

**M11b Study of chromospheric macrospicules in coronal holes**

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Ulysses observations showed the existence of magnetic structures as plasmoids or current sheets in and outside the so-called pressure balance structures in the solar wind, which are believed to be remnants of coronal plumes by previous studies [Yamauchi et al., GRL, 2002]. This suggests that the plasmoids or current sheets might have been created by certain network activity, such as magnetic reconnection at the base of polar plumes.

In this paper, we propose a possible scenario to explain the origin of the plasmoids or currents sheets through magnetic reconnections between a unipolar flux concentration in the network and a magnetic bipole advected up against the concentration. The scenario predicts that a local magnetic loop created by the reconnections expands into the corona to form a plasmoid or current sheet. Macrospicules observed in  $H_{\alpha}$  in polar coronal holes may be the manifestations of the expected expanding loop. It is still unclear what kind of magnetic structure macrospicules have, such as loop or spiky structure. Studying the structure of macrospicules should be helpful for understanding the magnetic activity in the coronal holes and the plume formation as well. We investigate the structure and temporal evolution of macrospicules on the limb in the coronal holes at the solar minimum using  $H_{\alpha}$  images from Big Bear Solar Observatory. We will report the analysis results and discuss the magnetic activity of macrospicules in the polar coronal holes.