

# Equator-S/Geotail Detection of Bi-Directional Plasma Jets and Extended Magnetic Reconnection Line at Earth's Magnetopause

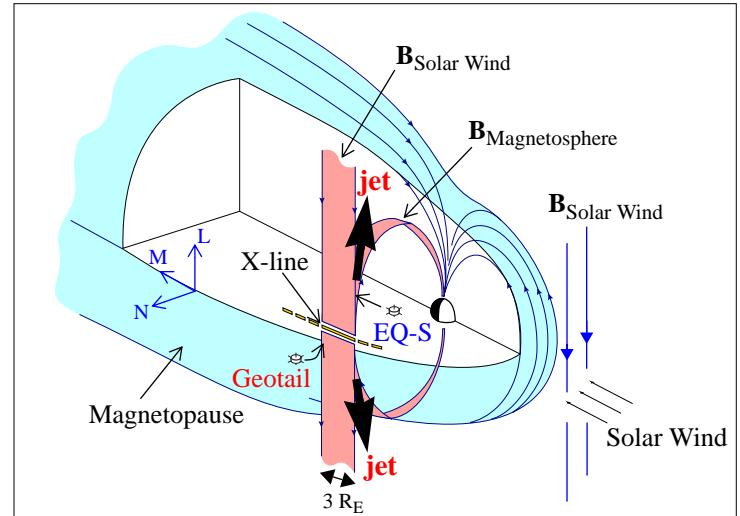
Spacecraft: Geotail and Equator-S

*Location:* Dawn flank magnetopause

*Separation:*  $4 R_E$  north-south  
 $3 R_E$  east-west

## Observations:

- First detection of bi-directional plasma jets emanating from an extended reconnection line



## Implications:

- Conclusive evidence for magnetic reconnection
- Evidence for global-scale reconnection
- Substantial solar wind entry into the magnetosphere

Mass transfer =  $10^{28}$  particles/s (10% solar wind flux)

Energy transfer =  $2.5 \times 10^{12}$  Watts

