

M11b **An X-ray/EUV jet associated with photospheric cancelation**

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We report Hinode observations of a recurring jet situated on the west side of NOAA AR 10938 on 2007 January 15/16. We found a correlation between a recurring (quasi-periodic) magnetic flux cancellation observed with SOT and the recurring jet emission in images taken with XRT. For each jet instance, we estimate a drop in B flux of approximately  $2 \times 10^{19}$  Mx. These observations are suggestive of coronal magnetic reconnection. X-ray loop expansions were found near the footpoint of the jet observed with XRT, disconnecting just before an X-ray jet is released. Complementary RHESSI data indicated 12-16 keV emission at the footpoint of the cusp-shaped feature observed in XRT. In addition to the nonthermal component in HXR spectrum observed with RHESSI, an associated type III burst supports the existence of nonthermal electron beam. From EIS raster data we found a strong blue-shifted component, and an indication of a weak red-shifted component at the base of the jet. The up-flow velocities exceeded 150 km/s. The jet component was seen over a range of temperatures between 5.4 and 6.4 in Log Te. Using Fe XII 186/195 line ratios, we measured densities above Log Ne = 11 for the high-velocity up-flow component. We found the density of the high-velocity up-flow increases with velocity. We estimate the filling factor in the jet upflow to be  $\lesssim 0.03$ . The high-velocity up-flows, together with the density dependence on velocity support an evaporation scenario for the acceleration of this jet. Our observations are strongly suggestive of multiple small-scale reconnection events being responsible for the production of both EUV and X-ray jets.