

## **EUSO: EXTREME UNIVERSE SPACE OBSERVATORY – FOCAL SURFACE DETECTOR.**

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The design of a photo-detector to look from space to the Extensive Air Showers produced in the atmosphere by Extreme High Energy Cosmic Rays is a challenging task. The EUSO project, proposed to ESA for installation on the International Space Station, has been recently approved by ESA for a phase A study. In this paper the basic guidelines for the EUSO photo-detector design and the main results of the studies carried on so far will be summarized. The outcome of these studies can be used to estimate the performance of EUSO and to provide guidelines for further improvements of the present design. A realistic baseline scheme for the photo-detector, based on the presently known information and constraints, is proposed.

Note: EUSO has been approved for the Phase A study by the European Space Agency ESA. The Phase A study will start in April 2001 and the EUSO Collaboration will be consequently formalized.