Torus Chemistry Model

- Described in Delamere and Bagenal [2003]
- Five model parameters: $\tau_{transport}$ rate; neutral source rate, S; $O/S_{neutral\ ratio}$; F_{hot} and T_{hot}
- Model includes: ionization, charge exchange, recombination, radiative cooling, ion-electron coupling and electron-electron coupling
- Initial model conditions: $T_{e\ hot}$= 40 eV; $F_{e\ hot}$= 0.3%; Source= ~0.5 ton/s O/S = ~1.7; τ = 40days
- Increasing fraction of hot electrons to 0.5% causes change in S II and S IV densities in ~4 days, similar to that observed in plot to the left
- T_e increases slightly on timescale of a few hours