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Study of the AGN population at intermediate redshifts in the SHARDS survey

A. Hernán-Caballero[1], A. Alonso-Herrero[1], P. G. Pérez-González[2], A. Cava[2], G. Barro[2], M. Balcells[3], N. Cardiel[2], J. Cenarro[4], J. Cepa[3], S. Charlot[5], A. Cimatti[6], C. J. Conselice[7], E. Daddi[8], J. Donley[9], D. Elbaz[8], I. Ferreras[10], J. Gallego[2], R. Gobat[8], R. Guzmán[11], A. Renzini[12], G. Rieke[13], J. M. Rodríguez-Espinosa[3], L. Tresse[14], I. Trujillo[3], V. Villar[2], J. Zamorano[2], J. de Diego[15], J. A. López-Aguerri[3], J. Masegosa[16], C. Muñoz Tuñon[3], M. Prieto[3], and J. Sánchez Almeida[3]

[1] Instituto de Física de Cantabria, CSIC-UC, Santander, Spain
[2] Departamento de Astrofísica, Facultad de CC. Físicas, UCM, Madrid, Spain
[3] Instituto de Astrofísica de Canarias, La Laguna, Tenerife, Spain
[4] Centro de Estudios de Física del Cosmos de Aragón, Teruel, Spain
[5] Institut d'Astrophysique de Paris, CNRS, Université Pierre & Marie Curie, Paris, France
[6] Dipartimento Astronomia, Universitá degli Studi di Bologna, Bologna, Italy
[7] School of Physics & Astronomy, University of Nottingham, Nottingham, UK
[8] CEA, Laboratoire AIM, Gif-sur-Yvette, France
[9] Los Alamos National Laboratory, Los Alamos, NM, USA
[10] Mullard Space Science Laboratory, University College London, UK
[11] Department of Astronomy, University of Florida, Gainesville, USA
[12] INAF - Osservatorio Astronomico di Padova, Padova, Italy
[13] Steward Observatory, The University of Arizona, Tucson, AZ, USA
[14] Laboratoire d'Astrophysique de Marseille, CNRS, Marseille, France
[15] Instituto de Astronomía, UNAM, México, D. F., Mexico
[16] Instituto de Astrofísica de Andalucía, CSIC, Granada, Spain

Abstract

We present the first results of a program aimed to study the stellar populations of moderate luminosity X-ray selected Active Galactic Nuclei (AGN) at intermediate redshifts. We use observations taken as part of the Survey for High-z Absorption Red and Dead Sources (SHARDS) with the optical instrument OSIRIS on the 10.4m Gran Telescopio Canarias (GTC). SHARDS is an on-going ESO/GTC Large Programme that is observing the GOODS-North cosmological field with 24 medium-band filters (22 of 17nm and 3 of 25nm) in the spectral range 500-950nm. Although SHARDS was originally designed to select and study the properties of high-z massive and passively evolving galaxies, it can also provide very valuable information about AGN at intermediate redshifts. We show that the SHARDS observations provide sufficiently high spectral resolution (R$\sim$50) to detect broad absorption stellar features (e.g., the 4000Å break) as well as emission lines and to estimate accurate photometric redshifts. Together with the SHARDS observations we use the wealth of multi-wavelength data from the UV to radio available for this cosmological field to study the stellar populations and star formation histories of AGN at z$\sim$0.5–1.2.