Morphology

- Su & van Ballegooijen 2012, ApJ 757, 168. *Observations and Magnetic Field Modeling of a Solar Polar Crown Prominence*
  - Defining the magnetic field configuration of a prominence requires simultaneous observations from many imaging telescopes.
  - Hinode/XRT provides the hot coronal images that show the overlaying field lines confining the prominence.
- Savcheva et al 2012, ApJ 750, 15. *Sigmoidal Active Region on the Sun: Comparison of a Magnetohydrodynamical Simulation and a Nonlinear Force-free Field Model*
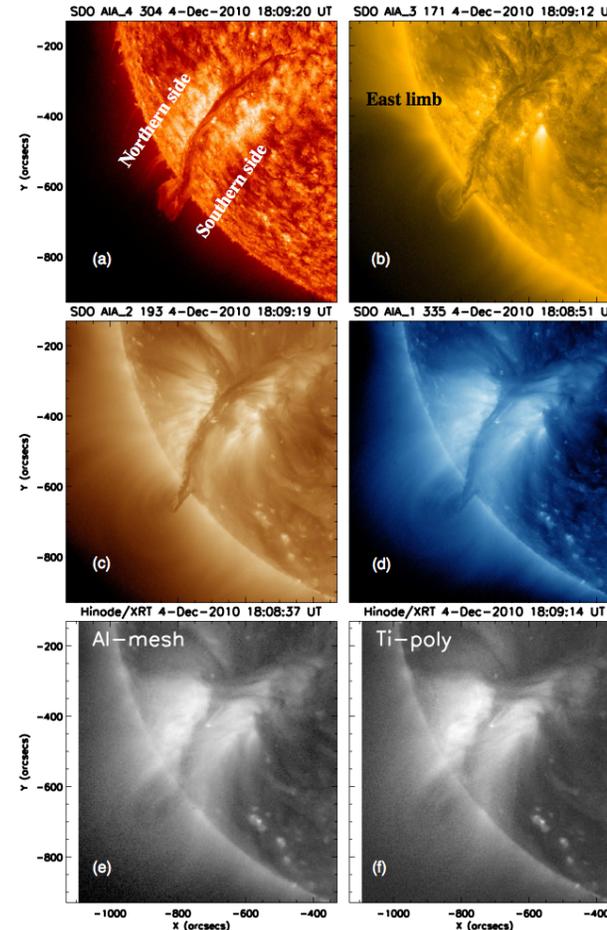 - Is another example of XRT images used to constrain magnetic field modeling.

Figure 8. Multi-channel observations of the cavity structure around 18:09 UT on 2010 December 4. The images in the top two rows are provided by *SDO*/AIA, while *Hinode*/XRT images are shown in the bottom row.

(A color version of this figure is available in the online journal.)

Temperature

- Schmelz & Pathak 2012 ApJ 756, 126.
  The Cold Shoulder: Emission Measure Distributions of Active Region Cores
  - EIS and XRT observations are combined to constrain the thermal structure of the AR core. XRT provides the critical sensitivity to high temperature plasma in this work.
- Miceli et al 2012, A&A 544, 139. *X-ray emitting hot plasma in solar active regions observed by the SphinX spectrometer*
  - In contrast to the above, here XRT images are used to constrain the cooler (thermal) plasma contributions for integrated sun Hard X-ray observations with SphinX.
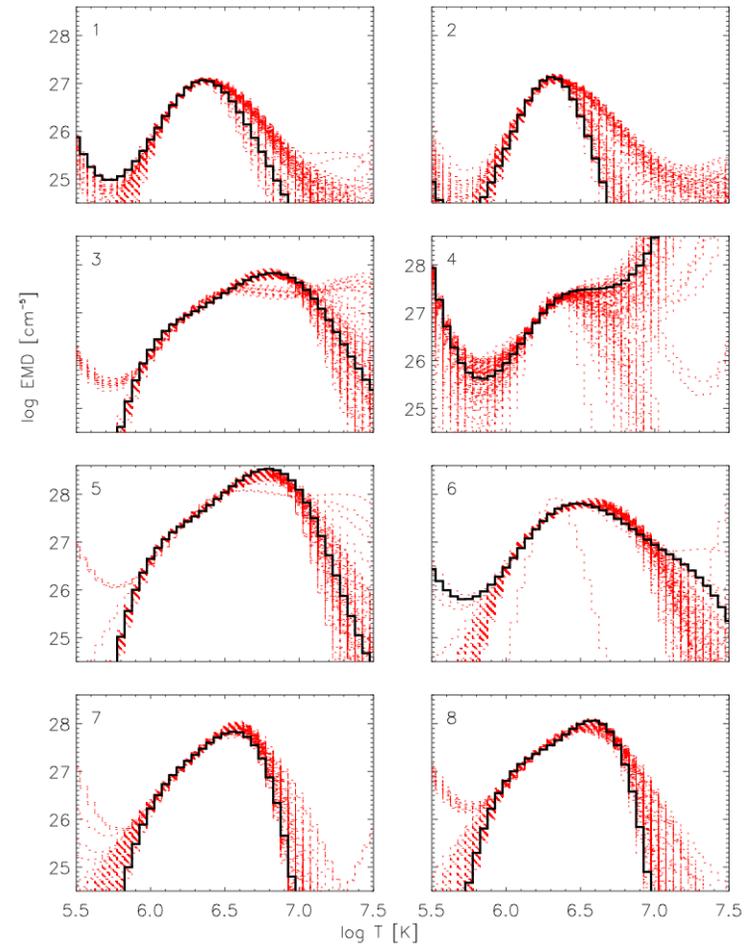

Figure 4. EMDs for each active region core area created using xrt_dem_iterative2. The Monte Carlos are shown in red and the minimum $\tilde{\chi}^2$ result in black. The tightness of the Monte Carlos in the temperature range of interest ($\log T = 6.0$ to the EMD peak) shows that the shape of the distribution is well constrained by the data. The one exception is region (4), where the XRT data were compromised by a contamination spot, and no high-temperature constraint was available.

Dynamics

- Murphy et al 2012, ApJ 751, 56. *Asymmetric Magnetic Reconnection in Solar Flare and Coronal Mass Ejection Current Sheets*
  - High cadence CME observations with XRT provide important constraints on numerical simulations of asymmetric reconnection.
- Patsourakos & Vourlidas 2012, *The Sun 360* Solar Physics Invited review, pg 93. *On the Nature and Genesis of EUV Waves: A Synthesis of Observations from SOHO, STEREO, SDO, and Hinode (Invited Review)*
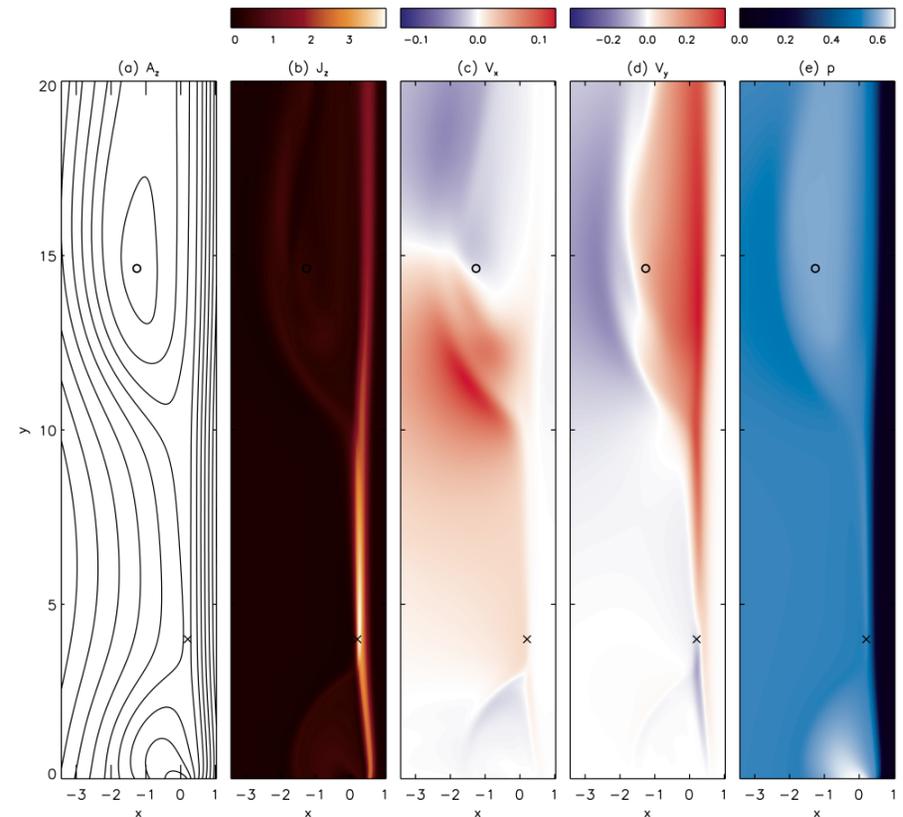 - High cadence XRT images capture global EUV waves.

Figure 1. Simulation results for case C with $R_0 = B_{L0}/B_{R0} = 0.25$ at $t = 100$. Shown are (a) the magnetic flux, A_z, (b) the out-of-plane current density, J_z, (c) the inflow component of velocity, V_x, (d) the outflow component of velocity, V_y, and (e) the plasma pressure, p. The "○" denotes the position of the O-point, and the "×" marks the spot of the X-line. Only a portion of the computational domain is shown.