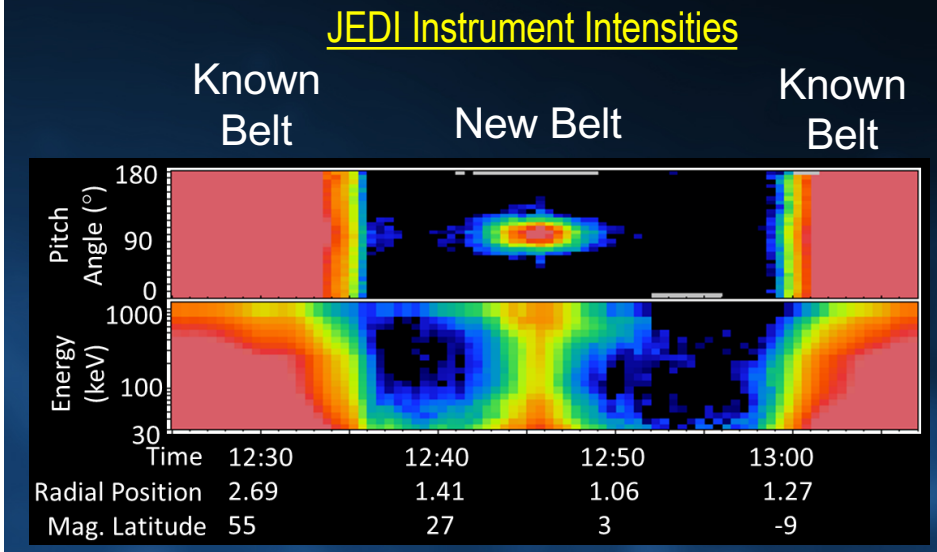
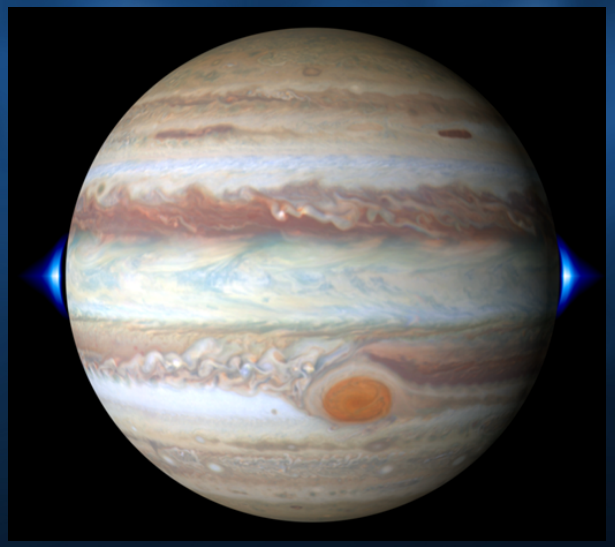
Juno discovers new heavy ion radiation belt very close to Jupiter





Juno has discovered a new radiation belt above Jupiter's atmosphere that is made up of sulfur, oxygen, and hydrogen ions.

The unusual Ion energy structure of the new belt (Top panel) shows these ions are derived from energetic neutral atoms that are produced far from Jupiter and then ionized when they hit Jupiter's atmosphere.

The newly discovered ionized particles are unlike particles that were observed by the Galileo Probe 20 years ago.

Radiation belts around strongly magnetized planets like Jupiter pose a critical challenge to space missions.

Bottom panel: Jupiter with false-color cross-section of torus-shaped belt

Kollmann et al., 2017; GRL.