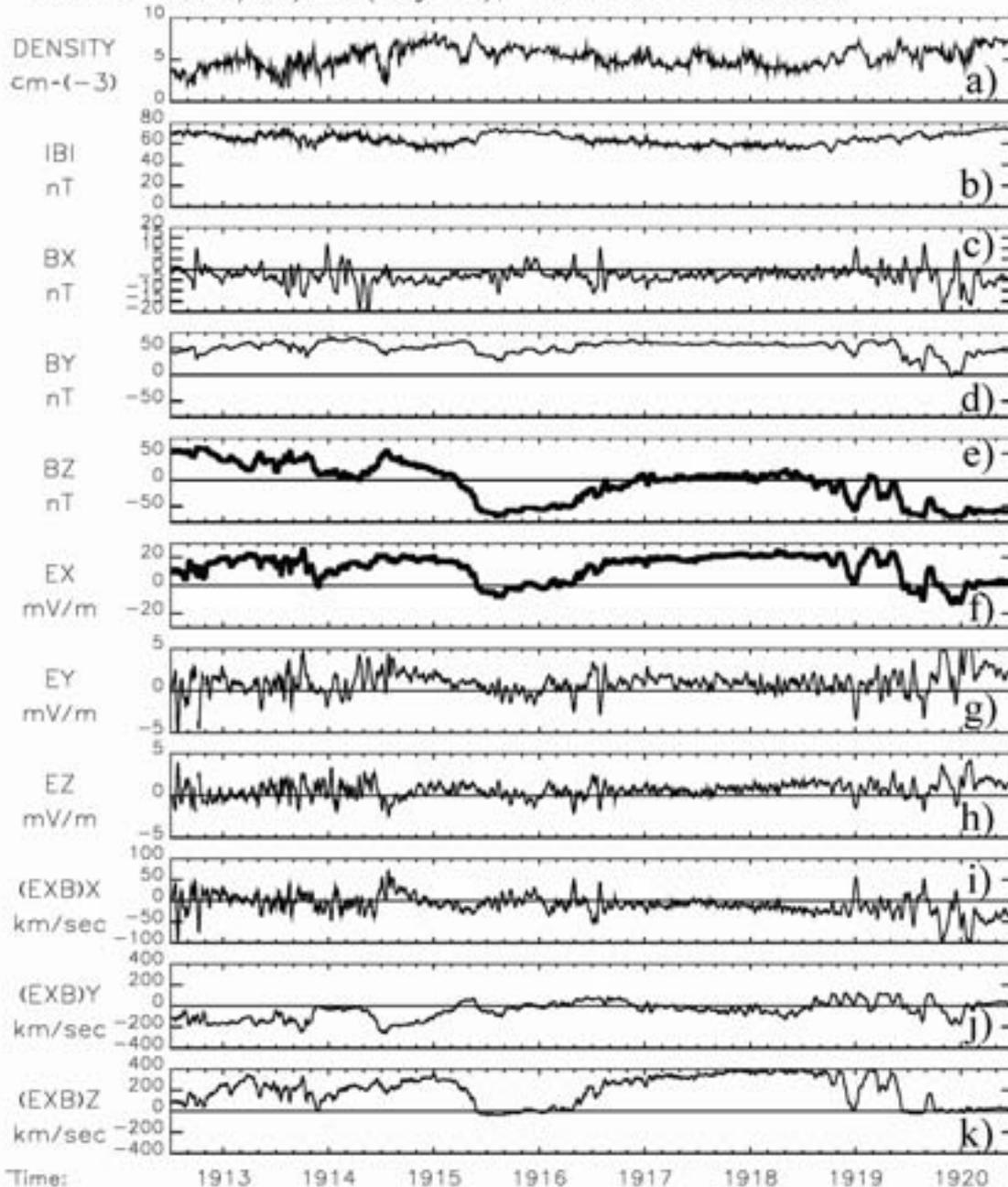


POLAR 2001/03/20 (Day 79), 19:12:30 - 19:20:30



9.2 R_E , 1225 MLT, 22.7° MLAT

S/C crosses current sheet in ~ 6 minutes.

Density (panel a)), B_z (panel e)) show passage from sphere to sheath through magnetopause.

$\langle b_x \rangle < 0$ (panel c)) NECESSARY CONDITION FOR RECONNECTION
Magnitude uncertain due to oscillations

$\langle e_y \rangle, \langle e_z \rangle > 0$ (panels g), h))
NECESSARY AND SUFFICIENT FOR RECONNECTION. Magnitude uncertain due to oscillations

$(\mathbf{E} \times \mathbf{B} / B^2)_x$ inward from both sides (panel i))

$\langle b_x \rangle < 0$ requires outflow in +Z direction. It is (panel k)). Outflow speed of 400 km/sec agrees with
 $v_{ALFVEN} = 500$ km/sec (sheath)
 $= 630$ km/sec (sphere)

$B_G \sim 1, B_{total} \sim \text{constant}$
Unstructured out-of-plane B.

E_x CORRELATES WITH B_z (panels d) and f)