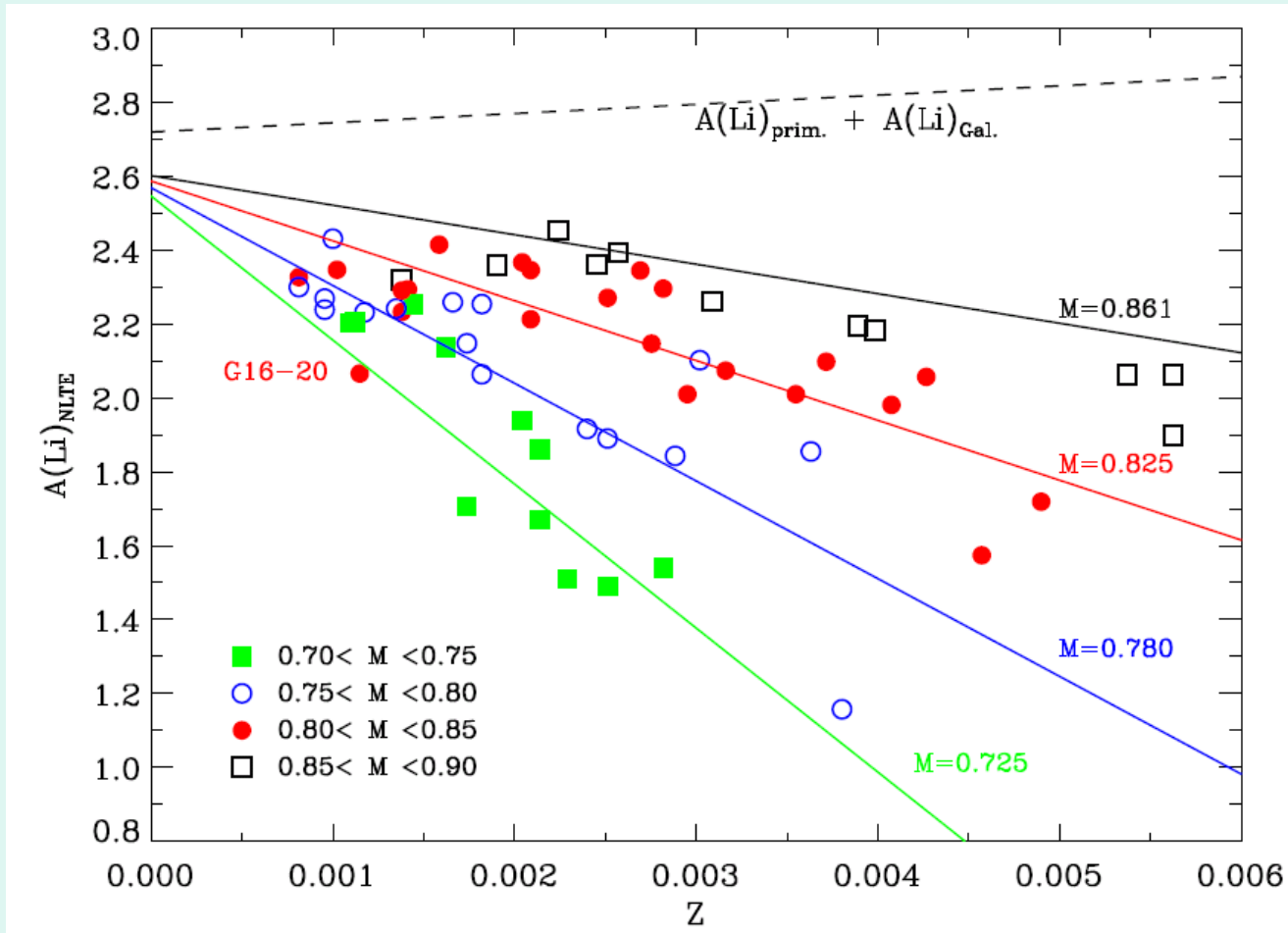
- Lithium abundances from LiI 6707.8 Å line; MARCS models, LTE.
- NLTE corrections from Lind et al. (2009).
- Masses from spectroscopic values of T_{eff} and $\log g$; interpolating between Yonsei –Yale evolutionary tracks.
- Heavy-element mass fraction, Z , from $[\text{Fe}/\text{H}]$ and $[\alpha/\text{Fe}]$; $Z_{\text{sun}}=0.018$.

Comparison of $A(\text{Li})$ with Melendez et al. (2010); rms dev = 0.05 dex.

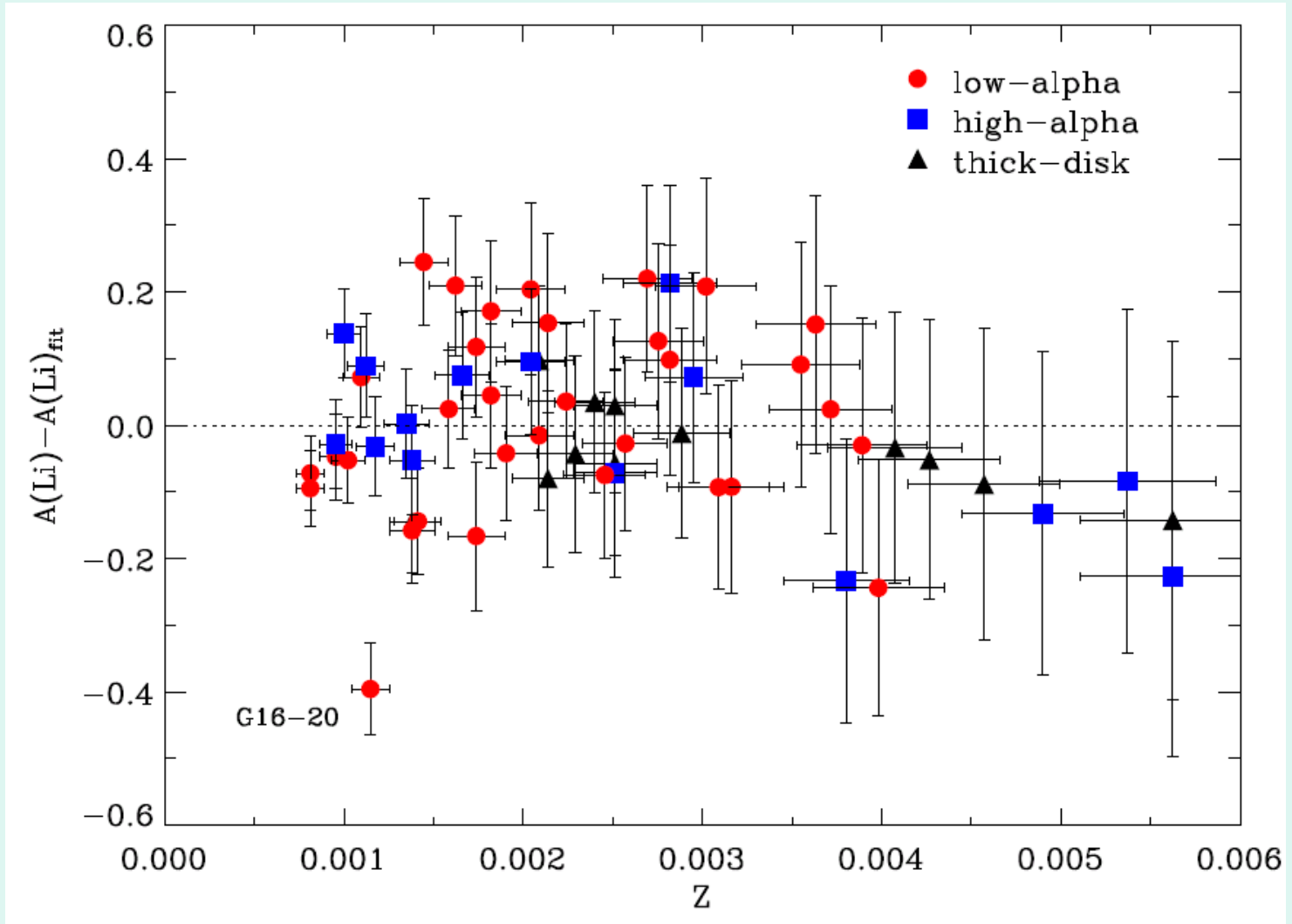




$$A(\text{Li})_{\text{fit}} = 2.253 + 0.405 M - 2043 Z + 2280 M Z$$



Residuals in $A(\text{Li})_{\text{fit}}$; $\text{chi-sq.red.} = 1.12$



Residuals in $A(\text{Li})_{\text{fit}}$

