



Figure 2. Locations of the probes during the high-quality heavy ion events observed by ElectroStatic Analyzers on board ARTEMIS (P1 and P2) from Jan 2011 to Aug 2023 at (a) GSE equatorial plane, (b) GSE x-z plane, and (c) GSE y-z plane. Data points (circles) are down-sampled to one-minute cadence. Magenta circles are the locations corresponding to the solar wind events with positive $B_{z\ IMF}$ on average while the black circles are corresponding to the negative orientation of $B_{z\ IMF}$ on average during the event.

