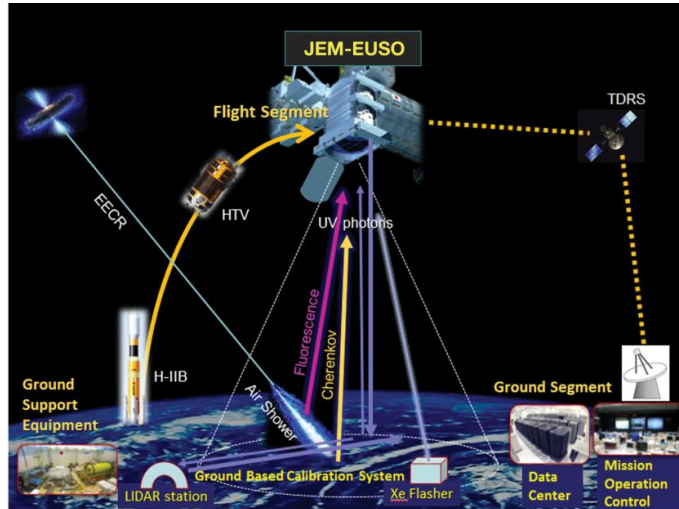


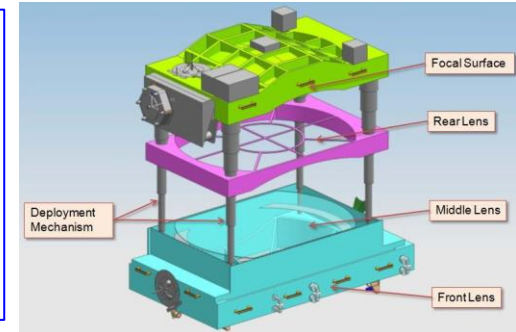
# EUSO-Balloon: the first flight

V. Scotti\* and G. Osteria\*  
for the JEM-EUSO collaboration  
\* INFN of Naples



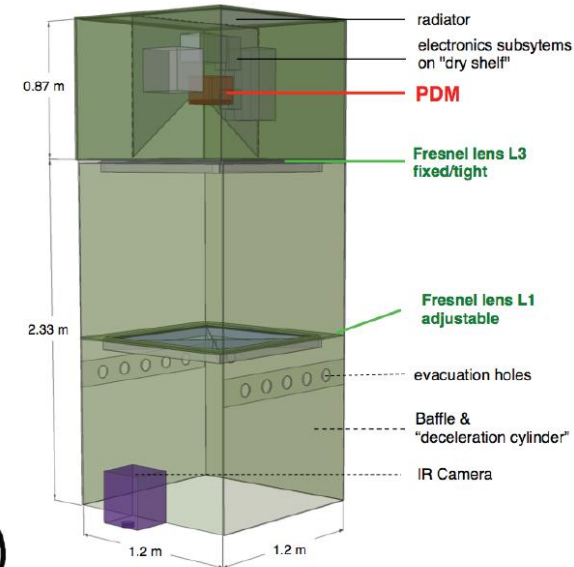
**JEM-EUSO** is a new type of observatory which aims to study the Extreme Energy Cosmic Rays, EECR ( $E > 5 \times 10^{19}$  eV), which are the most energetic component of the cosmic radiation.

JEM-EUSO telescope will observe fluorescence and Cherenkov **UV** photons generated by Extensive Air Showers (EAS) created by EECR.



**EUSO-Balloon** is a pathfinder mission developed by the JEM-EUSO collaboration: a balloon-borne instrument designed to fly to an altitude of 40 km.

- Technology demonstrator: full scale test of JEM-EUSO's key technologies
- Trigger studies
- UV background studies
- Observation of artificial calibrated sources
- 1<sup>st</sup> detection of EAS by looking down from the edge of space

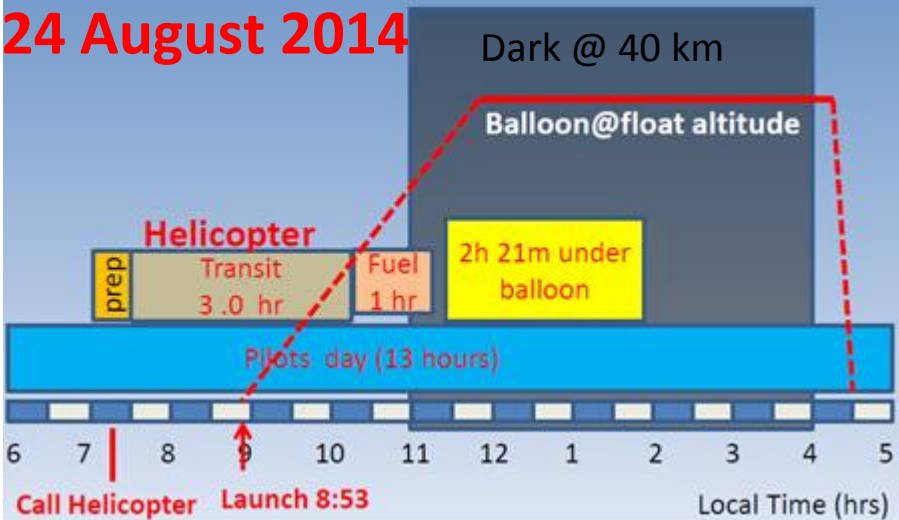


# EUSO-Balloon: the first flight

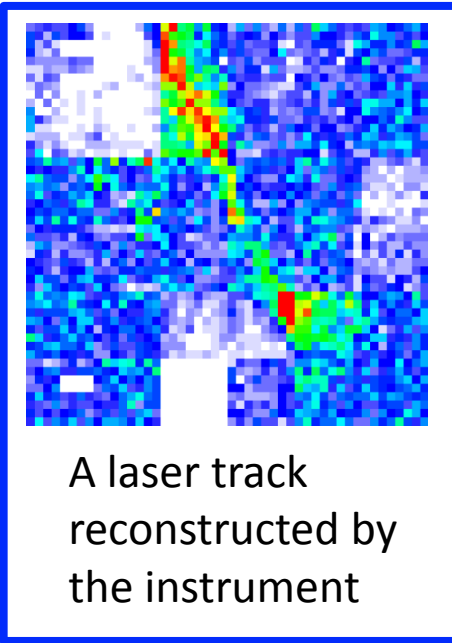
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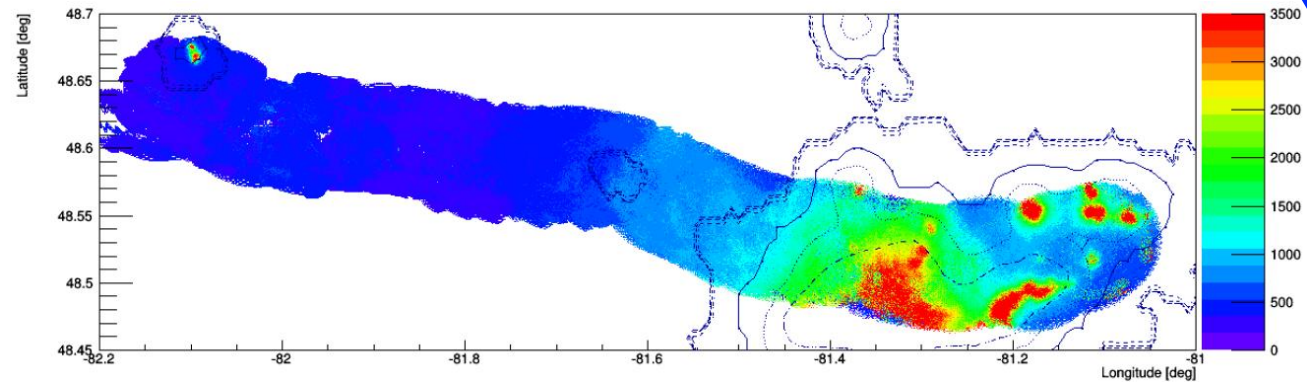
24 August 2014



The time schedule of the balloon flight



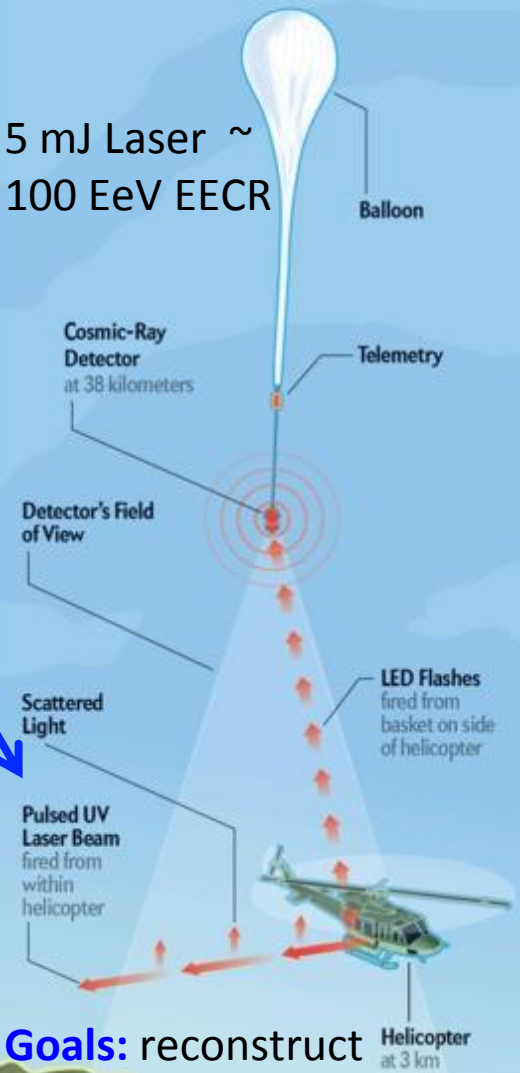
A laser track reconstructed by the instrument



Preliminary measured UV background map compared with the positions of man-made visible lights observed by satellites

## UV in flight calibration

5 mJ Laser ~  
100 EeV EECR



**Goals:** reconstruct laser energy and direction, monitor sensitivity to EASS