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The first GRBAlpha and VZLUSAT-2 catalogue: gamma-ray transients and detector sensitivity

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In recent years there have been numerous efforts to build a constellation of small satellites which would provide an all-sky coverage and quick localization of gamma-ray bursts (GRBs). One of the mission proposals is the CAMELOT constellation with a newly developed gamma-ray detector composed of a CsI(Tl) scintillator coupled with silicon photomultipliers (SiPMs). The prototype of this detector is already employed in two space missions, GRBAlpha 1U CubeSat launched in March 2021 and VZLUSAT-2 3U CubeSat launched in January 2022. To date, the satellites have detected over 200 gamma-ray transients. I will show the first catalogue of the transients detected by these two missions and present the empirical sensitivity of the detector. The weakest GRB detection belongs to the faintest 10% of those observed by Fermi/GBM which demonstrates the detector potential for routine observation of GRBs.

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