Highlights of Spanish Astrophysics XII, Proceedings of the XVI Scientific Meeting of the Spanish Astronomical Society held on July 15 - 19, 2024, in Granada, Spain. M. Manteiga, F. González Galindo, A. Labiano Ortega, M. Martínez González, N. Rea, M. Romero Gómez, A. Ulla Miguel, G. Yepes, C. Rodríguez López, A. Gómez García and C. Dafonte (eds.), 2025

The White Dwarf Population in Our Solar Neighborhood

Torres, S.[1,2], Santos-García, A.[1], Rebassa-Mansergas, A.[1,2], Raddi, R.[1], Zubiaur, A.[1], García-Zamora, E.[1], Marzoa, A.[1], and Camisassa, M.[1]

[1] Departament de Física, Universitat Politècnica de Catalunya, c/Esteve Terrades 5, 08860 Castelldefels, Spain
[2] Institute for Space Studies of Catalonia, c/Gran Capità 2–4, Edif. Nexus 104, 08034 Barcelona, Spain

Abstract

Our understanding of white dwarfs has dramatically increased over the last decade. At the same time, new questions have emerged. Thanks to missions like *Gaia*, we now have high precision photometry and astrometry for nearly 200 000 of these objects, with low resolution spectra available for about half of them. Being the most common stellar remnants and having precise evolutionary models available, white dwarfs serve as stellar chronometers. An initial analysis of a complete sample within 100 pc (∼10,000 objects) reveals a low binary fraction ($\sim f_{\rm b} = 0.32$) and traces of galactic evolution in kinematics and the star formation rate, with a peak $\sim 2.5\,$Gyr ago.

My poster in zenodo.org can be found here