
The role of prominences in defining the quiescent and dynamic large scale coronal structures

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Abstract

At present, total solar eclipse observations in white light offer unique insights into coronal structures. With a spatial resolution of 2.5 arcseconds, covering a distance range of a few solar radii above the solar limb, such images are untenable, at present, with any other ground-based or space-based observatory. We show how these images reveal, for the first time, the fundamental role prominences play in defining the static and dynamic properties of coronal structures. These snapshots capture the omnipresence of plasma instabilities, turbulent vortices, rising large scale loops, and propagating waves, many of which seem to be directly linked to prominences. These findings have significant implications for model studies of prominences and large scale coronal structures, with direct impact on our understanding of the source regions of the solar wind.

Keywords: prominences fine structure, large scale coronal structures

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