

ORISON, a stratospheric instrumentation project with potential applications in meteoroid science

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Astronomical research based on satellites is extremely expensive, complex, requires years of development and the overall difficulties are immense. The H2020-funded ORISON project addresses the feasibility study and the design of a global infrastructure based on platforms onboard stratospheric balloons, which allows overcoming the limitations that the Earth's atmosphere imposes, but at a much lower cost and with fewer complications than in satellite platforms. The overall idea is the use of small low-cost stratospheric balloons, either individually or as a fleet, equipped with stabilized light-weight medium-sized telescopes and other instruments to perform specific tasks in short-duration missions. They can carry different payloads for specific "experiments" too, and should be configurable to some degree to accommodate variable instrumentation. This balloon-based instrumentation should be designed to be launched from many sites on Earth, not necessarily from remote sites such as Antarctica or near the North Pole, and at low cost compared with large balloon programs. Meteor science can be performed using specific low-weight instruments in this stabilized platform provided that there is enough interest in the meteor community, and several science cases will be discussed in this presentation. Some amateur experiments of meteor shower observations with stratospheric balloons will be presented as well. *This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 690013*