

The Compton Spectrometer and Imager (COSI)

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The Compton Spectrometer and Imager (COSI) is a gamma-ray telescope, selected by NASA as a Small Explorer satellite mission to be launched in 2027. COSI employs a novel Compton telescope, consisting of a compact array of cross-strip germanium detectors. Owing to its wide field-of-view and excellent energy resolution, COSI will achieve an unprecedented sensitivity in the 0.2-5 MeV energy band. In particular, it will improve narrow-line sensitivity by about one order of magnitude over existing searches, mapping the full sky uniformly with an energy-dependent angular resolution on the degree scale. The mission requirements enable four key science goals: the origin of Galactic positrons, nucleosynthesis in the Galaxy, polarization studies of accreting black holes, and multi-messenger astrophysics. In this talk, I will provide an overview of the instrumental design and science of COSI. I will present the current status of the project and the publicly-available data challenges released every year

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