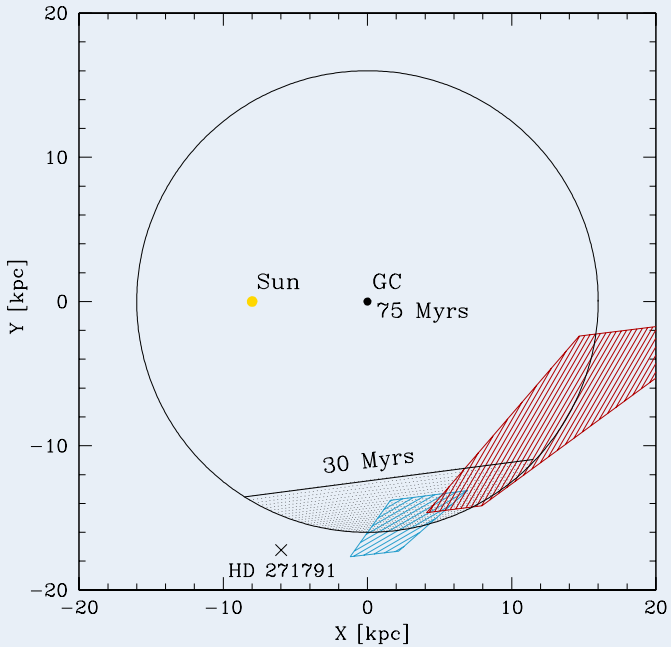
Run-away and Hyper-velocity stars in the Galactic halo

Run-away and Hypervelocity Stars

- Early-type main-sequence stars in the halo (3–10 $M_\odot$)
  escaped from star-froming regions
- Run-away stars:
  Dynamical ejection from Galactic clusters
- Run-away stars:
  Binary-Supernova Ejection
- Hyper-velocity stars (HVS):
  $\approx$ 2 dozen B-stars at 10 – 100kpc
  $v_{grf} > v_{esc}$ unbound to the Galaxy
- tidal disruption of a binary by a SMBH (Galactic Centre)

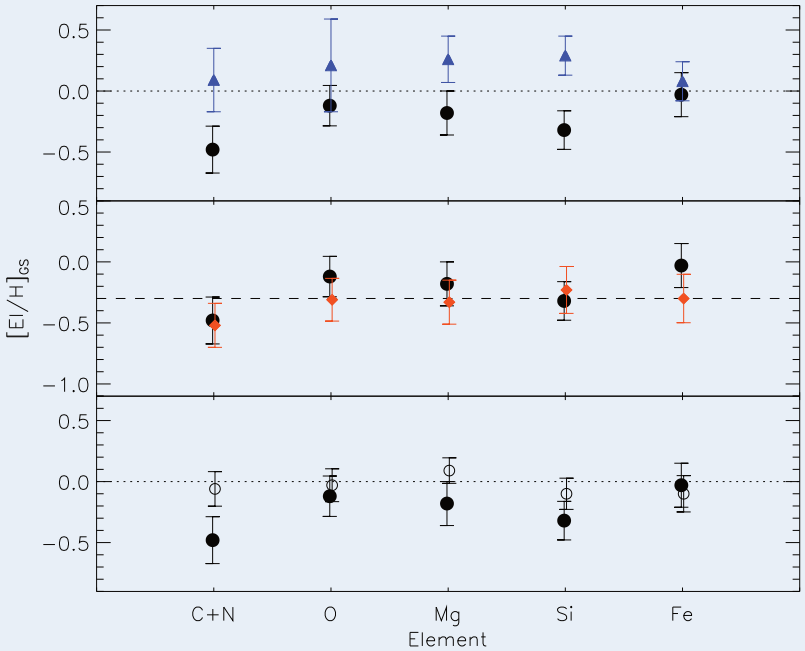
Place of origin: HD 271791



$v_{grf} = 600\,\mathrm{km\,s^{-1}}$:
Reconstructing stellar trajcetory: GC excluded

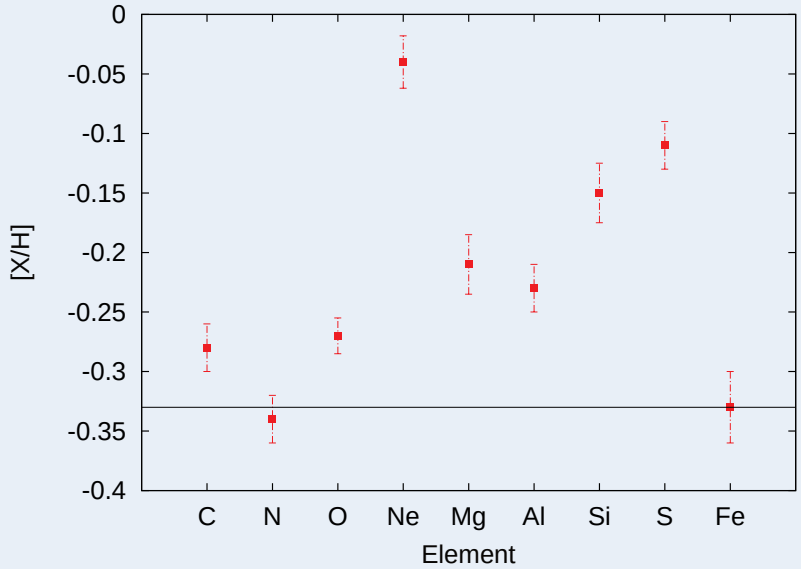
Chemical tagging

Place of birth: HVS 3 from LMC



Compare chemical pattern to potential places of origin: HVS 3 from LMC

Ejection mechanism: HD 271791



Compare chemical pattern to predictions of SN explosion models to identify polution by SN ejecta