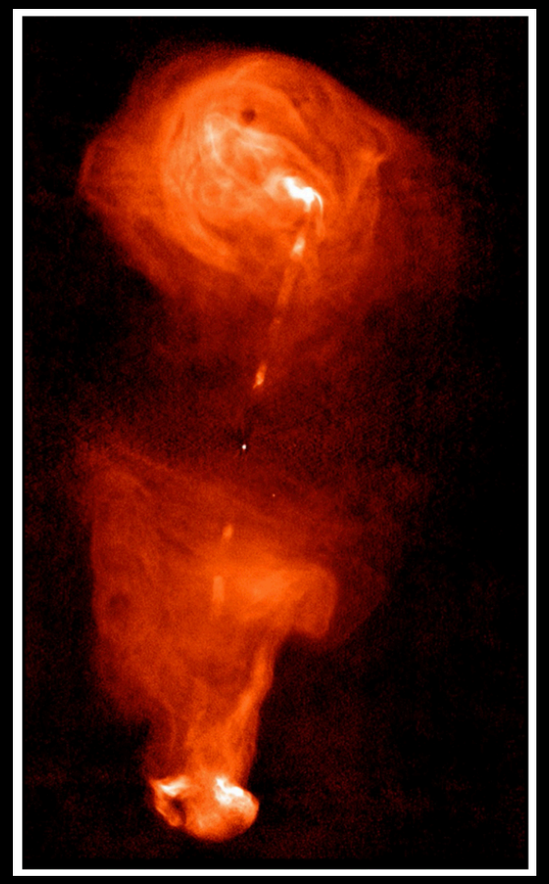
Searching for high redshift radio galaxies

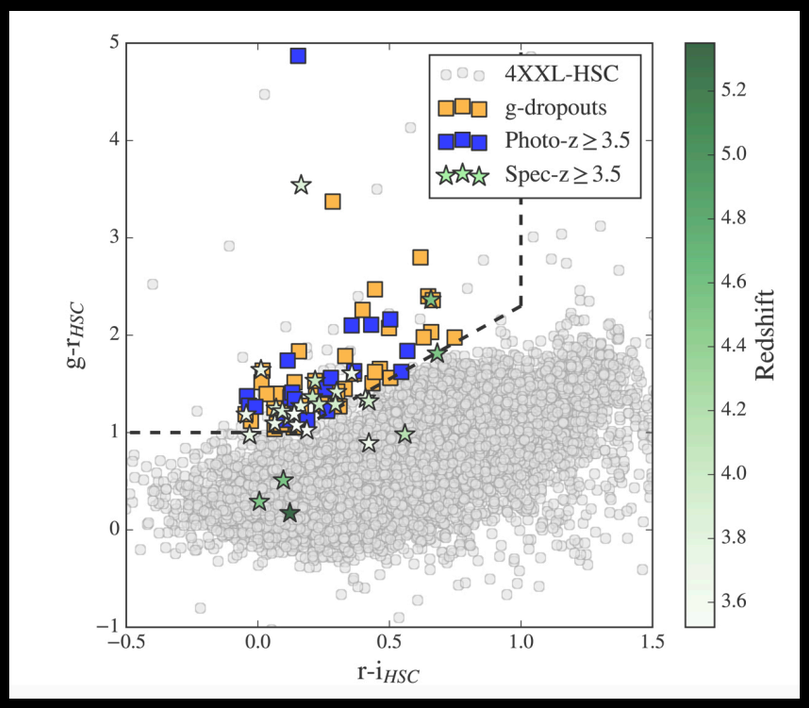
Radio galaxies are a class of active galactic nuclei (AGN) that shine very brightly at radio frequencies. Powered by accretion of matter onto a central fast-spinning supermassive black hole, radio galaxies can display extended radio structures- jets.



They are easily to find in the nearby Universe. Instead, the large population of galaxies at epochs corresponding to z > 3, i.e. when the universe was less than 10 % of its present age, is still elusive.

The discovery of a population of young and forming radio galaxies in the distant universe will open up the opportunity for studying the properties of the early universe. Radio galaxies are believed to reside in the galaxy overdense regions: they are therefore signposts to explore the properties of distant protoclusters that will evolve in galaxies clusters, the largest gravitationally-bound structures of the nearby sky.

How to find high-z radio galaxies



Recently, we have started a project for a systematic search of high redshift radio galaxies using available radio and optical survey of large portion of the sky. We apply the so-called color dropout technique, that consists in comparing the colors of the radio galaxies candidates in different bands (ultraviolet, optical and infrared).

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