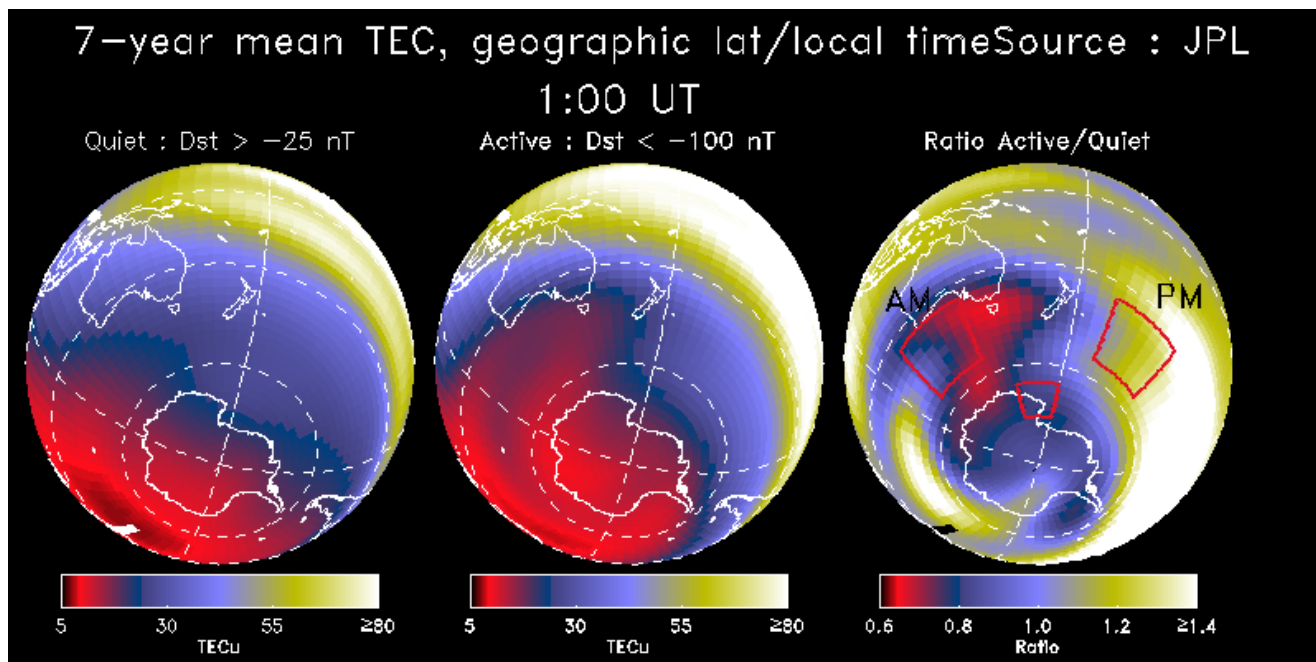


BATSRUS-GITM: TEC Enhancements Dependence on Storm UT Onset Time

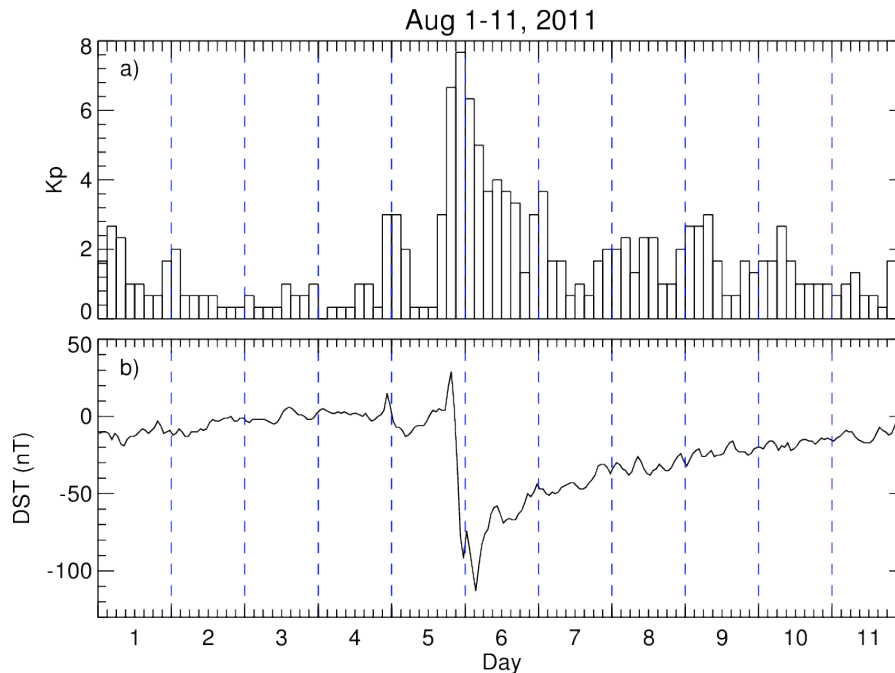
K. R. Greer, T. Immel & A. Ridley

Immel and Mannucci, JGR, 2013



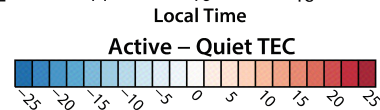
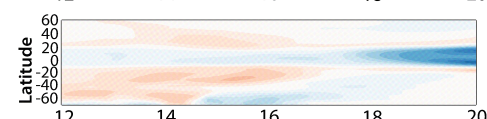
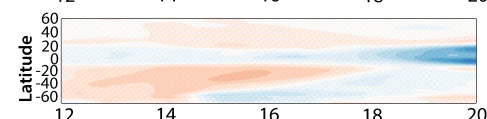
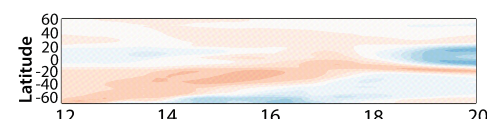
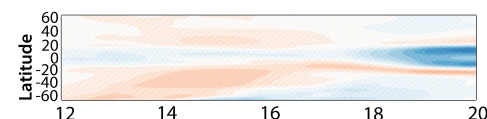
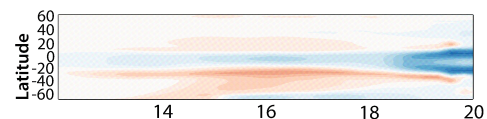
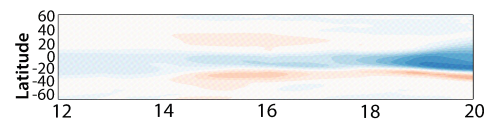
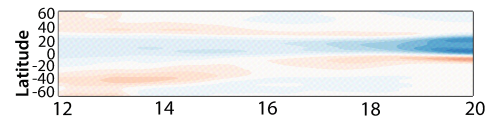
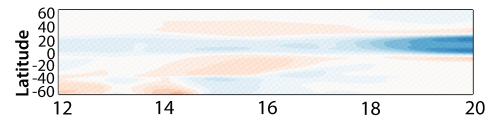
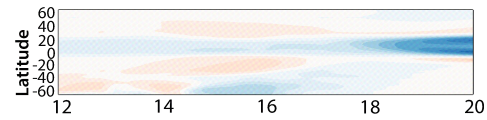
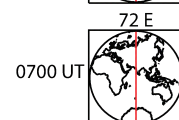
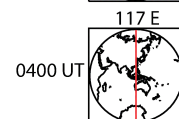
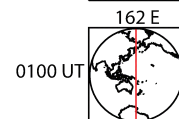
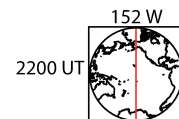
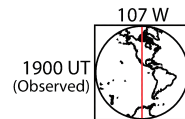
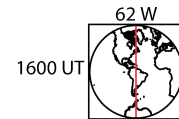
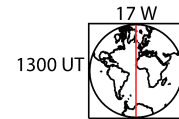
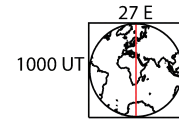
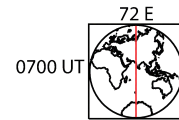
Use Model to Systematically Investigate Variations For Onset in Different Sectors

- Global Ionosphere-Thermosphere Model – GITM (Ridley et al.)
 - Potentials provided by SWMF-BATS-R-US
- Case study of August 2011 Storm
 - Onset 5 August 19:06 UT
 - Min Dst = -115 nT
- Modeling Experiment
 - Storm onset at -12, -9, -6, -3, 0, +3, +6, +9, +12 hrs from observed



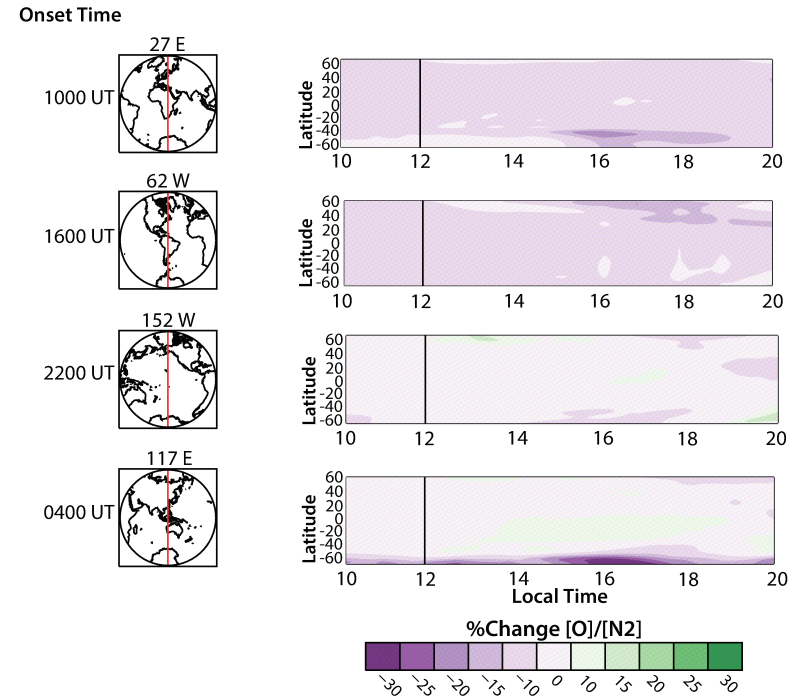
BATS-R-US GITM Results DO Show UT Onset Dependence

Onset Time



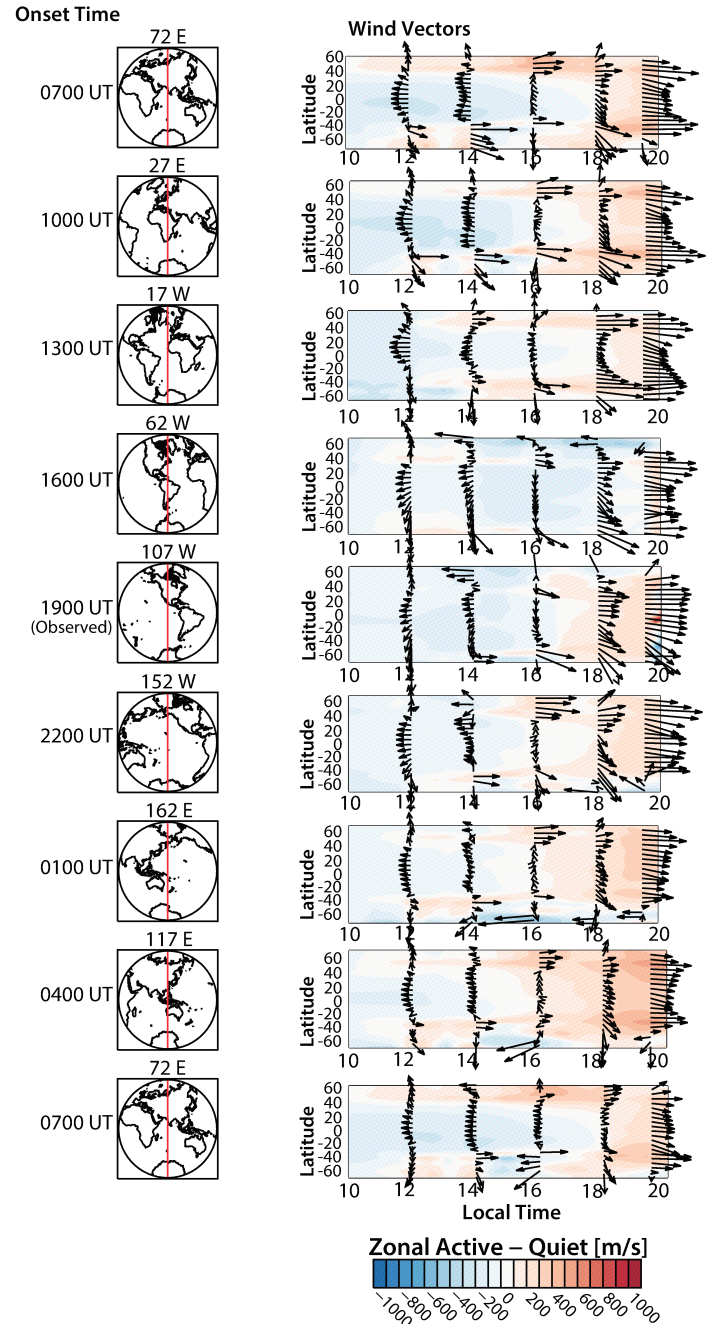
What is driving this?

- $[O]/[N_2]$ variations?



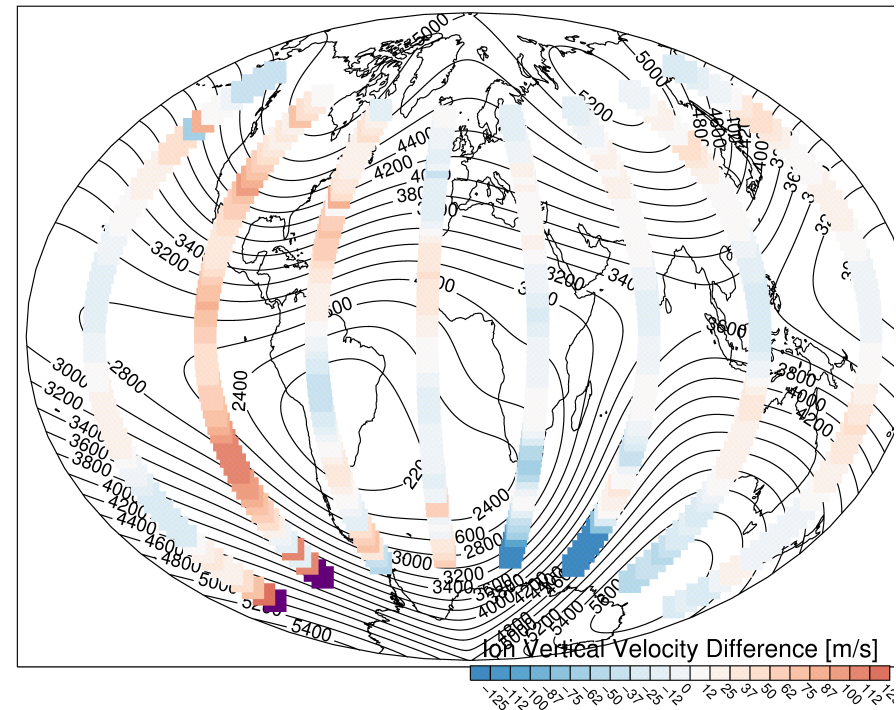
What is driving this?

- [O]/[N₂] variations?
- Neutral Winds Variations?



What is driving this?

- [O]/[N₂] variations?
- Neutral Winds Variations?
- Magnetic Field Line Configuration?



What is driving this?

- [O]/[N₂] variations?
- Neutral Winds Variations?
- Magnetic Field Line Configuration?
- Other?
- Some Combination?