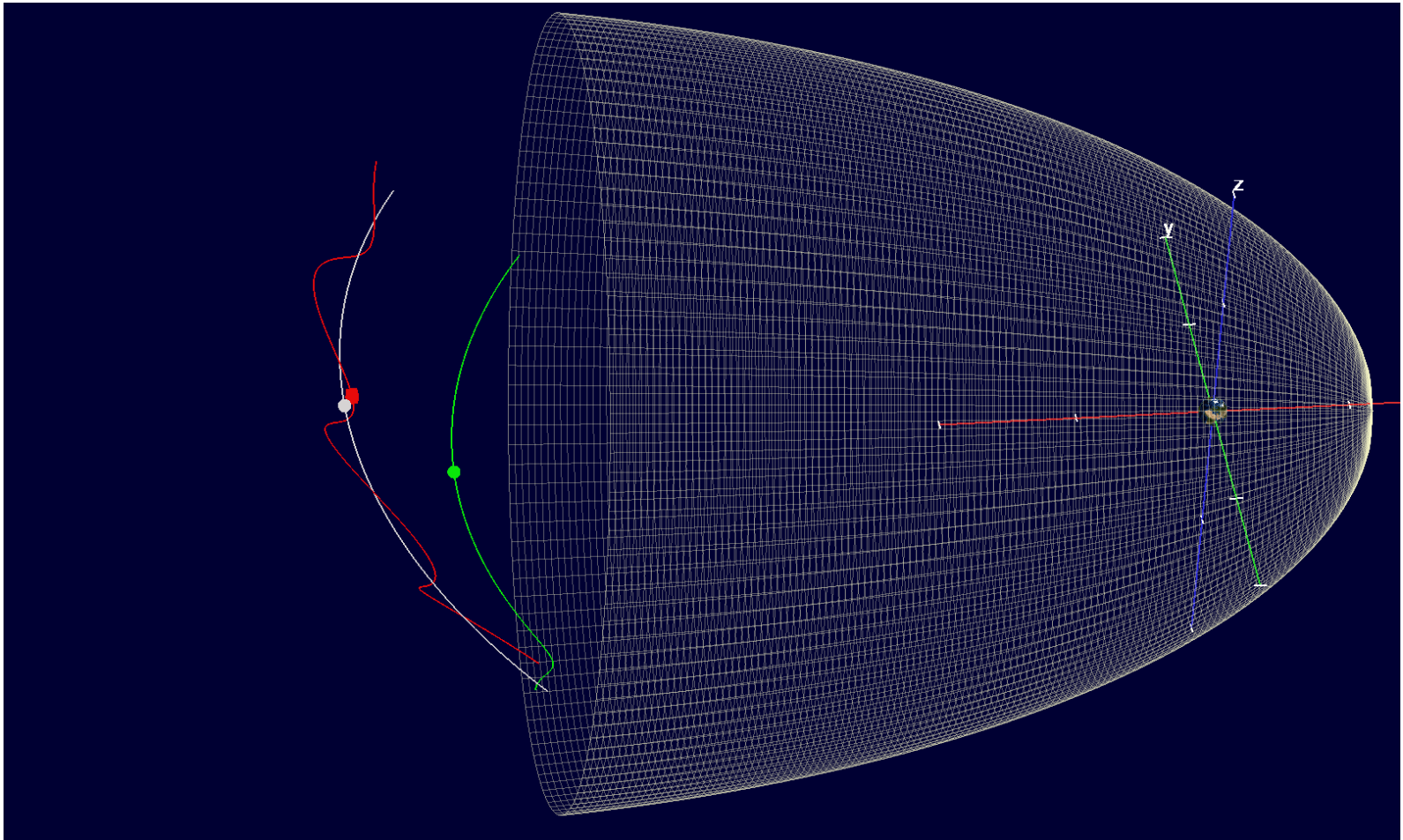


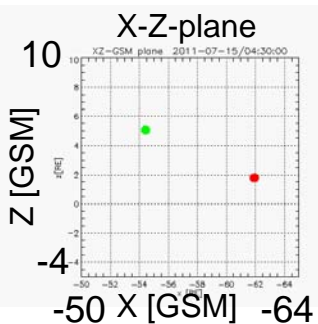
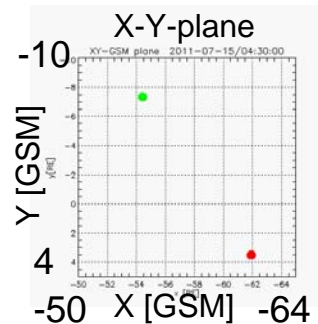
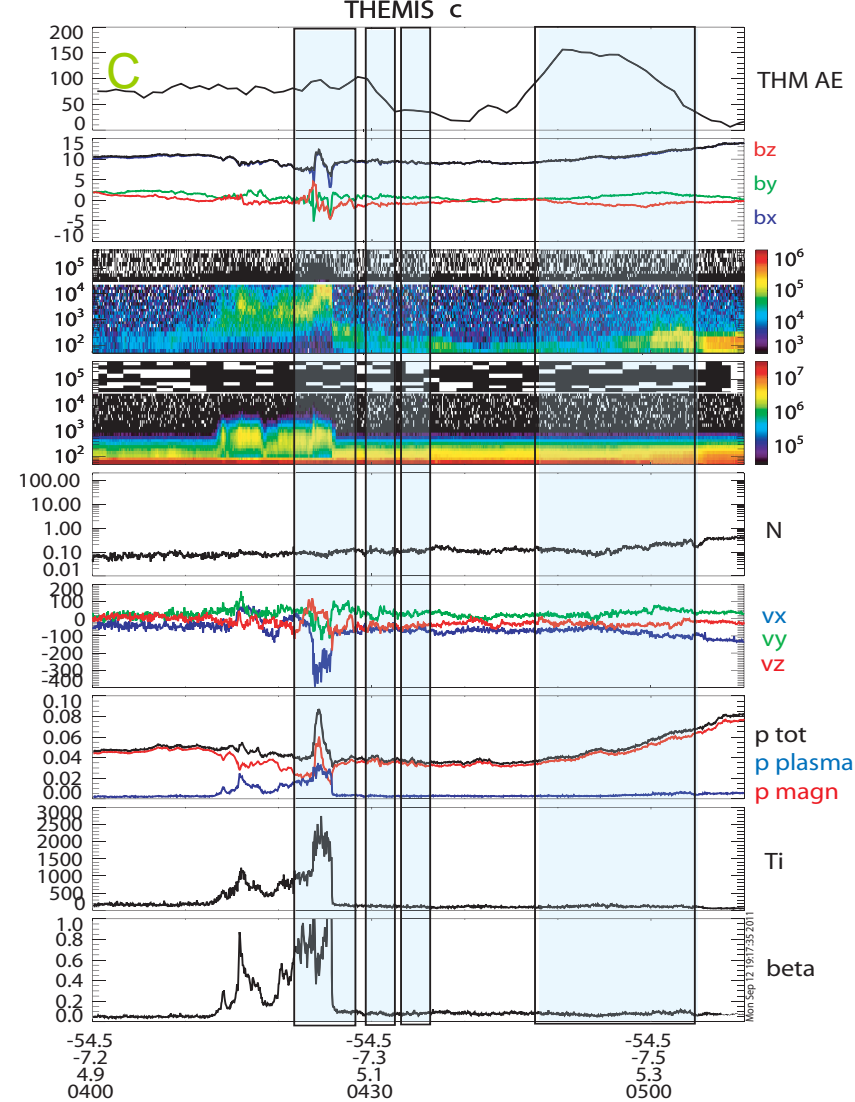
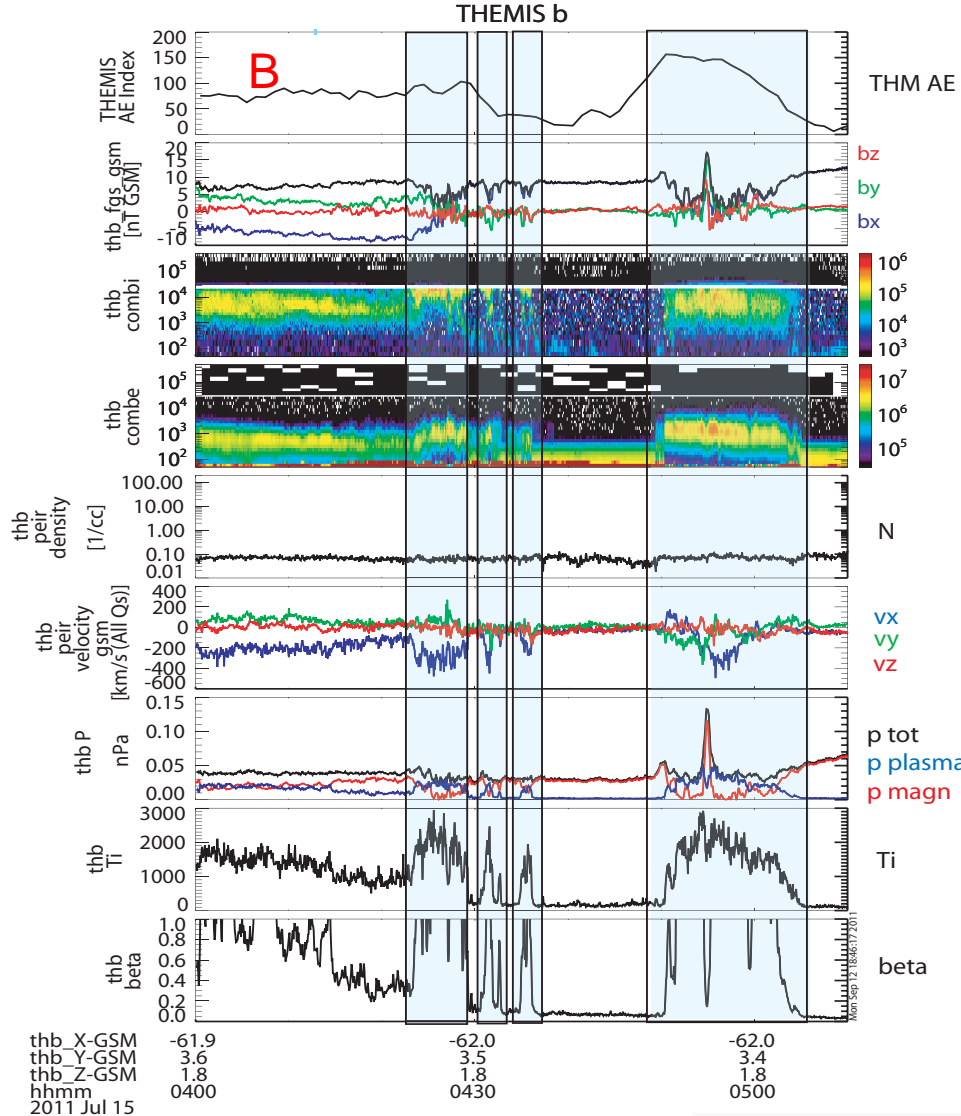
# On the size of magnetotail flux ropes at ~ 60 RE downtail

S. Kiehas, V. Angelopoulos,  
A. Runov, et al.

# ARTEMIS monthly tail crossings



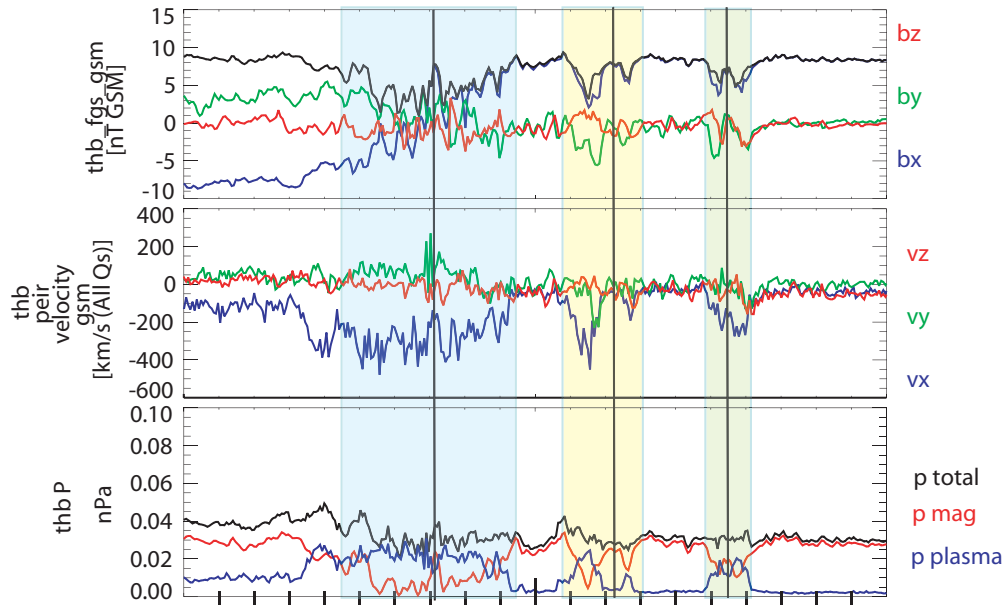
July 2011



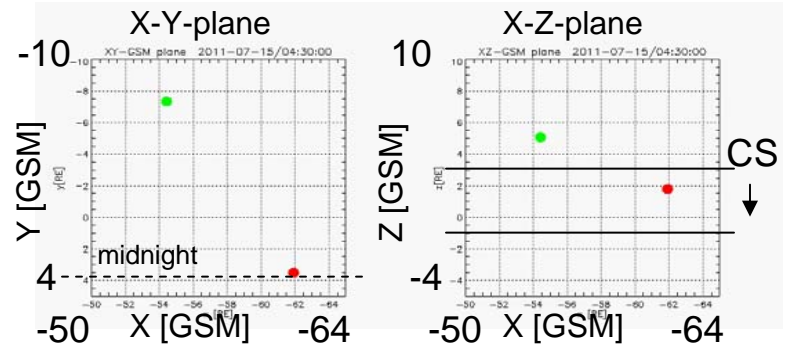
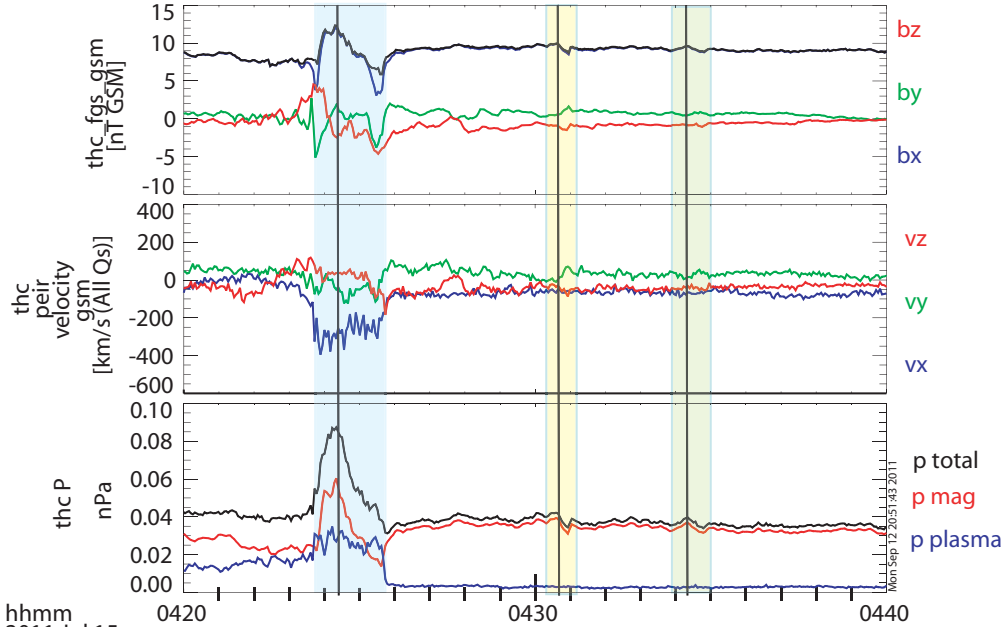
**Separation:**

- x ~ 7.5 RE
- y ~ 11.3 RE
- z ~ 1.7 RE

**B**



**C**

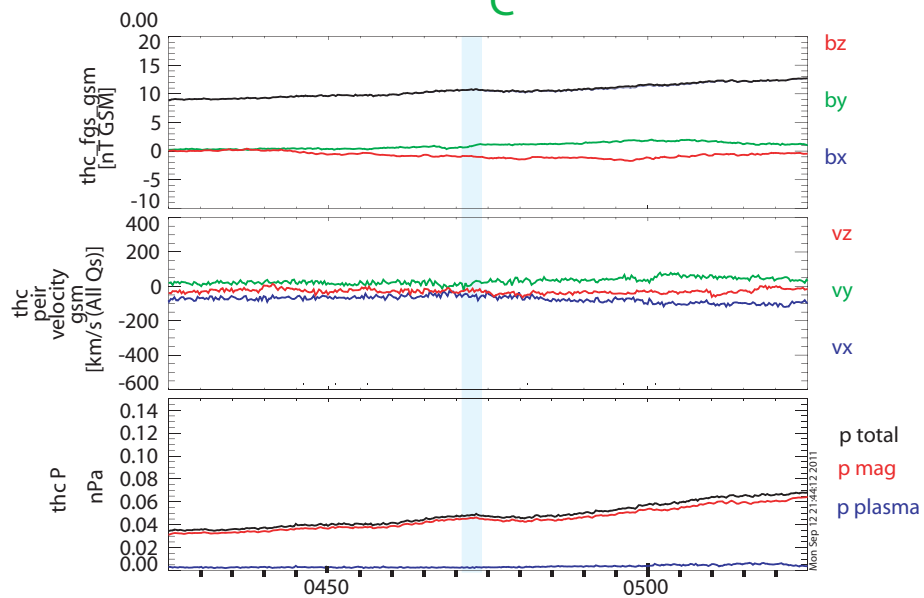
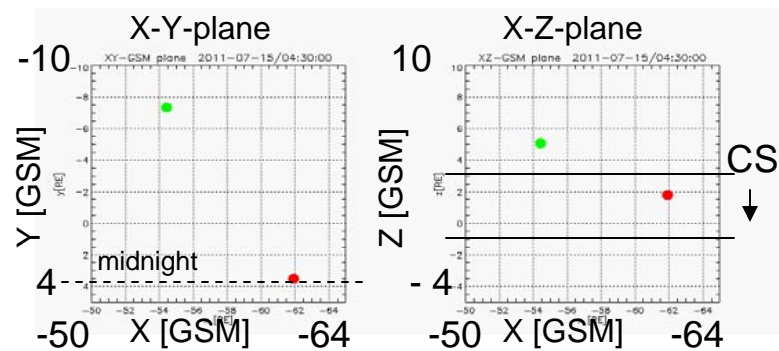
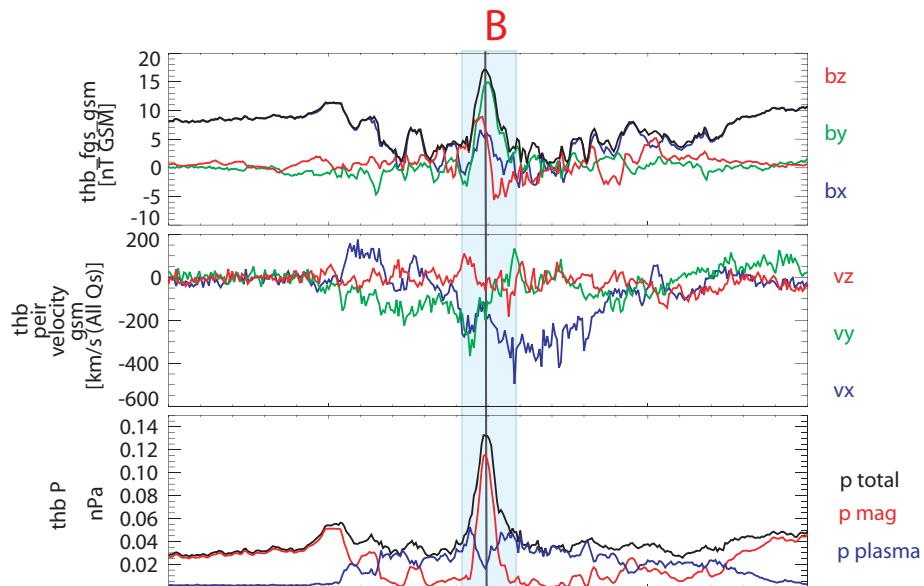


Separation:  
 x ~ 7.5 RE  
 y ~ 11.3 RE  
 z ~ 1.7 RE

Event 1:  
 ~ 2 min (C)  
 ~ 7.5 RE in x  
 ~ 280 km/s (?)

Event 2:  
 ~ 130 sec (B)  
 ~ 10 RE in x  
 ~ 480 km/s (timing)

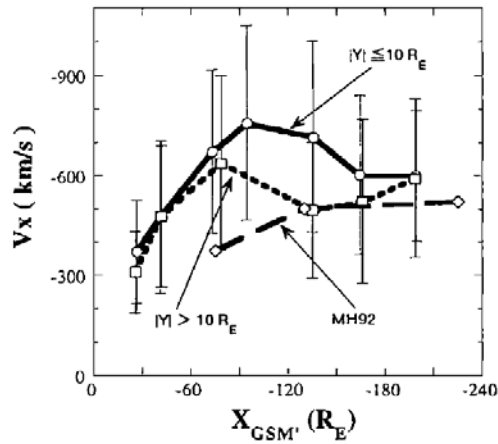
Event 3:  
 ~ 80 sec (B)  
 ~ 9 RE in x  
 ~ 710 km/s (timing)



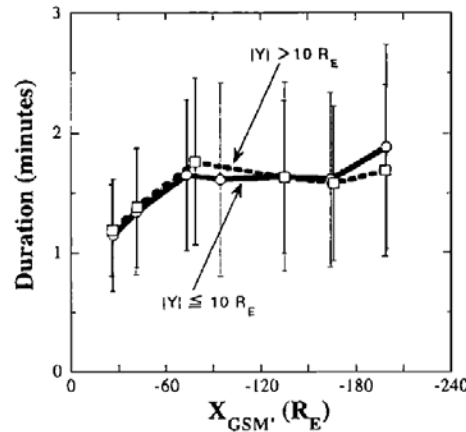
Separation:  
 $x \sim 7.5$  RE  
 $y \sim 11.3$  RE  
 $z \sim 1.7$  RE

Event 4:  
 $\sim 105$  sec (B)  
 $\sim 8-15$  RE in x  
 $\sim 950$  km/s

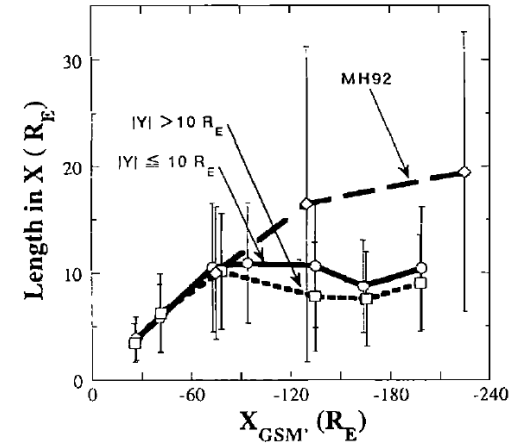
# Comparison with Ieda et al., 1997



-60 RE: 400~800 km/s

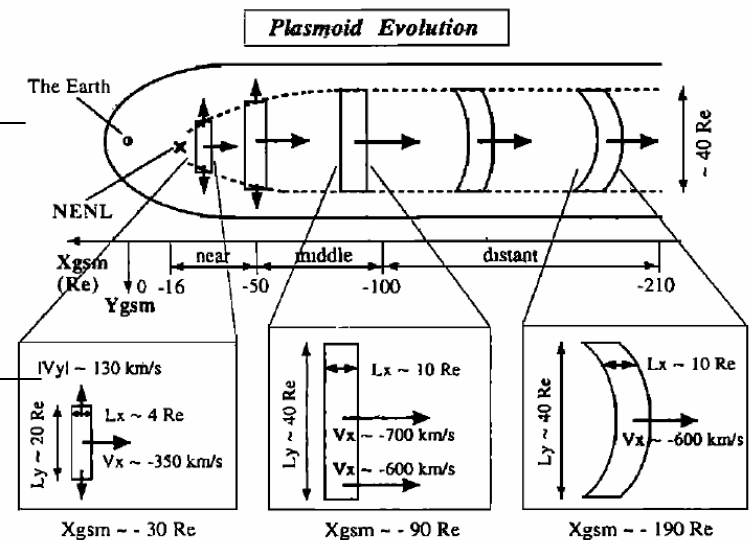


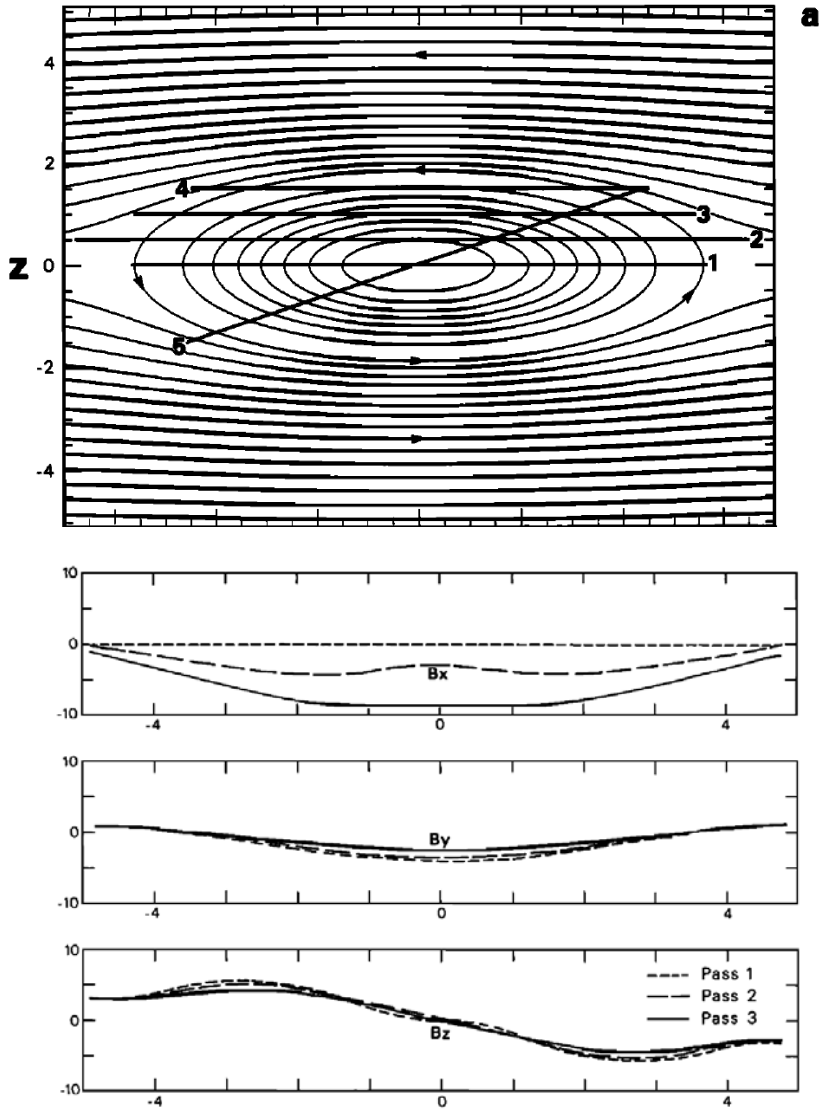
-60 RE: 1~2 min



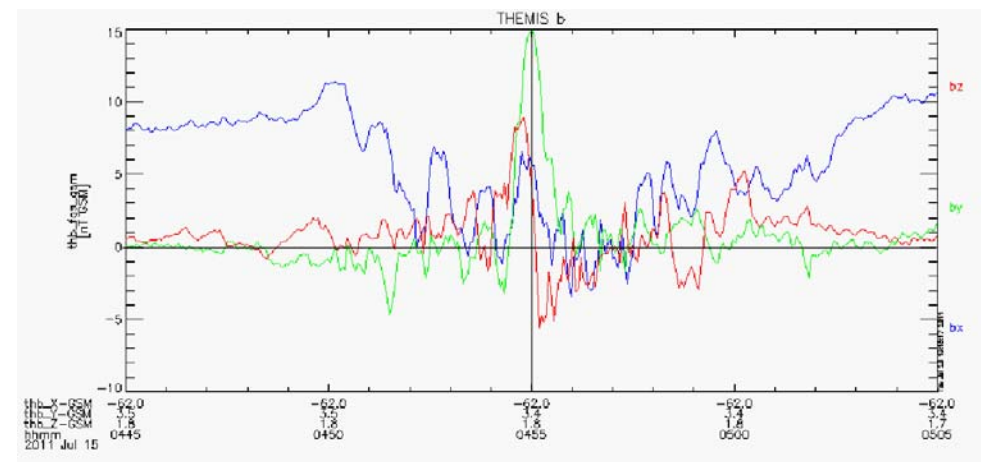
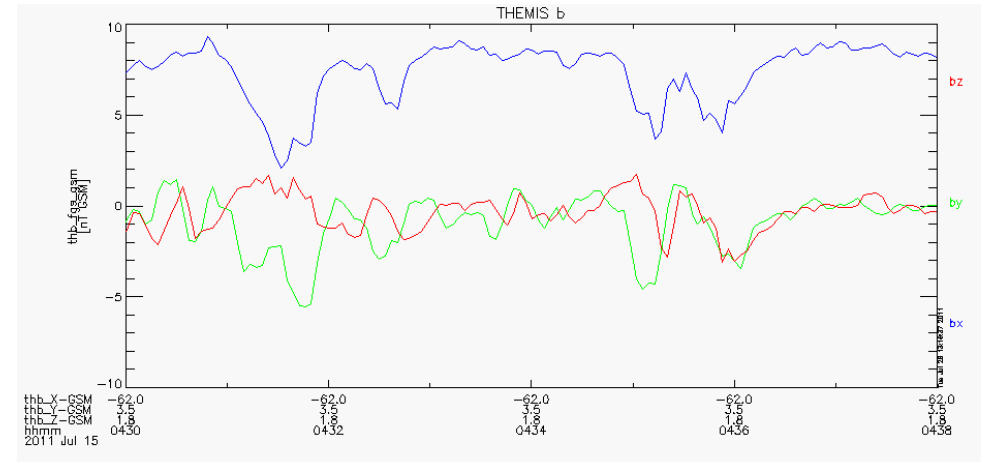
-60 RE: 4~15 RE

	$v_x$ (plasma/timing)	duration	length in x
Event 1	300/280 km/s	120 sec	7.5 RE
Event 2	400/480 km/s	130 sec	10 RE
Event 3	250/710 km/s	80 sec	9 RE
Event 4	500/950 km/s	105 sec	8-15 RE





**a**



From Moldwin and Hughes, 1991

# Summary

- Flux rope crossings on different levels
- Speed, duration and size in x consistent with statistical Geotail studies
- Extension in y significantly restricted -> consequences for amount of transported energy
- Statistical analysis necessary