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The Roadmap to the POEMMA Mission ANGELA V. OLINTO, University of Chicago, JOHN F. KRIZMANIC, NASA Goddard Space Flight Center — The Probe Of Extreme Multi-Messenger Astrophysics (POEMMA) is designed to observe ultrahigh-energy cosmic rays (UHECRs) and cosmic neutrinos from space with sensitivity over the full celestial sky. Developed as a NASA Astrophysics Probe-class mission, POEMMA consists of two identical telescopes orbiting the Earth in a loose formation that observe extensive air showers (EAS) via air fluorescence and Cherenkov emissions. UHECRs and UHE neutrinos above 20 EeV are observed with the stereo fluorescence technique, while tau neutrinos above 20 PeV are observed via the optical Cherenkov signals produced by up-going EAS produced by the decay of Earth-emerging tau-leptons. The POEMMA satellites are designed to quickly re-orientate to follow up transient cosmic neutrino sources and obtain unparalleled neutrino flux sensitivity. Both observation techniques and the instrument design are being validated by current and upcoming missions, such as Mini-EUSO and EUSO-SPB as part of the JEM-EUSO program, and Terzina SmallSat mission. We will discuss the POEMMA science performance and the current roadmap to the POEMMA mission.

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