

## **The VLT/X-shooter GRB afterglow legacy survey (#10)**

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The Swift satellite allows us to use gamma-ray bursts (GRBs) to peer through the hearts of star forming galaxies through cosmic time. Our open collaboration, representing most of the active European researchers in this field, builds a public legacy sample of GRB X-shooter spectroscopy while Swift continues to fly. To date, our spectroscopy of about 100 GRB afterglows covers a redshift range from 0.059 to about 8, with more than 20 robust afterglow-based metallicity measurements (over a redshift range from 1.7 to 5.9). With afterglow spectroscopy (throughout the electromagnetic spectrum from X-rays to the sub-mm) we can hence characterize the properties of star-forming galaxies over cosmic history in terms of redshifts, metallicities, molecular contents, ISM temperatures, UV-flux densities, etc.. These observations provide key information on the final evolution of the most massive stars collapsing into black holes, with the potential of probing the epoch of the formation of the first (very massive) stars.