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Compared to the so-called fast solar wind that originates from polar coronal holes during the solar minimum, low-latitude wind streams generally have lower speeds (? 500 km/s). These slow solar wind streams closer to the ecliptic plane are characterized by their high spatial structuring, temporal variability, and coronal compositions. The magnetic driver responsible for the origin of this slow solar wind and its characteristics, however, is not well understood. Using coronal observations from the 2018 off-pointing campaign of the GOES Solar Ultraviolet Imager (SUVI) as well as images from SOHO/LASCO, we found signatures of solar wind streams driven by magnetic reconnection in the highly structured middle corona. In particular, elongated coronal loops in the middle corona over a coronal-hole-active-region complex are observed to reconnect and retract while in the process, some plasma is propelled away from the Sun as streams or blobs. Using STEREO observations we found that similar streams forming over the same complex escape into the heliosphere. Our observations of reconnection effects, however, are limited by the time resolution of the SUVI data in that they clearly represent the tail of a distribution of event durations, with a strong likelihood that many more events remain unresolved in the current data. In this talk, we will present these new results and discuss them in the context of models of slow solar wind sources and drivers.

Meeting name

PUNCH 2 Science Meeting

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