

THE WHITE DWARF BINARY PATHWAYS SURVEY

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Close binaries containing at least one white dwarf are thought to be the progenitors of some of the Galaxy's most exotic objects, such as cataclysmic variables, AM CVn binaries, hot subdwarf stars, double degenerates and thermonuclear supernovae. This zoo of possible evolutionary outcomes demonstrates the complexity of trying to study the population of white dwarf binaries as a whole. However, without a detailed understanding of the evolution of white dwarf binaries, we will remain unable to unravel the pathways towards thermonuclear supernovae and the conditions under which they ignite, and equally, we will not be able to accurately predict or model the low-frequency gravitational background from galactic white dwarf binaries. We began the white dwarf binary pathways survey to take a step back in time to the last stage at which all of these systems were part of the same population of detached white dwarf plus main-sequence star binaries. The properties of these binaries can reveal their past evolution and measure how common different evolutionary channels are. In this talk I will give an update on the progress of this project, including new results from Hubble Space Telescope observations, which reveal a number of systems with very low mass white dwarfs as well as the discovery of long period systems. I will also discuss contamination of the survey from active stars and how Gaia can be used to make far cleaner selections of these types of binaries.