

Morphology Of A Hot Prominence Cavity Observed With Hinode/XRT And SDO/AIA

Mark A. Weber, K. K. Reeves, S. E. Gibson, T. A. Kucera

Prominence cavities appear as circularly shaped voids in coronal emission over polarity inversion lines where a prominence channel is straddling the solar limb. The presence of chromospheric material suspended at coronal altitudes is a common but not necessary feature within these cavities. These voids are observed to change shape as a prominence feature rotates around the limb. We use a morphological model projected in cross-sections to fit the cavity emission in Hinode/XRT passbands, and then apply temperature diagnostics to XRT and SDO/AIA data to investigate the thermal structure. We find significant evidence that the prominence cavity is hotter than the corona immediately outside the cavity boundary. This investigation follows upon "Thermal Properties of A Solar Coronal Cavity Observed with the X-ray Telescope on Hinode" by Reeves et al., 2012, ApJ, in press. M. Weber and K.K. Reeves are supported under contract NNM07AB07C from NASA to SAO. T. Kucera is supported by an award from the NASA SHP Program.