GRB 130606A: VLT/X-shooter redshift confirmation

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We observed the optical afterglow of GRB 130606A (Ukwatta et al., GCN 14781; Jelinek et al., GCN 14782; Xu et al., GCN 14783) using the ESO VLT equipped with the X-shooter spectrograph. The observations started on 2013-06-07 at 04:09 UT (i.e., 7.08 hr after the burst). A total exposure of 6x600 s was obtained, covering the spectral range from ~3000 to ~21000 A.

A continuum is detected redward of ~8410 A in the VIS/NIR arms of the spectra, consistent with a Lyman alpha dropout at z~5.9, while discrete transmission is present blueward down to ~6505 A. In the spectra prominent absorption lines are detected, such as NV, C II, O I, Si IV, C IV, and Si II, all at a common redshift of z=5.913, fully consistent with the measurements in Castro-Tirado et al. (GCN 14796) and Lunnan et al. (GCN 14798). We also identified at least two intervening absorbers at z=3.451 and at z=2.310 through Mg II and Fe II, respectively.

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