

Plenary Talk

THE CALAR ALTO LEGACY INTEGRAL FIELD AREA
SURVEY: A BENCHMARK OF THE LOCAL GALAXY
POPULATION

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The Calar Alto Legacy Integral Field Area Survey (CALIFA) is an imaging spectroscopy survey of galaxies in the local universe to provide a benchmark of galaxy properties and internal processes. CALIFA has been allocated with a significant fraction of the dark and grey time at the Calar Alto observatory using the PMAS instrument at the 3.5m telescope in the years 2010 to 2015. CALIFA has observed and publicly released (<http://califa.caha.es/DR3>) integral field spectroscopy data of 600 galaxies of all Hubble types over the full optical wavelength range from 3700 to 7140 Å, in the redshift range between 0.005 and 0.03 and out to at least 2 effective radii. Example science results include (1) a benchmark oxygen gradient for galaxy disks, (2) the identification of many LINERS as non-AGN, (3) a measurement of the velocity function of galaxies, (4) an appraisal of the dynamical mass to light ratios of galaxies as a function of mass, with implications for dark matter content and initial mass function, (5) a local surface mass density - metallicity relation, (6) a local surface mass density - star formation rate relation, (7) a flattening of abundance gradients due to resolution effects. I will summarize these and other results to give an overview of CALIFA science results.