

System III Modulation of Amplitude

- Color coding represents the System III phase (i.e. location of peak mixing ratio) of the azimuthal variation
- Peaks in S^+ amplitude separated by ~ 29 days
 - The beat period between System III and the derived plasma subcorotation period is 29.6 days
- Amplitude of azimuthal variations is greatest when the phase of S^+ is near $\lambda_{\text{III}}=210^\circ$ and S^{3+} is near $\lambda_{\text{III}}=30^\circ$
 - This may explain why ground-based observations of S^+ see strong azimuthal variations with S^+ peaking around $\lambda_{\text{III}}=200^\circ$
- Azimuthal variations in ion composition are enhanced when they drift into the right System III longitude sector