

Abstract Submitted
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Variability of Solar Active Regions and other Solar Events¹ ALY

ALY, Bridgewater State University — Data used came from the Solar Dynamics Observatory's (SDO) Atmospheric Imaging Assembly (AIA). AIA takes images in ten wavelengths, and in the Extreme Ultraviolet (EUV), almost simultaneously. Images have about a 10 second temporal resolution and .6 arc-sec/pixel spatial resolution. Procedures were written in IDL to analyze the Images. Analysis was done for Active Regions (ARs), Solar Flares (SLFR), and Coronal Holes (CH). Significance in variation was determined using a method from by M. Arndt and S. Habbal in 1993. Results obtained were consistent with those established in that analysis of ARs. We also found significant variation in SLFRs. Significance was localized and for images with a 10 sec temporal resolution. In coronal Holes, no significant variation was found in the Extreme Ultraviolet, except in small and localized regions. CHs were indistinguishable from the surrounding areas in wavelengths outside 335 Å. ARs showed mainly the same results as CHs with a 10 sec temporal resolution. More localized regions of significance were found in ARs than CHs. Analysis was done over 10 minute periods using highest temporal resolution available. Analysis of ARs, with a lower temporal resolution (60 sec and 120 sec), showed very intense variation. In this analysis, the shapes of the ARs were showed more significantly varying emissions.

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