

HI emission in the host galaxies of fast radio bursts

Abstract

A key part of understanding the underlying progenitor of fast radio bursts (FRBs) lies in the study of their host galaxies. The star-forming fuel, the neutral hydrogen (HI) content, reveals galaxy history that is not obvious from the stellar content. To date, only three FRB extragalactic galaxies have their HI properties published, yet a curious trend has emerged in HI asymmetry and disturbed distributions, indicative of recent merger activity that can birth FRB progenitors. We propose to follow up two new localisations of FRBs from the CRAFT survey to study the HI content of their host spiral galaxies and further investigate this early trend. This proposal will be the test-bed for a new collaboration playing to the strengths of ASKAP and MeerKAT, in the lead-up to a rapid increase in FRB localisations.