

The Gaia astrometric mission has made unprecedented advances in our understanding in the structure, kinematics, and assembly of the Milky Way, and a finer view of its satellites. I will present how a future astrometric satellite, Theia, proposed to ESA, with over 20 times the precision in proper motions of 10-year Gaia, can go one step further and achieve breakthroughs in the nature of dark matter: its cross section of (possible) self-interaction, the subhalo mass function, and the outer shape of the dark matter halo (plus additional ones from the primordial Universe to habitable exoplanets).