

# The Fluorescence Telescope on board EUSO-SPB2 for the detection of Ultra High Energy Cosmic Rays

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The Fluorescence Telescope is one of the two telescopes on board the Extreme Universe Space Observatory on a Super Pressure Balloon II (EUSO-SPB2). EUSO-SPB2 is an ultra-long-duration balloon mission that aims at the detection of Ultra High Energy Cosmic Rays (UHECR) ( $E > 1 \text{ EeV}$ ) via the fluorescence technique (using a Fluorescence Telescope) and of Very High Energy (VHE) neutrinos ( $E > 10 \text{ PeV}$ ) via Cherenkov emission (using a Cherenkov Telescope). The mission is planned to fly in 2023 and is a precursor of the Probe of Extreme Multi-Messenger Astrophysics (POEMMA).

The Fluorescence Telescope is a second generation instrument preceded by the telescopes flown on the EUSO-Balloon and EUSO-SPB1 missions. It features Schmidt optics and has a 1-meter diameter aperture. The focal surface of the telescope is equipped with a 6912-pixel Multi Anode Photo Multipliers (MAPMT) camera covering a  $37.4 \times 11.4$  degree Field of View. Such a big Field of View, together with a flight target duration of up to 100 days, would allow, for the first time from suborbital altitudes, detection of UHECR fluorescence tracks.

This contribution will provide an overview of the instrument including the current status of the telescope development.

## Keywords

UHECR, fluorescence detection technique of extensive air showers, Ultra Long Duration Balloon payload, new detector

## Collaboration

### other Collaboration

JEM-EUSO

### Subcategory

Experimental Methods & Instrumentation

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