

GRB 100316A: an explosion at a high redshift galaxy

R. Sánchez-Ramírez¹, J. Gorosabel¹, A. de Ugarte Postigo^{1,2},
A. J. Castro-Tirado¹, C. C. Thöne¹, J. P. U. Fynbo², S. Guziy¹ M. Jelínek¹,
J. C. Tello¹, V. Peris³, and D. Galadí-Eníquez^{1,4}

¹ Instituto de Astrofísica de Andalucía (IAA-CSIC), Glorieta de la Astronomía s/n, 18008 Granada, Spain

² Dark Cosmology Centre, Niels Bohr Institute, Juliane Maries Vej 30, 2100 Copenhagen, Denmark

³ Observatori Astronòmic, Universitat de València, Calle Catedrático José Beltrán 2, 46980 Paterna, Spain

⁴ Centro Astronómico Hispano-Alemán (CAHA A.I.E), Jesús Durbán Remón 2-2, 04004 Almería, Spain

Abstract

We report the results of the target of opportunity (ToO) observations done hours after the GRB100316A with the GTC (+OSIRIS). These observations represent the first successful spectroscopic ToO executed at GTC (GTC67-10A) for a GRB. The spectral observations, performed with the low resolution R300B and R300R grisms of OSIRIS, shows a smooth continuum truncated by a damped Ly- α absorption. A careful analysis of the trace reveals a faint Ly- α emission slightly offset from the afterglow trace. We interpret this line as the Ly- α emission coming from the GRB host galaxy at redshift $z = 3.155$.