# Preparing for LISA with CFHT

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Very short period double white dwarfs (DWDs) in our Milky Way will be one of the most reliable classes of sources detectable by the upcoming Laser Interferometer Space Antenna (LISA). Around tens of millions of systems are expected to emit gravitational waves (GWs) in the millihertz band, with at least thousands of them being individually resolved. Their parameter distribution will help us refine models of the Milky Way's morphology and understand low mass binary evolution.
Additionally, several tens of these sources are already known through electromagnetic (EM) emission, forming a set of *verification binaries*. As they will play a crucial role in validating both the instrument and the data analysis pipelines, expanding the sample will enhance confidence in LISA's performance. Synergies between GW and EM observations can also be strengthened through follow-up observations that improve the parameter measurements of the sources, offering valuable new insights.
The scientific output of LISA will be strongly enhanced if both EM and GW observations are available for the same source. Now is the time to map as many (potential) LISA sources in the Milky Way as possible. The Canada-France-Hawaii Telescope (CFHT) is particularly relevant for this science case, as its wide-field imager Megacam can observe deeply in the u-band, uncovering white dwarfs located farther within the Milky Way. Starting from a population model, we are able to build mock EM catalogues of white dwarfs, validated by the comparison with real EM observations. The resulting magnitude and color distributions can help us distinguish candidate LISA sources from the broader white dwarf population. This, in turn, enables the definition of the optimal strategy for a new survey to be proposed to the CFHT community, ultimately enhancing our capabilities in multimessenger astrophysics.