## Juno sees the first Energetic Neutral Atoms (ENAs) from lo's atmosphere





## Dols et al., 2012; 2024 "Standard Atmosphere"



## Juno JEDI ENA spectra versus interacting ion spectra



Directionality of JEDI-observed, >150 keV O+S ENA emissions from Io's nightside upper atmosphere.

Integrating Dols et al. "standard atmospheric" along JEDI lines-of-sight yield ENA / Ion ratios of 11% to 13%.

Observed ENA / Ion ratios are estimated to be 4% to 7%

<u>Results</u>: Nightside upper atmosphere may be a factor of 2 weaker than local-timesymmetric model suggests