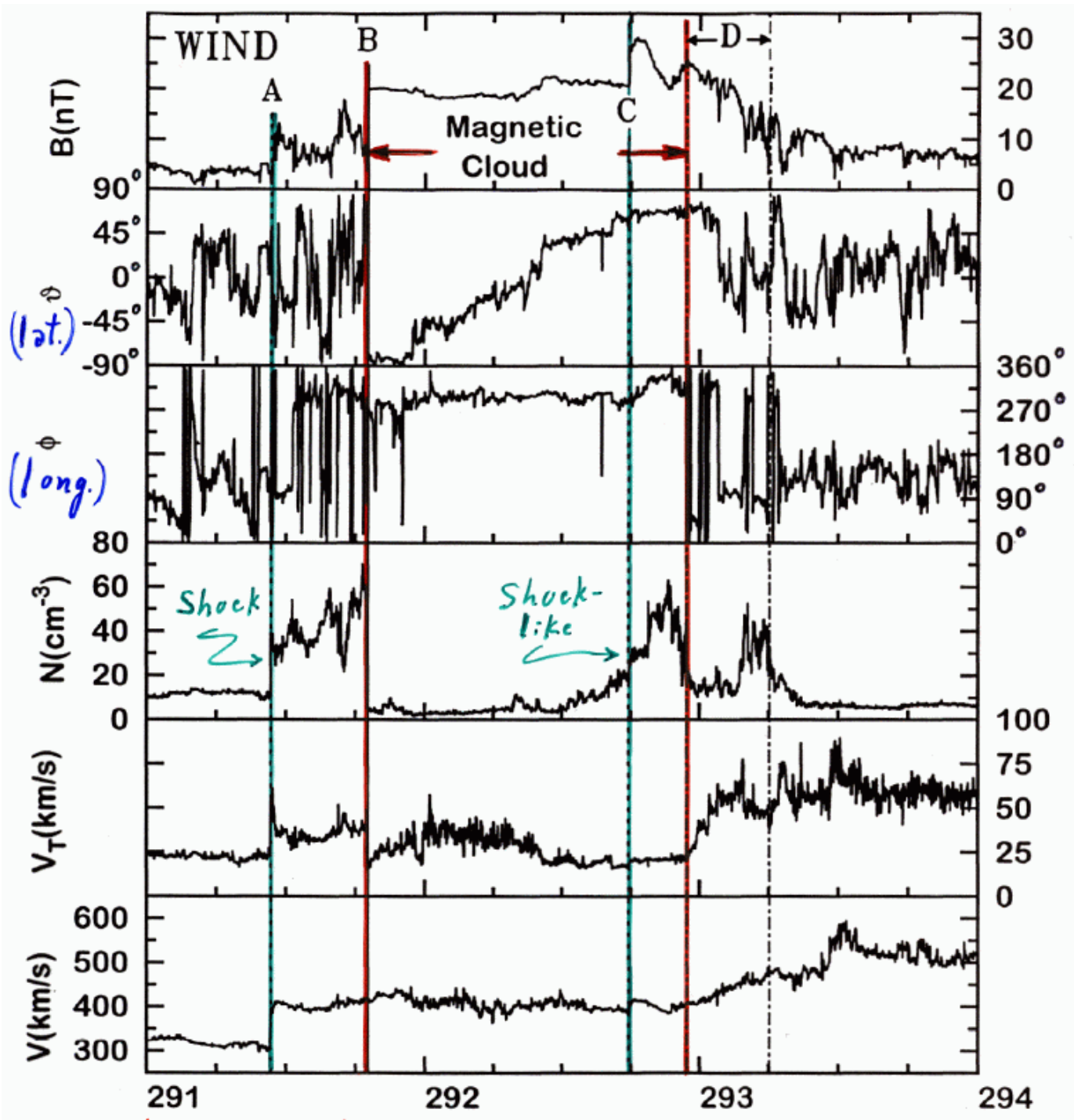


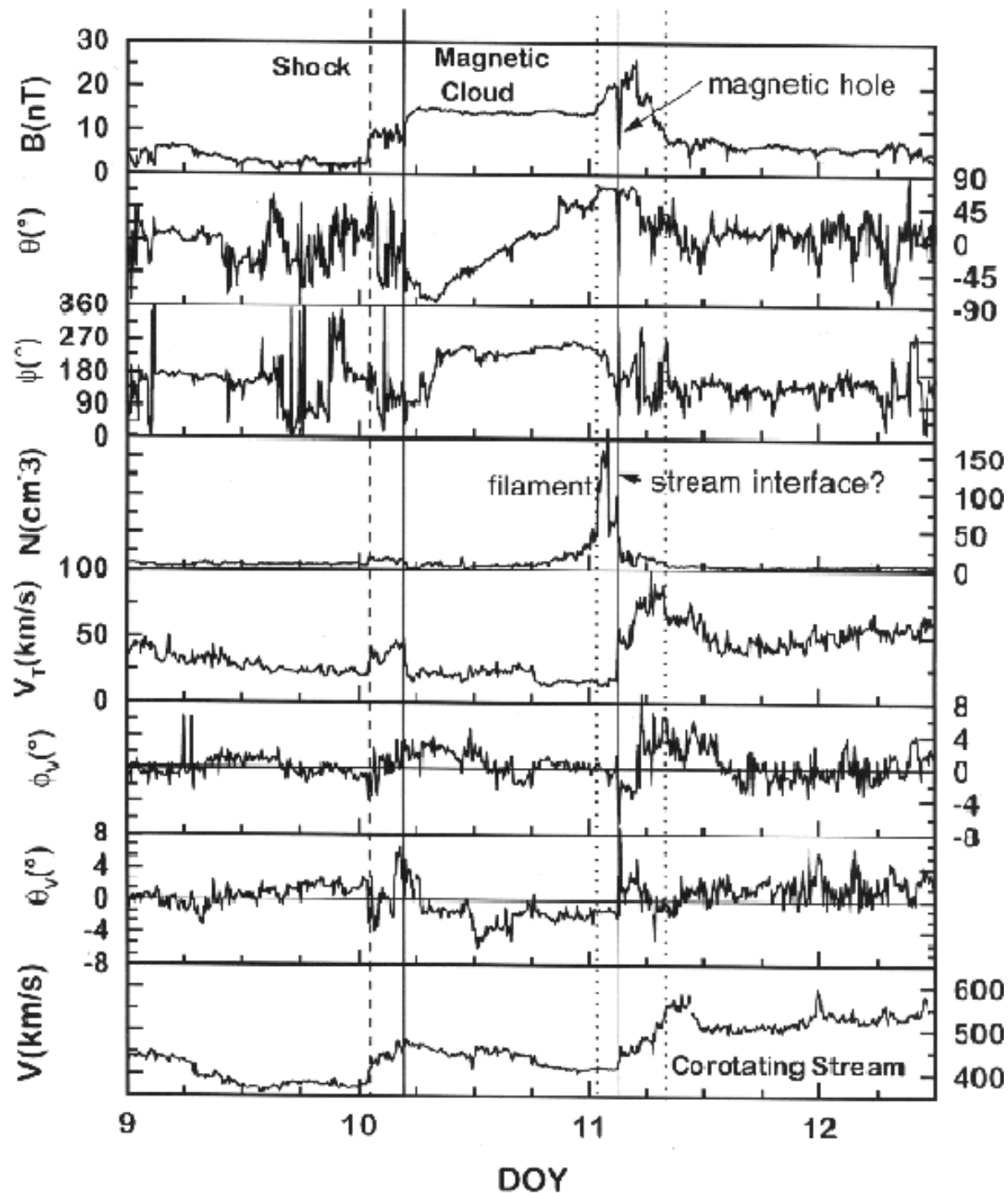
Please acknowledge data provider(s), N. Ness at Bartol Research Institute and D. J. McComas at SWRI and CDASWeb when using these data.

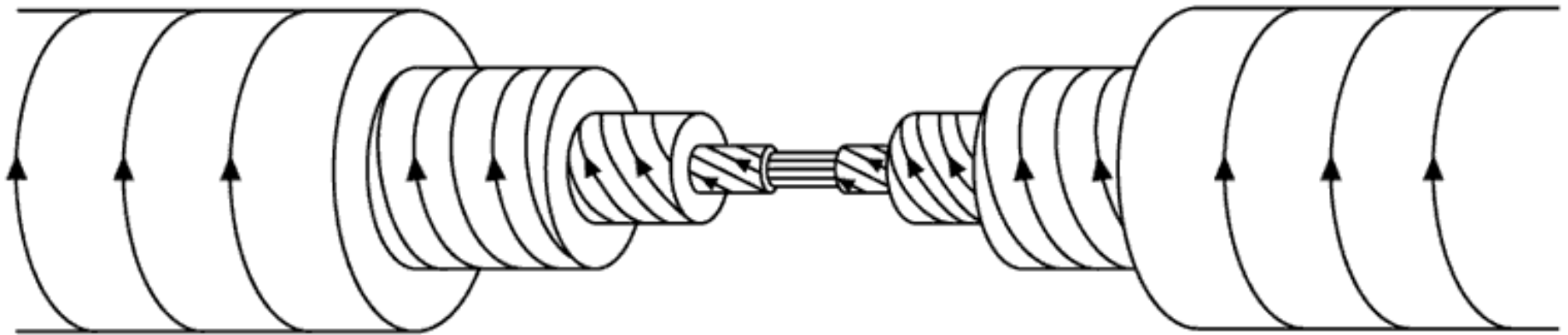
Generated by CDASWeb on Tue Sep 19 22:34:07 2006



(October 18)
1995

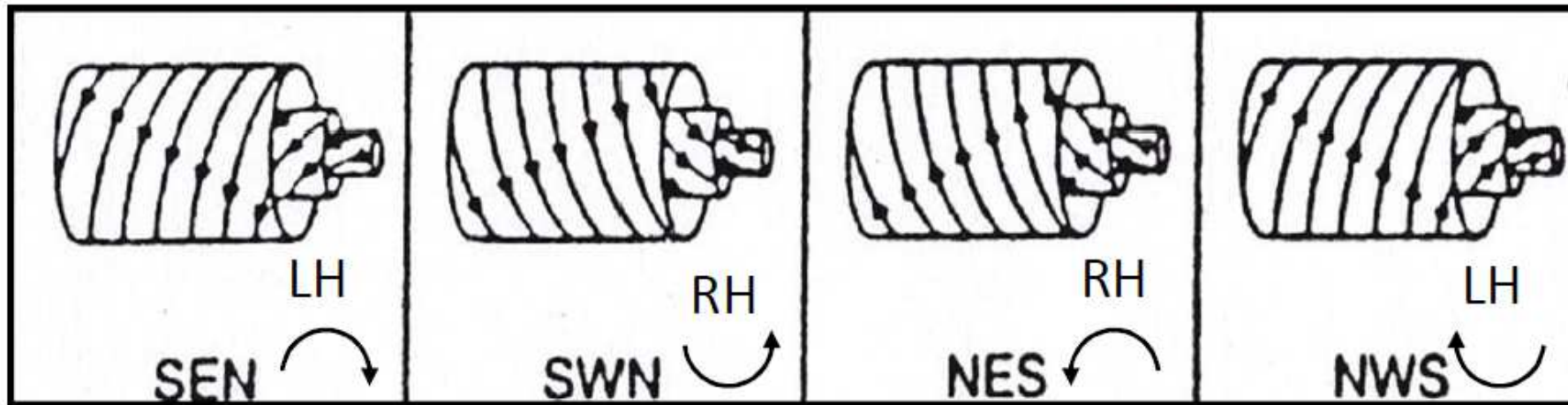
WIND - January 1997





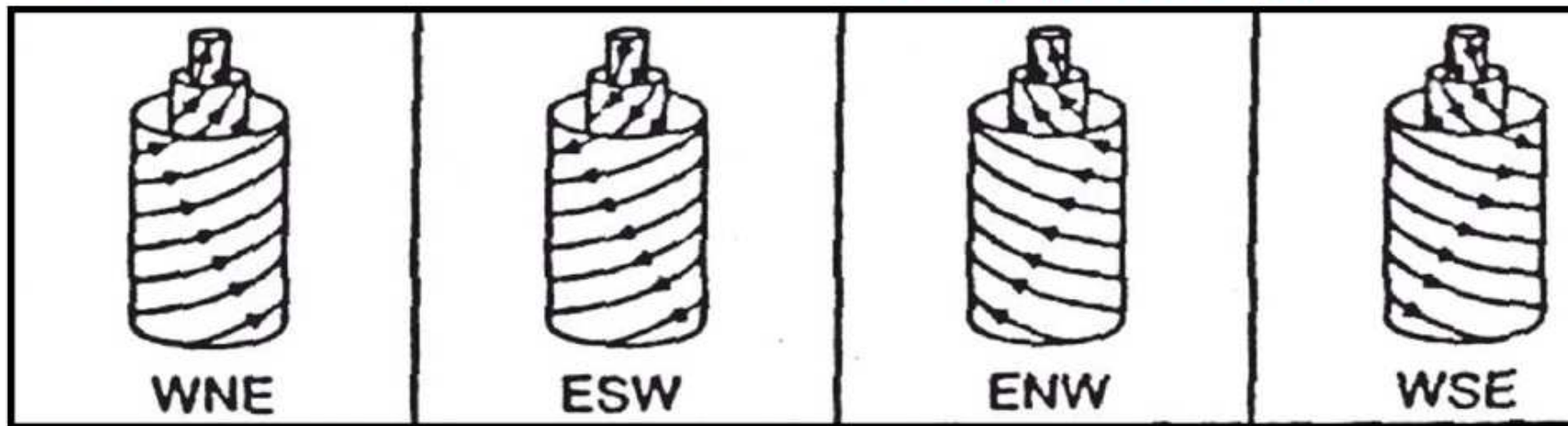
Interior Structure of Flux Rope

Low inclination flux ropes (bipolar): **south-north (SN) or north-south(SN)**



handedness: how B is observed to rotate as viewed by an observer looking towards the Sun
LH = clockwise; RH = counter clockwise

High inclination flux ropes (unipolar): **north (N) or south (S)**



Bothmer and Schwenn (1994);

Mulligan et al. (1998)

A cylindrically symmetric force-free field model for magnetic cloud

$$\nabla^2 \mathbf{B} = -\alpha^2 \mathbf{B}. \quad (3)$$

Lundquist [1950] has given the solution of equation (3) with the helical structure in the cylindrical geometry as follows:

$$\begin{cases} B_R = 0 & \text{radial component} \\ B_T = B_0 H J_1(\alpha R) & \text{tangential component} \\ B_A = B_0 J_0(\alpha R) & \text{axial component} \end{cases} \quad (4)$$

where J_n is the n th-order Bessel function, $H = \pm 1$ denotes the right- and left-handedness of the field twist, B_0 is the field intensity at the axis of the rope, and R is the radial distance from the axis.

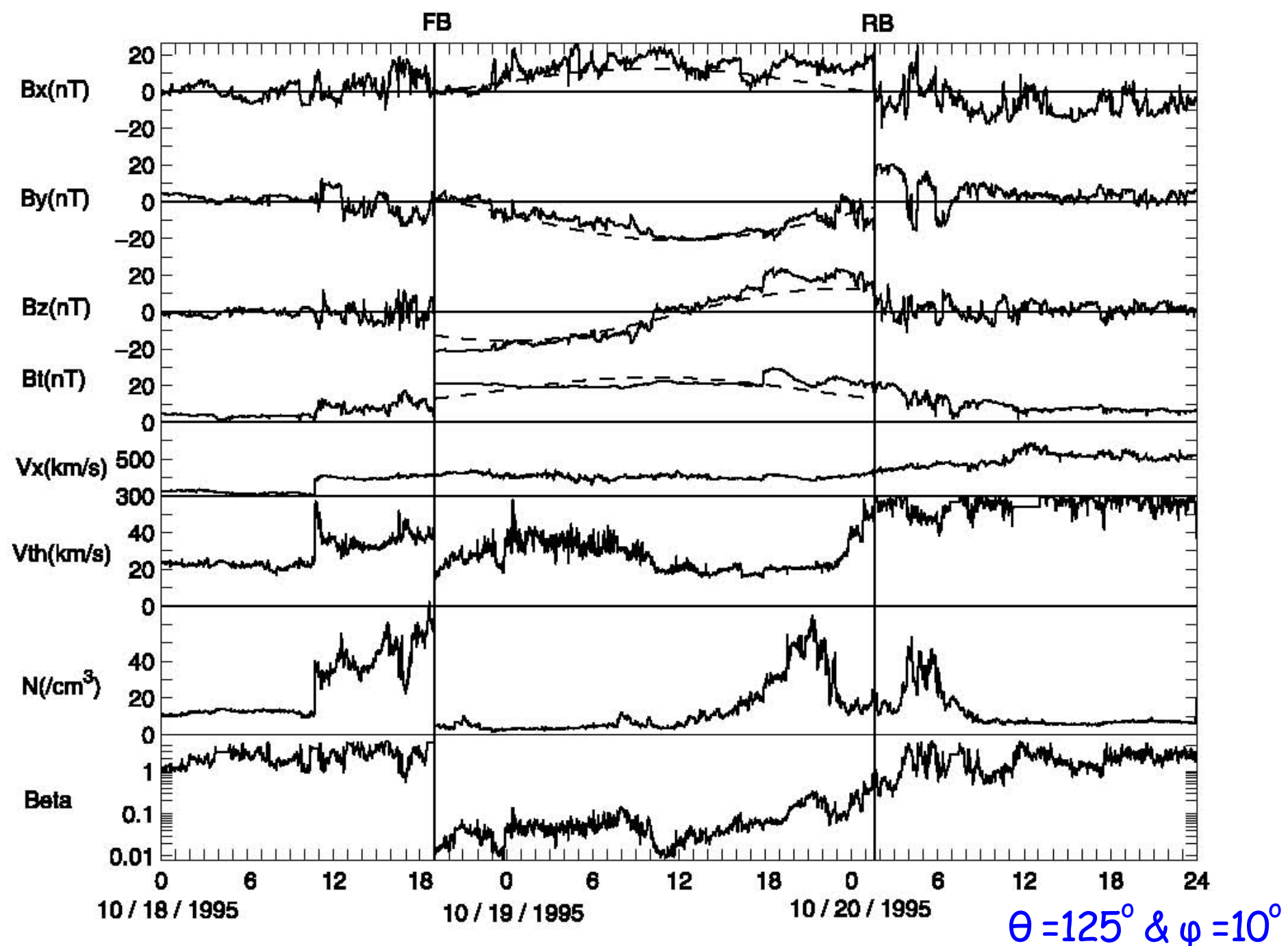
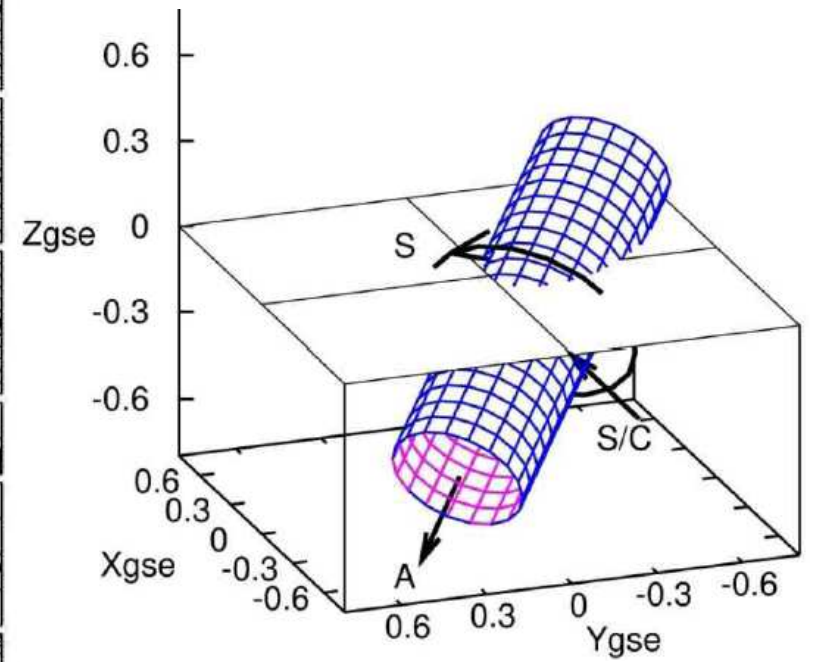
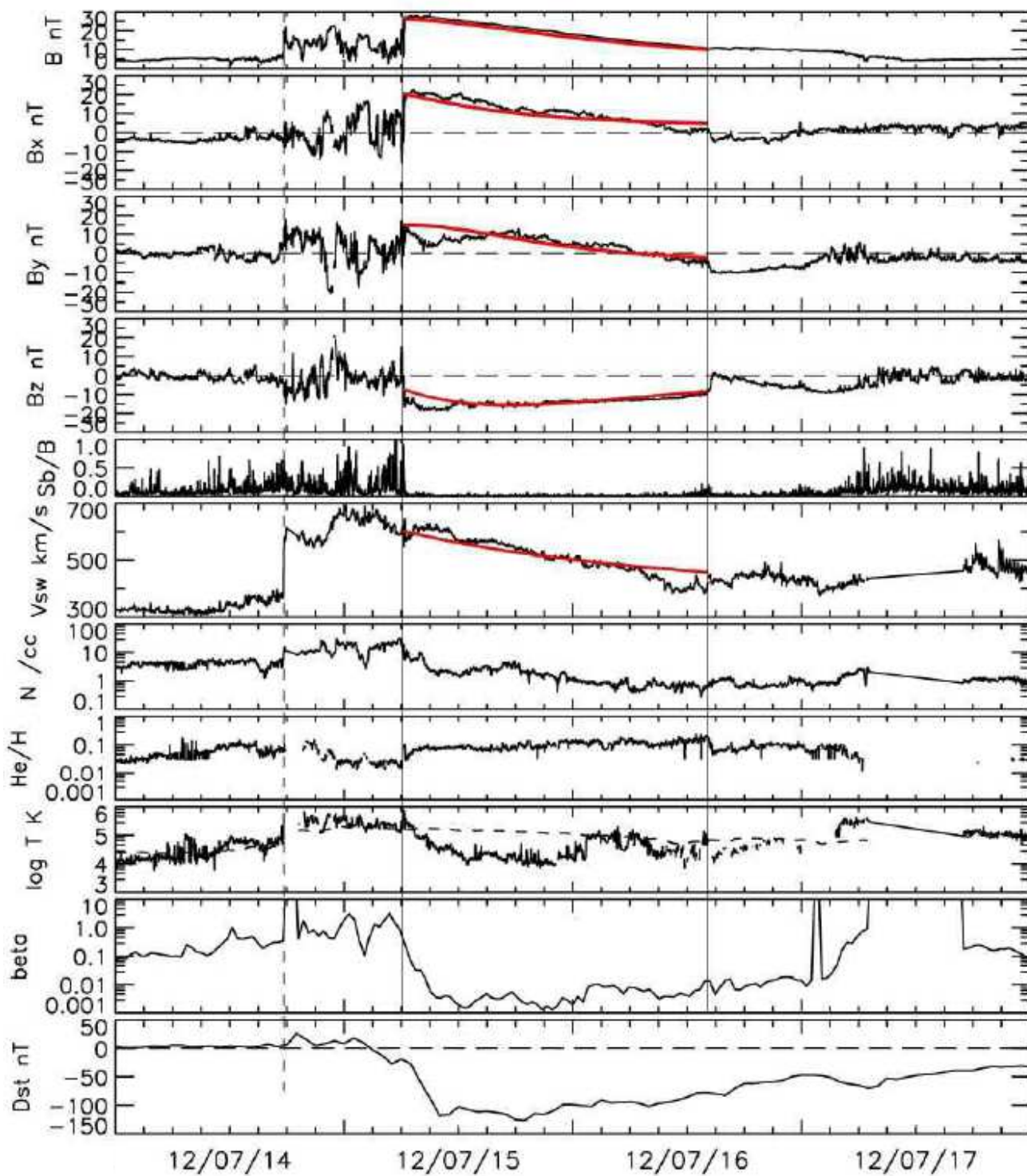
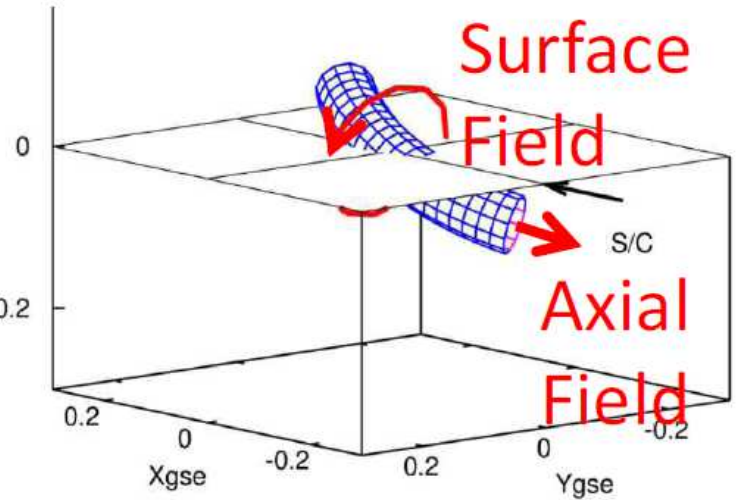
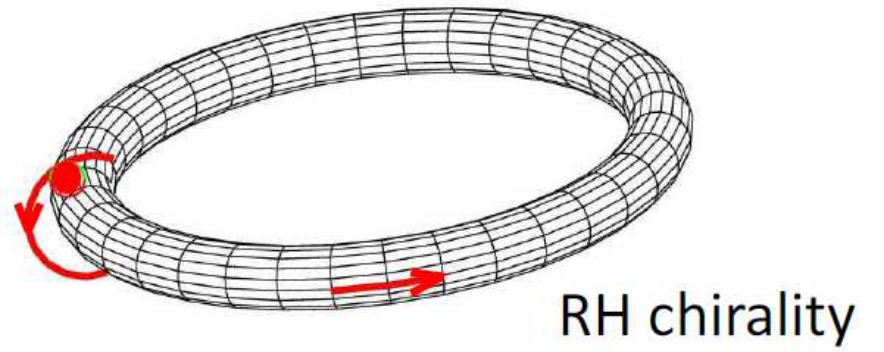
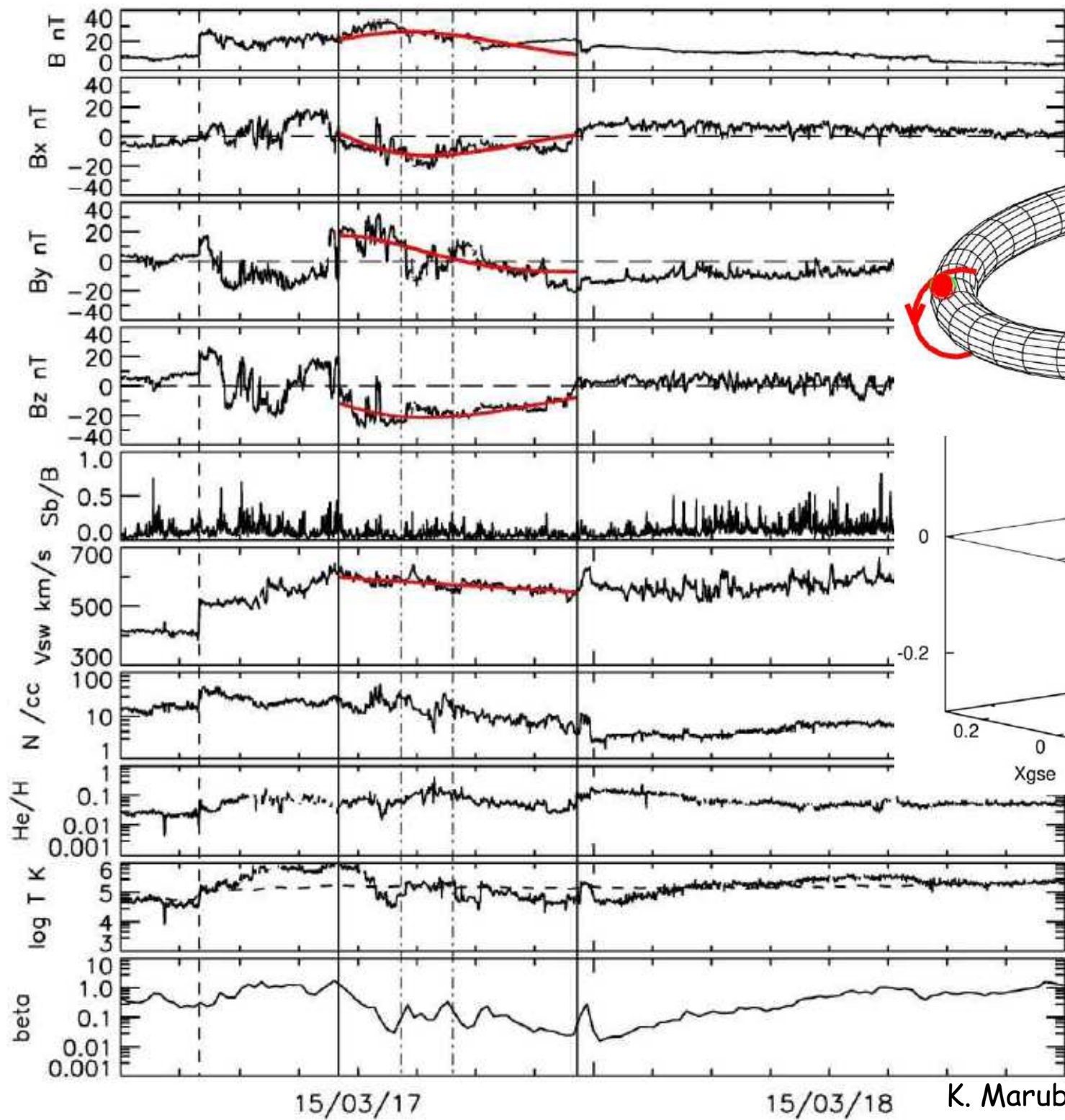
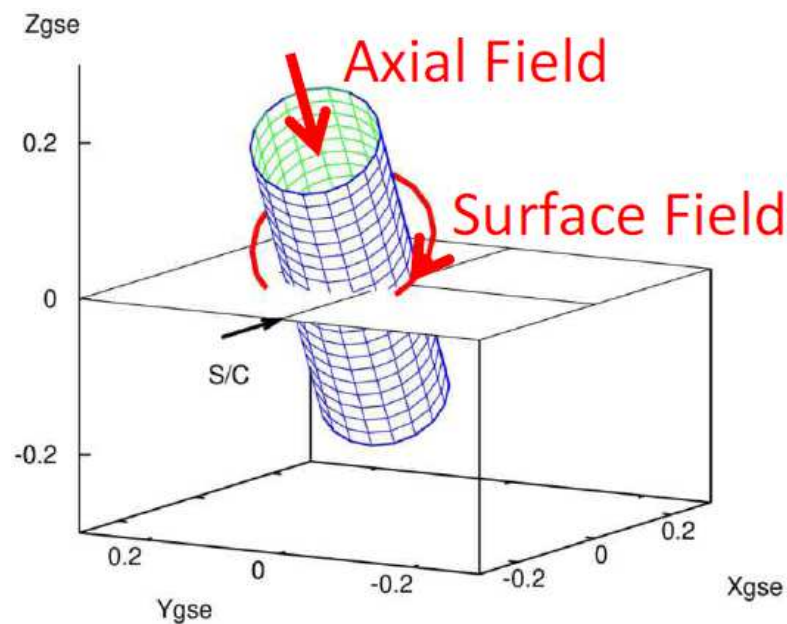
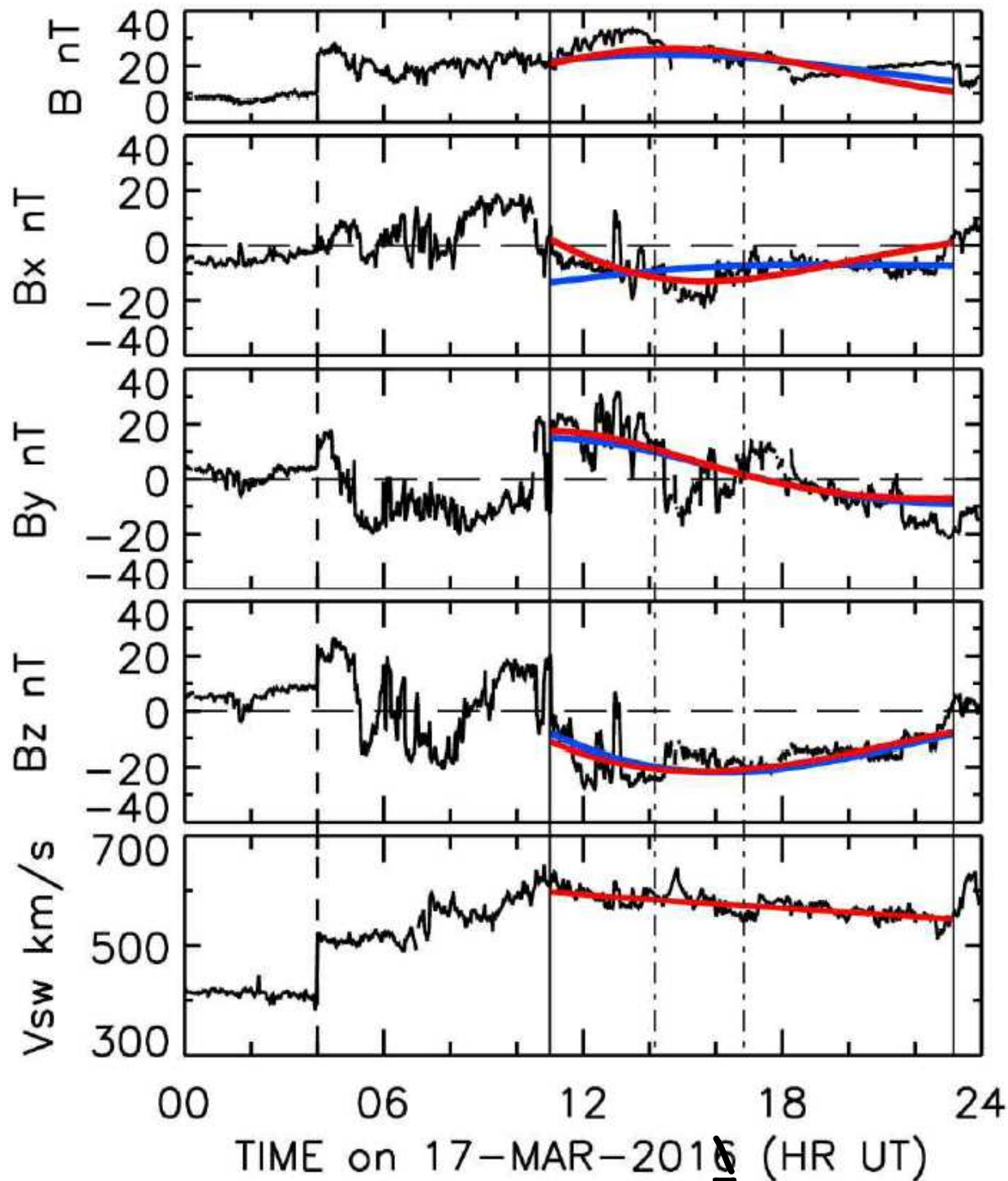


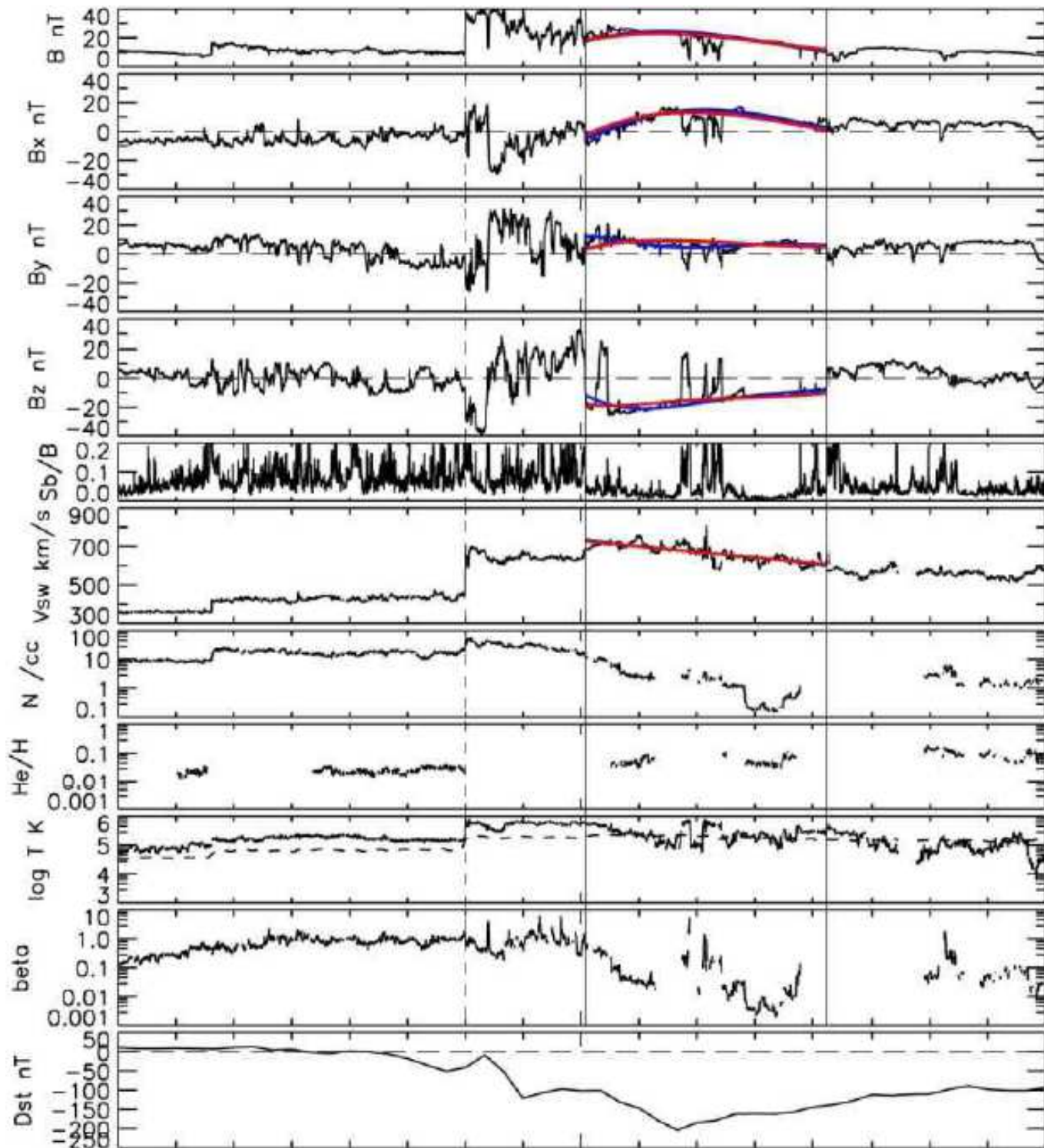
Figure 5. The interplanetary magnetic field and plasma data measured by the Wind spacecraft in GSE coordinate system during the 18–20 October 1995 MC passage and the flux-rope fitting curves (dashed curves). FB and RB are the front boundary and rear boundary, respectively.



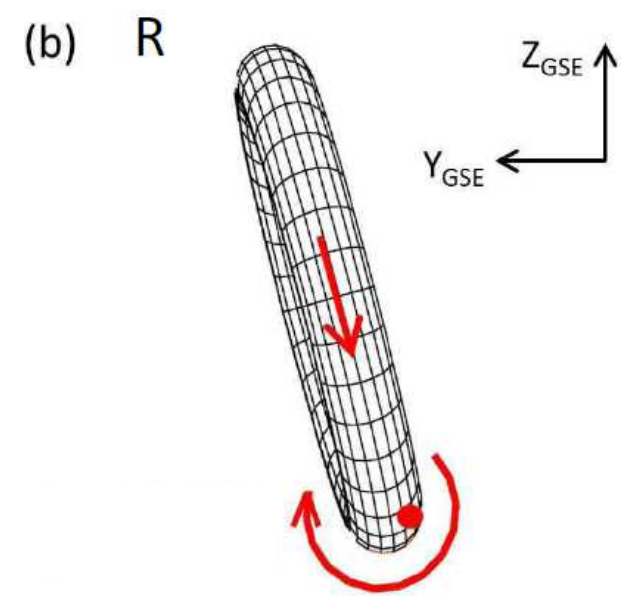
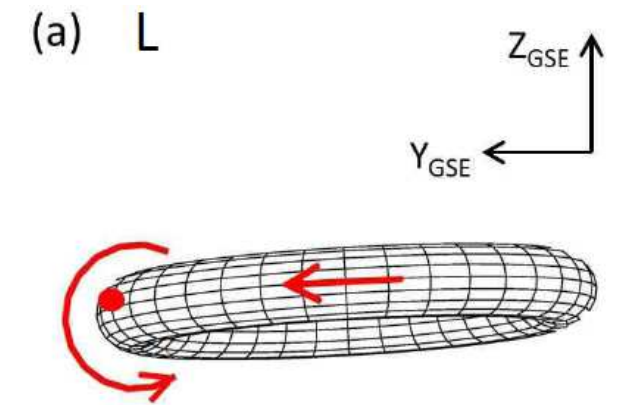




Cylinder-fit
Torus-fit



Left-handed
Right-handed



15/06/22

15/06/23