

Galaxies: Fuel and Fireworks

Dr Iraklis Konstantopoulos, Australian Astronomical Observatory, 2015

The goal of the project “Galaxies: Fuel and Fireworks” was to establish how the fuelling of star formation by neutral hydrogen gas in galaxies influences the evolution of galaxy properties such as their mass growth, the physical distribution of stellar populations within galaxies and their chemistry. The role played by galaxy environments in governing such properties was also a key focus. The project involved the Fellow taking a lead role in the SAMI Galaxy Survey, using the novel *Sydney-AAO Multiobject Integral field spectrograph (SAMI)* on the Anglo-Australian Telescope with the aim of measuring resolved spectroscopic images for up to 3000 galaxies. The SAMI survey has so far obtained data for half this sample, already making it the largest integral field survey of galaxies in the world to date. Twelve refereed journal articles from this survey explicitly have been published, with more than forty others in various stages of preparation, uncovering and quantifying many aspects of the interplay between gas, star formation, stellar kinematics, and interstellar shocks in galaxies. In early 2015 the collaboration made public and “Early Data Release” of the SAMI data for 107 galaxies representative of the full sample.