

Direct Observation of Shock Drift Accelerated Ions at an Interplanetary Shock

Mitsuo Oka[1], # Toshio Terasawa[2], Yoshifumi Saito[3], Toshifumi Mukai[3]

[1] Earth and Planetary Sci., Tokyo Univ, [2] Dept. Earth Planetary Sci., Univ. of Tokyo, [3] ISAS

<http://stp-www.eps.s.u-tokyo.ac.jp/~oka>

On September 25, 2001, GEOTAIL observed a high Mach number ($Ma \sim 12$) strong interplanetary shock at around 20:25UT on the dawnside of the bow shock. We report that drift accelerated ions are observed in the very front of the interplanetary shock for the first time. The interpretation is supported by the fact that the shock angle falls in the quasi-perpendicular regime and the direction of the induced electric field coincides with that of the reflected ions. We present the result of the comparative study of the observed accelerated ions with the classical model of specular reflection.