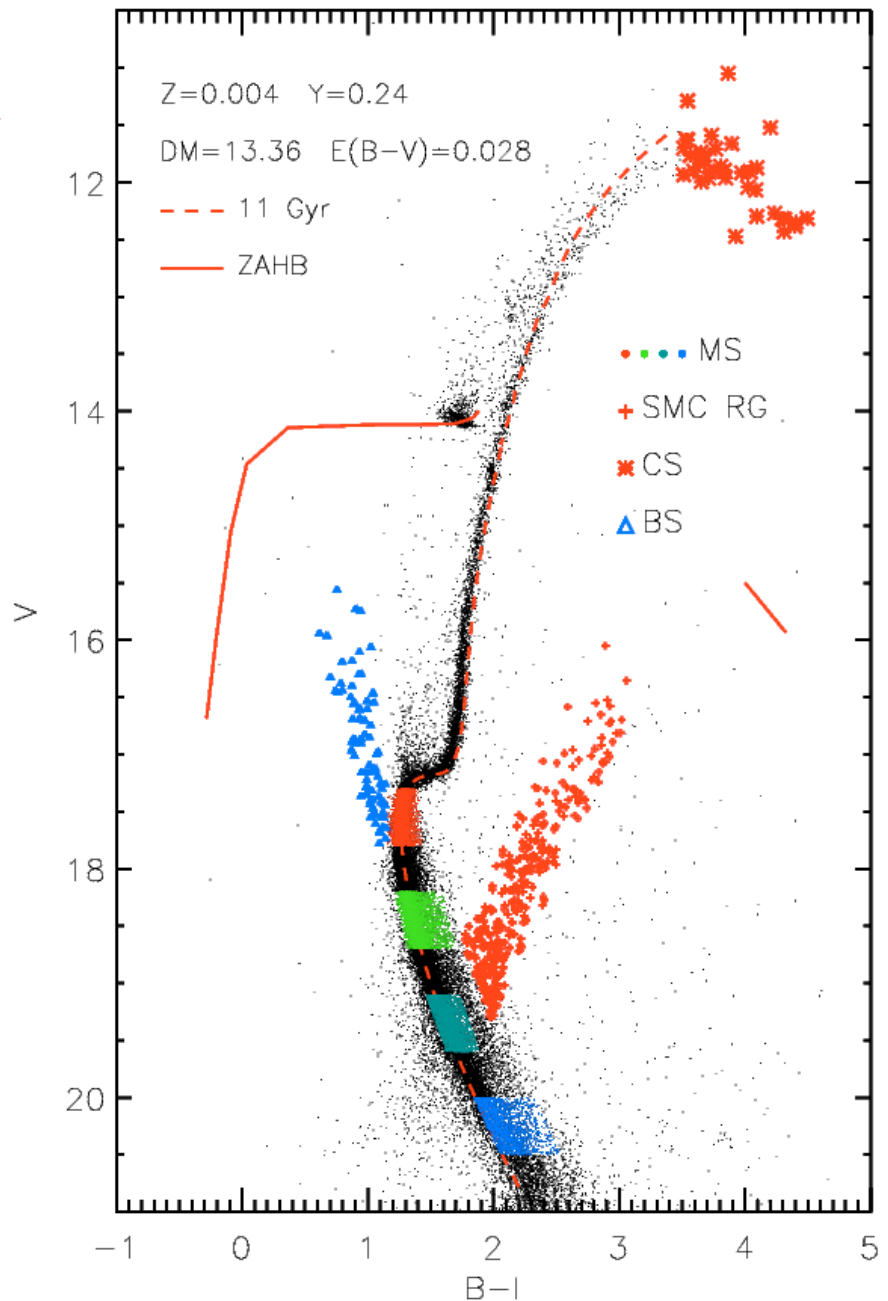


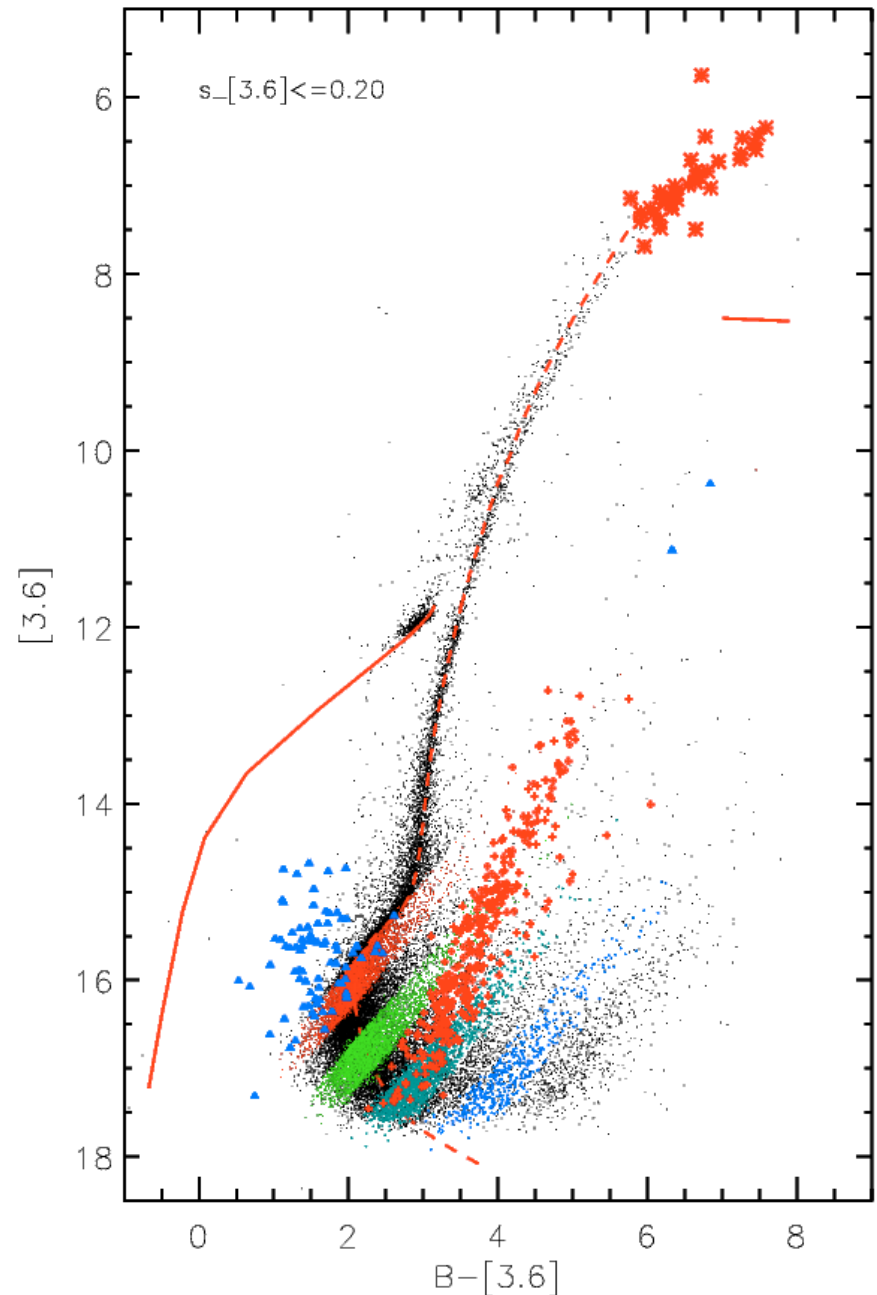
## Visible HR diagram of 47 Tuc

- Clearly shows MS, turnoff, RGB, HR, AGB, mass losing AGBs...
- Good agreement with 11 Gyr isochrone
- Marked: SMC RG, Blue Stragglers and 4 tight groups of MS stars



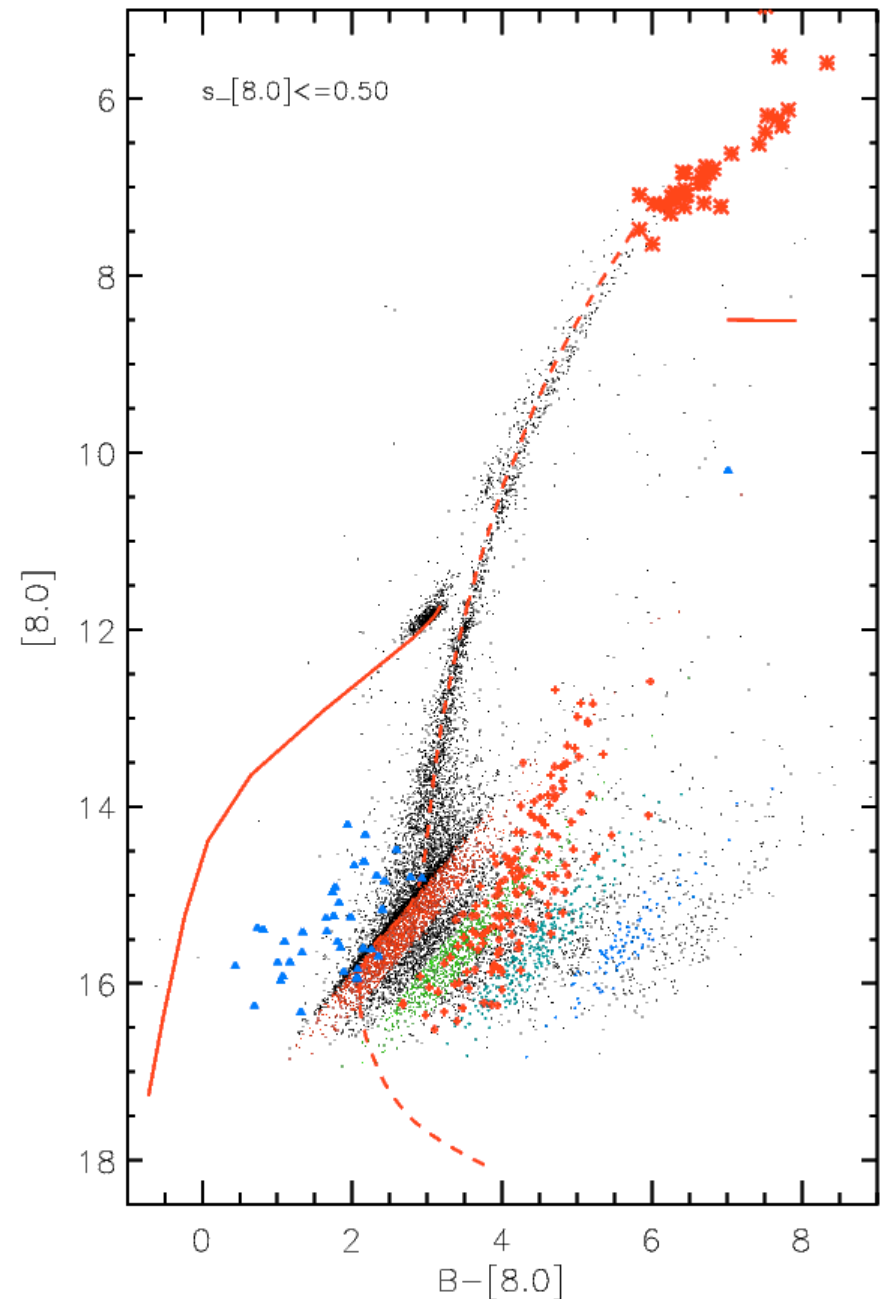
## IRAC HR diagram of 47 Tuc

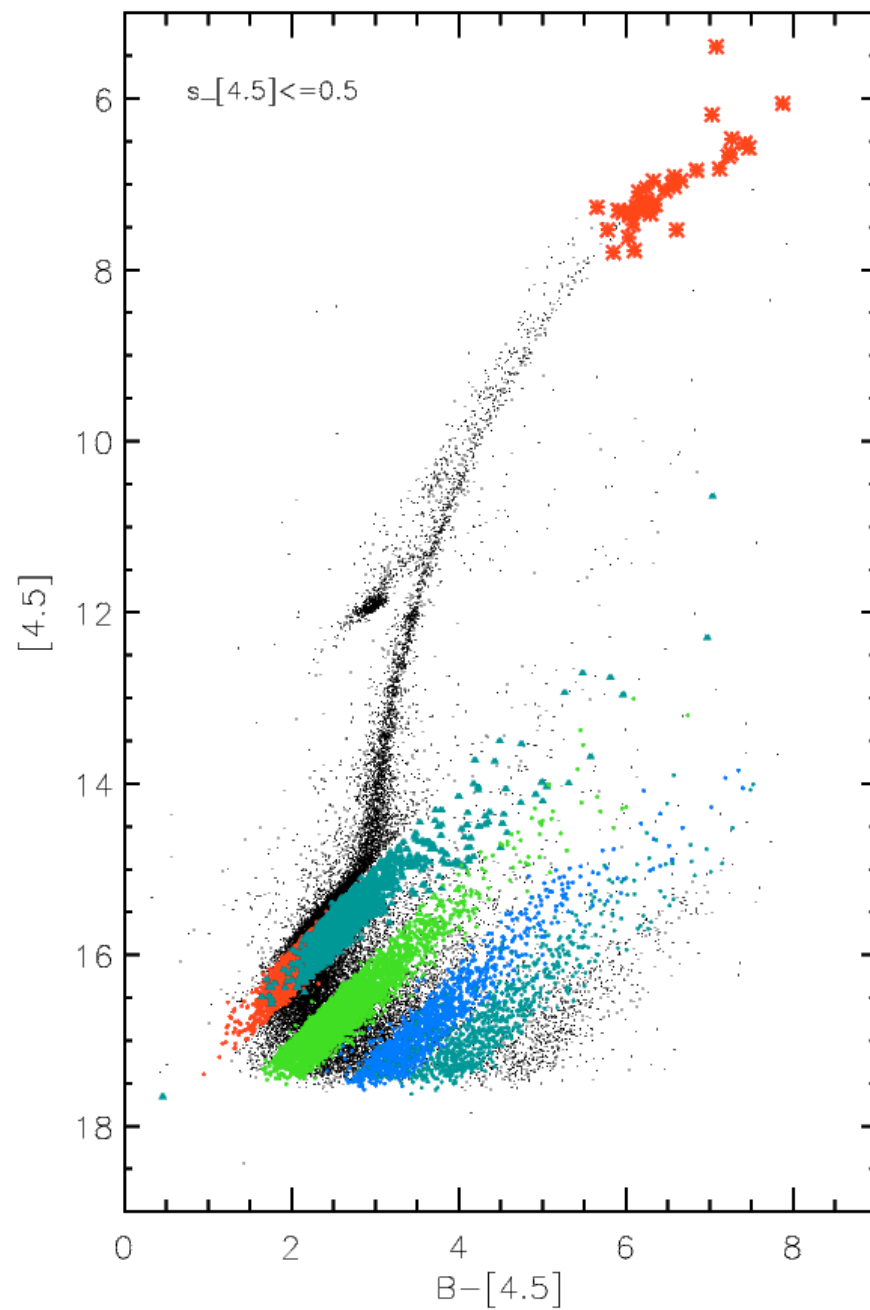
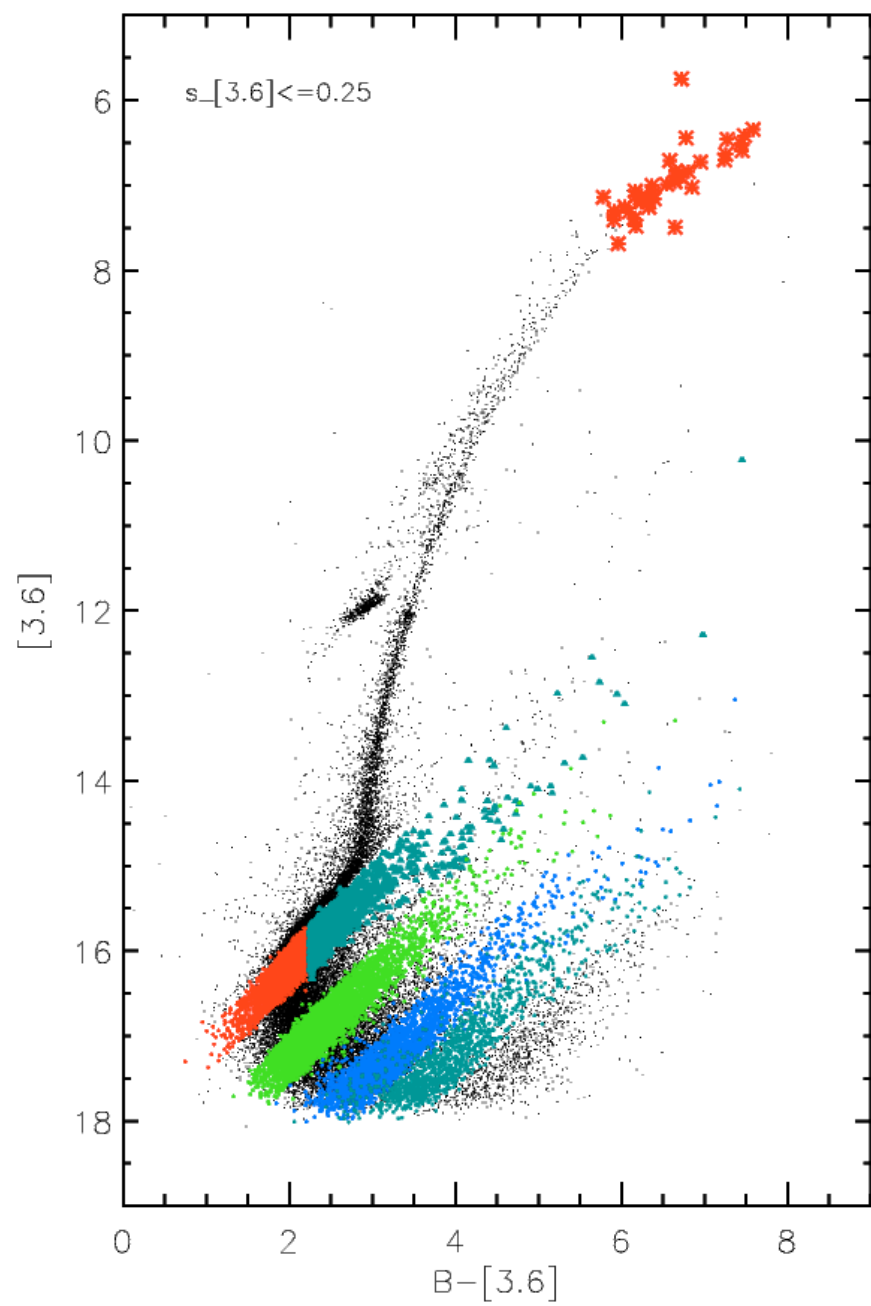
- Above turnoff looks good
- Good agreement with isochrone and ZAHB
- MS (and blue stragglers) broadens by almost 2 mags!!! Only IRAC bands affected
- Broadening NOT due to extinction
- Photometric error is  $\sim 0.05$



## Same in other IRAC colors

- Same effect in all HR diagrams including any IRAC band
- Dispersion much larger than photometric accuracy
- Dispersion is not due to a random error: a star “reddened” at 3.6 micron is also reddened at 4.5 micron and in the other bands





- Part of the cluster observed in separate program with much deeper exposures
- Photometry of two datasets coincides within 5%

IRAC reddening is NOT an artifact of the data, it is on the sky

