

### [7SS-11] Specific Rates of Photospheric Magnetic Flux Cancellation Measured with Hinode and SOHO

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Magnetic flux cancellation of canceling magnetic features in the solar photosphere is believed to be caused by magnetic reconnection occurring in the low atmosphere. The specific cancellation rate, defined as the rate of flux cancellation divided by the interface length, gives an accurate estimate of the electric field in the reconnecting current sheet. We have determined the specific rate using the magnetograms taken by the Solar Optical Telescope (SOT)/Hinode. The specific rates determined with SOT turned out to be systematically higher than those based on the data taken by the Michelson Doppler Imager (MDI) aboard the SOHO. The median value of the specific rate was found to be  $8 \times 10^6$  Gcm/s - a value four times that obtained from the MDI data. This higher value is mainly due to a higher angular resolution and better sensitivity of the SOT, resulting in magnetic fluxes up to five times larger than those obtained from the MDI. The higher rates of flux cancellation correspond to either faster inflows or stronger magnetic fields of the reconnection inflow region, which may have important consequences for the physics of photospheric magnetic reconnection.

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### [7SS-12] KASI Total Solar Eclipse Expeditions in 2006 and 2009

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Korea Astronomy and Space Science Institute (KASI) carried out total solar eclipse expeditions at El Sallum, Egypt in 2006 and at Tianhuangping, China in 2009. Although many space-based coronagraphs had been launched and gave us many pieces of valuable information about the solar corona, the total eclipse has been regarded to be a unique chance to observe the lower corona in detail without a severe scattered light from the solar photosphere. In both total eclipse expeditions, we made several kinds of observations: (1) white-light imaging, (2) white-light polarization imaging, (3) 5303 green line imaging, (4) H-alpha polarization imaging, and so on. Especially, we mainly focus on the white-light polarization observations which can give us the information on the weak magnetic field distribution of inner corona and the coronal green-line (5303 Å) observations for the fine structure of outer corona. For this purpose, we designed a new observing system for white-light polarization and prepared a new green-line filter which has a band pass of 3 Å. In this presentation, we will describe the whole procedure of the eclipse expedition and present the observational results