



## **The Coherent Interaction of the Solar Wind and Collisionally Produced Nano-scale Dust**

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Magnetic enhancements that occur about once per month in the solar wind with a magnetic compression and a thin central current sheet have been studied in the solar wind for almost 50 years, including their correlation with the ecliptic plane crossing points of small asteroids. We have studied these phenomena at both 1 AU and 0.72 AU, correlating these events with the ecliptic plane for near-Earth observations and the Venus orbit plane for 0.72 AU observations. We have found correlations with these crossings of both the asteroid 138175 and 2201 Oljato. Temporal evolution in the occurrence rate over the decade time scale of the observations was found in both studies. Recently, a similar phenomenon has been seen in the Earth's magnetosheath close to the magnetopause. These events are shorter and contain stronger (thinner) current sheets. We believe they are related to their larger interplanetary cousins. The varying signals appear to be caused by acceleration and deceleration to the entrapped charged nanodust.