

The Substructure of the Solar Corona Observed in the Hi-C Telescope

A. Winebarger (MSFC), J. Cirtain (MSFC), L. Golub (SAO), E. DeLuca (SAO), S. Savage (MSFC), C. Alexander (MSFC), T. Schuler (State University of New York at Buffalo)

In the summer of 2012, the High-resolution Coronal Imager (Hi-C) flew aboard a NASA sounding rocket and collected the highest spatial resolution images ever obtained of the solar corona. One of the goals of the Hi-C flight was to characterize the substructure of the solar corona. We therefore calculate how the intensity scales from a low-resolution (AIA) pixels to high-resolution (Hi-C) pixels for both the dynamic events and “background” emission (meaning, the steady emission over the 5 minutes of data acquisition time). We find there is no evidence of substructure in the background corona; the intensity scales smoothly from low-resolution to high-resolution Hi-C pixels. In transient events, however, the intensity observed with Hi-C is, on average, 2.6 times larger than observed with AIA. This increase in intensity suggests that AIA is not resolving these events. This result suggests a finely structured dynamic corona embedded in a smoothly varying background.