Abstract Submitted
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The EUSO-SPB2 Mission[1] LAWRENCE WIENCKE, Colorado Sch of Mines, JEM-EUSO COLLABORATION — The highest energy cosmic rays and PeV astrophysical neutrinos are tantalizing multi-messengers from some of the most extreme energetic environments in the Universe. As a precursor for the Probe of Extreme Multi-Messenger Astrophysics (POEMMA), the Extreme Universe Space Observatory on a Super Pressure Balloon II (EUSO-SPB2) will use the calorimetric properties of atmosphere to target Ultra High Energy Cosmic Rays and background signatures toward future observations of astrophysical tau-neutrinos using the earth skimming technique. The EUSO-SPB2 science payload will feature an air Cherenkov telescope (CT) and a UV fluorescence telescope (FT) each with 1 m diameter entrance pupils and schmidt optics. With vantage points from the sub-orbital altitude of 33 km, EUSO-SPB2 will record EeV cosmic rays by looking down with the FT. The CT will look slightly below the Earth's limb to search for tau signatures and measure backgrounds. The first direct cherenkov measurements of air showers from near space is also planned by looking slightly above the limb with the CT. The launch is planned from Wanaka NZ in 2022. This overview of EUSO-SPB2 will include the mission plan, the science and technical goals, the instrument, and status.

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