

Towards accurate cross-calibration of Hinode XRT with other X-ray observatories: tentative detection of the F star HD 199143 with XRT

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Abstract. Despite decades of X-ray observations of both solar and stellar coronae with various instruments, placing solar X-ray emission levels in a broader astrophysical context is on surprisingly shaky ground. This is largely due to cross-calibration problems and the difficulty in observing the same targets with both solar and stellar instruments. Here we report on a new attempt at direct cross-calibration between solar and stellar missions: observations by Hinode XRT of a young, X-ray active F star HD 199143. This star has been previously studied by ROSAT and Chandra, and is eclipsed by the Sun every January. We observed the star in Al-poly for a total of ≈ 12.6 hours on ingress and egress. After careful processing, find a small excess of $\approx 0.1 \text{ DN s}^{-1}$ along the star's apparent path. This level is broadly consistent with expectations based on the most up-to-date calibrations of Hinode, Chandra and ROSAT count rates for this star. We discuss further observational and analysis plans.