

# Monitoring the magnetar SGR 1935+2154 with the MAGIC telescopes

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The Galactic magnetar SGR 1935+2154 was associated with a bright, millisecond-timescale fast radio burst (FRB) which occurred in April 2020, during a flaring episode. This was the first time an FRB was unequivocally associated with a Galactic source, and the first FRB for which the nature of the emitting source was identified. Moreover, it was the first FRB with a counterpart at another wavelength correlated in time, an atypical, hard X-ray burst, which provides clear evidence for accompanying non-thermal processes. The MAGIC Telescopes are Imaging Air Cherenkov Telescopes (IACTs) sensitive to very-high-energy (VHE,  $E > 100$  GeV) gamma rays. Located at the center of the camera lies the MAGIC Central pixel, a single fully modified photosensor-to-readout chain to measure millisecond-duration optical signals, displaying a maximum sensitivity at a wavelength of 350 nm. This allows MAGIC to operate simultaneously both as VHE gamma-ray and a fast optical telescope. The MAGIC telescopes have monitored SGR 1935+2154 in a multiwavelength campaign involving X-ray, radio and optical facilities. In this contribution, we will show the results on the search for the VHE counterpart of the first SGR-FRB source in this multiwavelength context, as well as the search for fast optical bursts with the MAGIC Central Pixel.

## Keywords

magnetar; very-high-energy; gamma-rays; IACT, multiwavelength, FRB

## Collaboration

MAGIC

## other Collaboration

## Subcategory

Experimental Results

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