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Magnetopause and Bow Shock Crossings: What can be learned from CHANDRA measurements

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Chandra is a telescope designed to detect X-ray emission from very hot regions of the universe. In order to do so Chandra is situated outside the (X-ray absorbing) atmosphere and orbits in altitudes from 10,000 up to 140,000 km above the ground, not only crossing the radiation belts but also the magnetopause as well as the terrestrial bow shock. Onboard Chandra also an Electron Proton Helium Instrument (EPHIN) is present which measures the electron (250 keV up to more than 8.7 MeV) and proton (4 MeV to more than 53 MeV) energy spectra. Here we will investigate whether or not the magnetopause and bow shock crossings can be seen in the proton and electron data and what we can learn from our findings.