The Great Observatories Origins Deep Survey
VLT/FORS2 Spectroscopy

E. Vanzella, S. Cristiani\textsuperscript{1}, M. Dickinson\textsuperscript{2}, H. Kuntschner\textsuperscript{3}, M. Noesin\textsuperscript{4}, A. Rettura\textsuperscript{5}, P. Rosati\textsuperscript{2}, J. Vernet\textsuperscript{6}, C. Cesarsky\textsuperscript{2}, H. C. Ferguson\textsuperscript{7}, R.A.E. Fosbury\textsuperscript{8}, M. Giavalisco\textsuperscript{9}, A. Grazian\textsuperscript{2}, J. Haase\textsuperscript{1}, L. A. Moutakas\textsuperscript{7}, P. Popesso\textsuperscript{2}, A. Renzini\textsuperscript{2}, D. Stern\textsuperscript{10} and the GOODS Team

(\textsuperscript{1}INAF - OAT, ITALY - (2) NOAO, USA - (3) ST-ECF, GERMANY - (4) STScI, USA - (5) ESO, GERMANY - (6) Universite' Paris-Sud, FRANCE - (7) JPL, USA - (8) INAF-AOPd, ITALY - (9) INAF-OAR, ITALY - (10) INFN-CNR, ITALY)

Abstract

The Great Observatories Origins Deep Survey (GOODS) is a public, multi-field project that aims to answer some of the most profound questions in cosmology. The program targeted carefully selected fields, the Hubble Deep Field North (GOODS-N) and the Chandra Deep Field South (GOODS-S). In the GOODS-N field, the ESO VLT/FORS2 survey has been the largest of several spectroscopic campaigns. The major effort in the spectroscopic coverage (in terms of area and redshift interval) of the GOODS-N field is currently given by the ESO/VLT FORS2 and VIMOS instruments.

The VLT/FORS2 spectroscopic survey (Vanzella et al. 2005/2006)

The VLT/FORS2 survey according to the photometric selection criteria adopted is exploiting the exquisite efficiency of the FORS2 instrument in the near infrared (up to 10000 to 80000 seconds). Currently, in the FORS2 GOODS-S survey 96 sources have been released to the community (Vanzella et al. 2005 and Vanzella et al. in prep.). The released redshifts have a quality confidence level greater than 90%. Sources have been divided into three classes: emission line(s) (“em.”), absorption line(s) (“abs.”) and both (“comp.”). In Fig. 1 the composite spectra of these three categories at the mean redshift of one are shown.

Lyman break galaxies in the FORS2 survey (Vanzella et al. in prep.)

The Lyman break galaxy (LBG) sample has been selected using the colors criteria of Giavalisco et al. 2004b and 1.382 \(z\) = 15000 km/s. The peaks detected at SNR > 5 are marked with blue 45 degree lines, 0 degree green lines and -45 degree black vertical lines.

References:

Cimatti et al. 2004, Nature, 430, 184
Vanzella et al. in preparation
Vanzella et al. 2006, sub. (astro-ph/0601367)