Reply to Reviewer 1

We thank the Reviewer for the comment, which we address below. The Reviewer comment is reproduced, and given in italic. Line numbers refer to the original submission.

These include: (i) hot flow anomalies, which are also characterised by a depressed magnetic field but are filled with hot plasma flowing in a direction significantly deflected from the solar wind velocity vector (e.g. Lucek et al., J. Geophys. Res., doi:10.1029/2003JA010016, 2004); (ii) hot diamagnetic cavities, where the depressed magnetic field within the cavity is flanked by strong enhancements (e.g. Thomsen et al., J. Geophys. Res., doi:10.1029/JA091iA03p02961, 1986); (iii) foreshock cavities, where temperature and pressure inside are only slightly greater than in the ambient solar wind (Sibeck et al., J. Geophys. Res., doi:10.1029/2001JA007539, 2002); and (iv) solar wind density holes, characterised by a strong plasma density depletion within them, flanked by density overshoots and compressed magnetic field (Parks et al., Phys. of Plasmas Lett., 13, 050701, 2006). What is missing from the present paper is putting magnetic holes into context and comparing them with these other transient upstream structures. This is particularly useful for their relationship with density holes, since as shown by Parks et al. (2006) density holes are accompanied by magnetic holes of nearly the same shape.

The main difference between solar wind magnetic holes and the structures mentioned by the reviewer (to which we may add SLAMS [e.g. *Schwartz and Burgess,* 1991]) is that the latter are strongly associated with the foreshock, and are believed to be generated in or close to this region. In contrast solar wind magnetic holes are known to exist already in the pristine interplanetary solar wind [e.g. *Sperveslage et al.,* 2000]. This is why we have excluded any time intervals where foreshock signatures can be detected, in order to unambiguously identify solar wind magnetic holes (as we originally pointed out). As the reviewer correctly points out, this is particularly important in order to not misidentify density holes (associated with foreshock reflected particles [*Parks et al.,* 2007]) as solar wind magnetic holes. We have extended the discussion starting at line 99 somewhat to clarify the relation of solar wind magnetic holes to the foreshock structures.