

# Very-High-Energy Gamma-ray observations of the Galactic magnetar SGR 1935+2154 with the CTAO Large-Sized Telescope prototype

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Magnetar flares are one of the possible explanations for Fast Radio Bursts (FRBs). The first evidence for the FRB-magnetar connection was provided in April 2020, when the hard X-ray and soft gamma-ray bursts emitted by SGR 1935+2154 (detected by INTEGRAL, AGILE, Insight-HXMT, Konus-Wind) were observed to be associated with FRB emission. SGR 1935+2154 is a Soft Gamma Repeater, i.e. a source of short and irregular non-thermal bursts at keV–MeV arising from a magnetar, and it is the first known source linked to a FRB.

We report on the observations performed on SGR 1935+2154 with the Large-Sized Telescope prototype (LST-1), which will be the first telescope for the Cherenkov Telescope Array Observatory (CTAO), during periods of high-energy activity of the source. We search for a possible TeV counterpart of the emission with LST-1. While we did not detect significant very-high energy signal from this source, we set upper limits to the light curve and spectral energy distribution.

Furthermore, we determined upper limits to the short-scale, very-high energy transient emission of SGR 1935+2154 at the times of known high-energy bursts simultaneous to LST-1 observations.

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