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Flattening ChroMag: Flat Fielding Solar Images

ChroMag, a full-disk imaging spectro-polarimeter, is used to infer the magnetic field of the sun's chromosphere. Ultimately it will be used to study which magnetic configurations lead to flares and coronal mass ejections as well as look at the origin of the solar wind. But before data can be analyzed from ChroMag images, unwanted artifacts from dust and faulty pixels must first be removed through flat fielding. A diffuser is used to create a flat field solar image but since the resulting image is not entirely flat, further steps must be taken. Several methods were used in attempt to create a uniform flat field image. Two off-pointing methods, the Kuhn-Lin method and Chae method, were done by compiling multiple off-pointed images of the sun. The Kuhn-Lin flats had edge effects but the Chae method results were usable. A third method, which did not require off-pointing, fit a model to the image to remove the background solar image. All of the flat fields produced by the model were similar to flat fields created with the Chae method.