



Coronal Wave Height Definition with the Synchronous Solar Disk Observations by SECCHI A and B

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The Global EUV coronal wave observed prior to the developing dimmings during the CME event of 7 December 2007 is analyzed in the coronal line Fe XII (195 Å) simultaneously with STEREO-A and STEREO-B EUVI imagers. STEREO capabilities, in particular synchronous observation of the solar disk by spatially separated spacecraft allows us to define the spatial configuration of EUV waves. Analysis of base difference images with 10 minutes cadence and preliminary compensation of the solar differential rotation displays the strong difference in SECCHI-A and SECCHI-B observations of the solar disk region between the eruption center and the wavefront of the event. It is proven that those differences are conditioned by (1) EUV wave-front propagation upwards over the visible solar disk and (2) different views of the elevated over a visible solar disk wavefront by the separated A and B spacecraft. The direct connection between the geometrical size of the differently observed region and the wavefront elevation over the solar disk is established. Using analytical geometrical methods, the height of the 7 December 2007 wave is identified that reaches 100 thousands km. The proposed method can be used for the definition of the complete set of 3D spatial characteristics of other global wave events synchronously observed by the STEREO spacecraft.