The White Dwarf Cooling Sequence of NGC 188

Kurtis A. Williams[1,2], Elizabeth J. Jeffery[1,3], Bi-Qing For[1]

[1] *University of Texas at Austin, Austin, TX, USA;* [2] *Texas A&M University Commerce, Commerce, TX, USA;* [3] *Space Telescope Science Institute, Baltimore, MD, USA*

We present results from our ongoing analysis of Cycle 16 Hubble Space Telescope imaging of the white dwarf population of the old open star cluster NGC 188. We detect a peak in the luminosity function at $M_V \approx 14.25$, significantly brighter than that expected for a 6-8 Gyr old population ($M_V \approx 15$), and we detect very few white dwarfs fainter than the observed peak. Additionally, the total number of white dwarfs detected is significantly less than expected based on plausible IMFs. We discuss various explanations for these discrepancies and additional tests and observations that may shed light on these issues.