

Proposal Abstract:

Dark galaxies, believed to be dominated by dark matter with little or no stars, have been widely studied. However, some dark matter halos may have abundant HI reservoirs but they are difficult to form stars at their centers. The study of dark galaxies contributes to the study of dark matter halos and is expected to solve the missing satellite problem. The existence and basic properties of dark galaxies have been confirmed in both theory and simulation. However, detecting dark galaxies requires large samples of HI observations to search for ‘almost dark’ galaxies, along with deep optical observations to further examine whether these candidates are genuine dark galaxies or not. We have identified dozens of sources lacking optical counterparts in the FASHI sample. However, after inspecting the datacube, we found that their signal-to-noise ratio is poor, making it difficult to determine whether they belong to sources or RFI. Therefore, for the first stage, we propose 6 hours of FAST observations to check 17 dark galaxy candidates.