

Mini-EUSO telescope on board the ISS: in-flight operations and performances

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Mini-EUSO is a high sensitivity imaging telescope that observes the Earth from the ISS in the ultraviolet band (290÷430 nm), through the UV-transparent window in the Russian Zvezda module. The instrument, launched in 2019 as part of the Italian Beyond mission, has a field of view of 44°, a spatial resolution on the Earth surface of 6.3 km and a temporal resolution of 2.5 microseconds. The telescope detects UV emissions of cosmic, atmospheric and terrestrial origin on different time scales, from a few microseconds upwards. Mini-EUSO main detector optics is composed of two Fresnel lenses focusing light onto an array of 36 Hamamatsu multi-anode photomultiplier tubes, for a total of 2304 pixels. The telescope also contains: two ancillary cameras to complement measurements in the near infrared and visible ranges, an array of Silicon-PhotoMultipliers and UV sensors to manage night-day transitions. In this work we will describe in-flight operations and performances of the various instruments.

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