

The peculiar short-duration GRB 200826A and its supernova

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Short Gamma-ray burst (sGRBa) are linked to the merger of compact objects. However the **GRB 200826A is peculiar** because by definition it was a SGRB, with a rest-frame duration of ~ 0.5 s, but this event was energetic and soft, which is consistent with long GRBs (LGRBs) associated with the end states of very massive stars. The relatively low redshift ($z=0.75$) motivated a multi-wavelength follow-up campaign to understand the origin of this burst. To this aim we obtained a combination of deep near-infrared (NIR) imaging in adaptive optics, coupled with optical imaging and spectroscopy. *Our analysis reveals an optical and NIR bump in the light curve whose luminosity and evolution is in agreement with several LGRB-SNe.* It is not compatible with both theoretical models of kilonovae (KNe) and with AT2017gfo, the KNa associated with the gravitational wave signal GW 170817. Analysis of the prompt GRB shows that *this event follows the Amati relation* found for LGRBs. The host galaxy is a low-mass star-forming galaxy, typical for LGRBs, but with one of the highest specific star-formation rates. **We conclude that GRB 200826A is a typical collapsar event in the low tail of the duration distribution of LGRBs.**

ADS link: <https://ui.adsabs.harvard.edu/abs/2021arXiv210503829R/abstract>

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