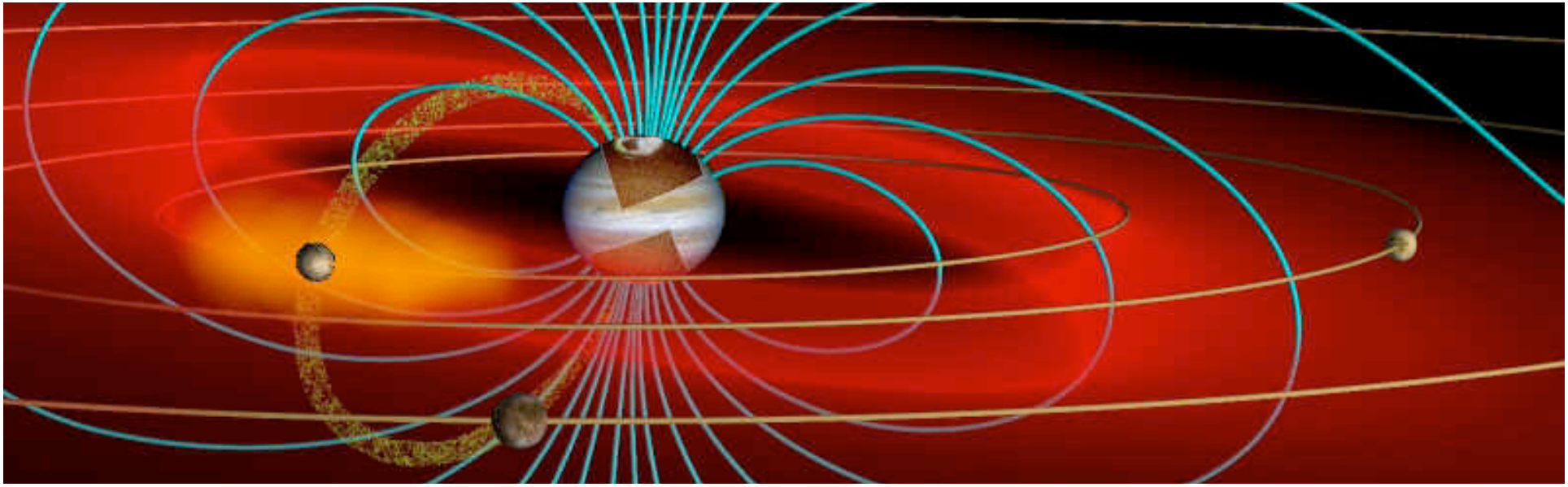


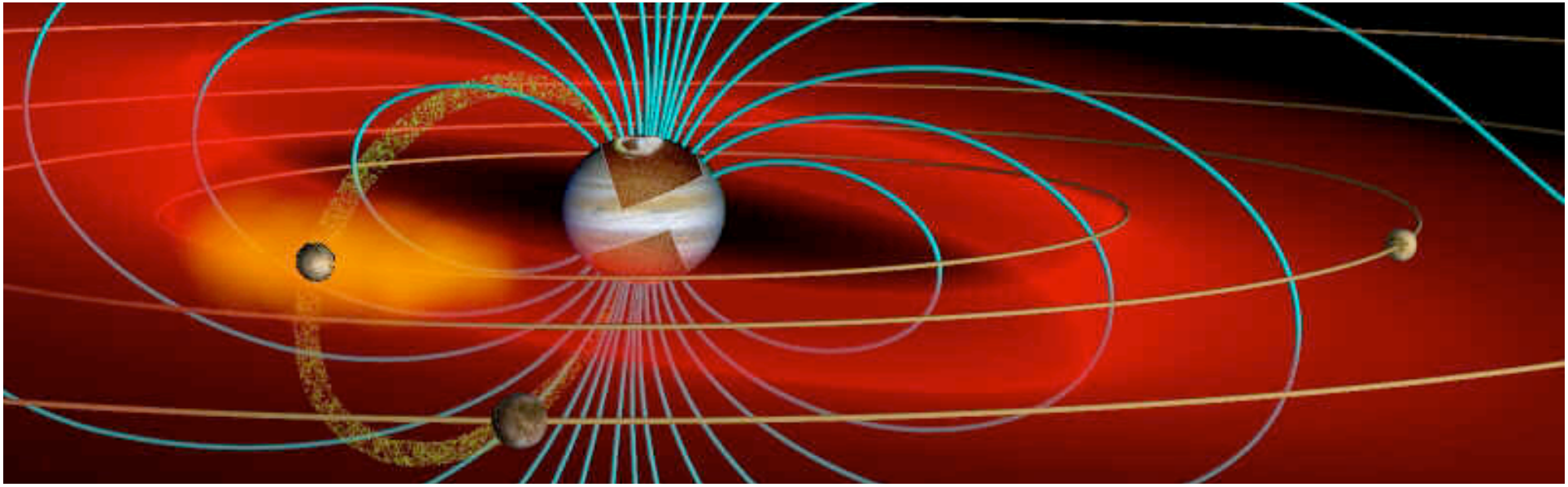
Io's Influences on the Jovian System
Io Workshop, Boulder, 8 June 2005

Nick Schneider

Laboratory for Atmospheric & Space Physics

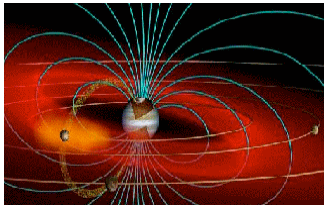
University of Colorado

nick.schneider@lasp.colorado.edu



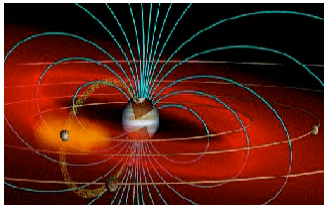
Io's Influences on the Jovian System

- Escaping material supplies neutral clouds, plasma torus & dust streams
- Conducting ionosphere electrically connects Jupiter & Io
- Mass distends magnetosphere
- Iogenic particles cause aurora on Jupiter
- Iogenic material implanted on Europa's trailing side
- Escaping ions & neutrals permeate solar system



Questions for Workshop Attendees

- What process(es) maintain the atmosphere?
  - What other ingredients are expected?
- How does volcanism vary the atmosphere?(or why else would escape rates change?)
  - Supply to torus appears to change in amount and composition on timescales of months
  - IR flux appears to correlate with sodium escape (Mendillo 2004)
- How is dust ejected from Io?
- Is there evidence for surface modification by the magnetosphere?
- How can observations of the larger system aid Io volcanology?



The Jupiter-Io System: The Big Picture

- *The Jupiter-Io system is a complex interconnected system...*

- …although the phenomena shown here have been well studied individually, the cause- and-effect relationships between them have not been established.