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# Investigations on suprathermal ions observed by ASPEX/STEPS on board Aditya-L1 during its earth-bound orbits

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Suprathermal particles (with energies in the range from 10s of keV to 1-2 MeV) are thought to be the seed populations for solar energetic particles accelerated by shocks associated with interplanetary coronal mass ejections (ICMEs). Origins, energizations, and modulations of suprathermal particles in the interplanetary (IP) medium have been widely debated in the contemporary space era, thanks to numerous particle detectors on board various spacecraft. Recently launched India's Aditya-L1 includes the SupraThermal Energetic Particle Spectrometer (STEPS), a subsystem of the Aditya Solar wind Particle EXperiment (ASPEX) suite, which can measure suprathermal and high energetic ions from multiple directions. After the launch on 02 September 2023, the Aditya-L1 spacecraft completed several highly elliptical earth-bound orbits before it started cruising towards the halo orbit around the L1 point on 19 September 2023. Two detector units, Parker Spiral (PS) and North Pointed (NP), were the first to start measurements from 10 September 2023 onwards whenever the altitude of the spacecraft crossed  $\sim 52000$  km. During 10 –18 September 2023, STEPS units sampled suprathermal ions from the Earth's magnetosphere, magnetosheath, and IP medium. Coincidentally, three ICMEs hit the Earth during the above interval. The results from this interesting observation will be discussed in this presentation.

## Contribution Type

## Theme

Connecting Solar Corona to Heliosphere

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