

The slow solar wind: from formation on the Sun to the Earth

Louise K. Harra

UCL-MSSL

Andrew Fazakerley

UCL-MSSL

Lidia van Driel-Gesztelyi

UCL-MSSL

Abstract. Hinode has discovered a potential source of slow solar wind at the edges of active regions with XRT and EIS (e.g Sakao et al., 2007, Harra et al., 2008, Doschek et al., 2008). These outflows are long-lasting and exist at the edges of most active regions. In this work we discuss firstly the onset of the outflows. This is related to newly emerged magnetic flux. Next we discuss whether the flows that we see on the surface of the Sun actually are transported to the Earth in the slow solar wind, or if they are merely related to flows in large-scale loops. To do this we looked at a number of different examples over a 3 month time period and tracked the response in the solar wind as measured by the ACE spacecraft at L1. We found that there is a signature of these flows in the in-situ data and hence we can confirm that the outflows observed so clearly by the EIS instrument do form part of the slow solar wind.