Abstract Submitted
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The Global Light System for JEM-EUSO[1] LAWRENCE WIENCKE, Colorado School of Mines, JIM ADAMS, University of Alabama in Huntsville, MARK CHRISTL, NASA Marshall Space Flight Center, JOHANNES ESER, FRED SARAZIN, Colorado School of Mines, JEM-EUSO COLLABORATION — The sources of the highest energy particles known to exist in the universe remain an open question. The falling energy spectrum and low flux of these extreme energy messengers pose a measurement challenge for current and next generation detectors. Particle test beams at 100 EeV do not exist. Calibrated light sources (UV pulsed lasers and Xe Flashers) directed into the sky provide a proven alternative. The optical signatures that these sources generate in air fluorescence detectors have similarities to the optical signatures of the very rare 100 EeV air showers. The Global Light System (GLS) is a network of 12 calibrated Xe flashers and 6 UV lasers that will be deployed around the globe to benchmark the JEM-EUSO space based instrument. An additional GLS unit will be flown occasionally by aircraft. Prototype GLS systems in preparation will be flown by helicopter under the EUSO-Balloon instrument scheduled for flight later this year and also used to test the EUSO-TA prototype. As part of the development of the GLS, we are also planning to support the TUS orbital ultra high energy cosmic ray detector that has been prepared for launch on board the Lomonosov satellite.

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Lawrence Wiencke
Colorado School of Mines

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