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The Mini-EUSO telescope on the ISS

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The Mini-EUSO project aims to perform observations of the UV-light night emission from Earth. The UV background produced in atmosphere is a key measurement for any experiment aiming at the observation of Ultra High Energy Cosmic Rays (UHECR) from space, the most energetic component of the cosmic radiation. The Mini-EUSO instrument will be placed within the International Space Station (ISS) in the Russian Module and measures through a UV transparent window. The installation is foreseen for 2017. The instrument comprises a compact telescope with a large field of view, based on an optical system employing two Fresnel lenses for increased light collection. The light is focused onto an array of photo-multipliers and the resulting signal is converted to digital, processed and stored via the electronics subsystems on-board.
The instrument is designed and built by the members of the JEM-EUSO collaboration. JEM-EUSO is a wide-angle refractive UV telescope being proposed for attachment to the ISS, which has been designed to address basic problems of fundamental physics and high-energy astrophysics investigating the nature of cosmic rays with energies above 1020 eV.
Mini-EUSO will be able to study beside UHECRs a wide range of scientific phenomena including atmospheric physics, strange quark matter and bioluminescence. The mission is approved by the Italian Space Agency and the Russian Space Agency. Scientific, technical and programmatic aspects of this project will be described.

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