



Radial evolution of current sheets in the solar wind

C.T. Russell (1), J.G. Luhmann (2), F.M. Neubauer (3) and T.-L. Zhang (4)

(1) ESS and IGPP, UCLA, Los Angeles CA. 90095 (Contact ctrussel@igpp.ucla.edu); (2) SSL, UCB, Berkeley CA.; (3) Univ. Koeln, Germany; (4) Space Research Institute, Graz, Austria

Current sheets evolve with distance from the Sun. At 0.29 AU, Helios perihelion, current sheets are thin and the magnetic field shows very little change in magnitude as the magnetic field rotates from one direction to another in Alfvénic fluctuations. At 0.72 AU, the distance of Venus Express, current sheets are much wider and the field strength dips as the field direction rotates. At 1.0 AU, the distance of STEREO A and B, the current layers are even broader and the field minima deeper and wider. The current sheets are slowly dissipating with increasing heliocentric distance. This evolutionary behavior indicates that the source of the Alfvénic waves is inside 0.29 AU, and possibly due to dust interactions.