

- By changing  $F_{e\text{ hot}}$  from 0.21% to 0.25% our chemistry model reproduces observed longitudinal variations in plasma composition
- Amplitude of longitude variation modulated with  $\sim 29$  day period
  - Beat between System III and plasma subcorotation = 29.6 days

## The Big Picture:

- Imagine an asymmetry in torus composition
  - One side has slightly fewer hot electrons  $\rightarrow$  higher S II, lower S IV
  - Other side has slightly more hot electrons  $\rightarrow$  lower S II, higher S IV
- The plasma subcorotates
- When the region of fewer hot electrons reaches  $\lambda_{\text{III}}=200^\circ$  the asymmetry is  $\sim 3x$  greater than when that region it is at  $\lambda_{\text{III}}=20^\circ$ .