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Solar Irradiance, Image Restoration and Structure Identification

Abstract

Image correction techniques were used on solar disk images from the Precision Solar Photometric Telescope (PSPT) to improve contrast and establish a better magnetic structure identification. In order to better understand how the restoration process affects identification, a “quality” is defined for a given image. That measure is then used to divide images into quality categories. An image from each category was run through the identification process, restoration process and then the identification again. The percentage of identified areas is noted for both the pre restoration and post restoration images and differences between the two were recorded. When comparing these results between the quality categories it was then observed that the image that had a higher quality rating in the beginning tended to have a smaller difference in the areas that were identified.