

# Short-Term Longitudinal Variations

- On shorter timescales ( $\sim 50$  hours) torus composition, electron temperature and density show significant variation with System III longitude
- $S^+$  and  $S^{3+}$  show the largest variation and are anti-correlated
- Fit torus parameters within a sliding 50-hour window with a generalized cosine function
  - Allow phase, amplitude, and constant offset to vary
  - Fix period at 9.925 hours (System III)
- Fit is insensitive to size of sliding window