

# A stray light correction for SO/PHI-HRT, and an updated cross-calibration with SDO/HMI

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The High Resolution Telescope of the Polarimetric and Helioseismic Imager on Solar Orbiter (SO/PHI-HRT) functions in an extreme observational environment. It captures a 0.28 x 0.28 degree field of view, and at perihelion Solar Orbiter is at distance of 0.28 au. The high thermal load and the large illuminating field puts high demands on the instrument in terms of both imaging performance and false light control. Both, in-field and out-of-field straylight within the instrument particularly affect the intensity in any dark regions in the photosphere. From limb observations and a Mercury transit we have quantified the amount of false light within the SO/PHI-HRT instrument and added a correction to the point spread function we nominally use to partially reconstruct the images. We will present the resulting change in the inferred magnetic field vector and continuum intensity, which is particularly stark in the sunspot and plage regions. Finally an updated cross-calibration between SO/PHI-HRT and SDO/HMI will be shown, highlighting a much closer agreement between the two magnetographs in the strong field regions.