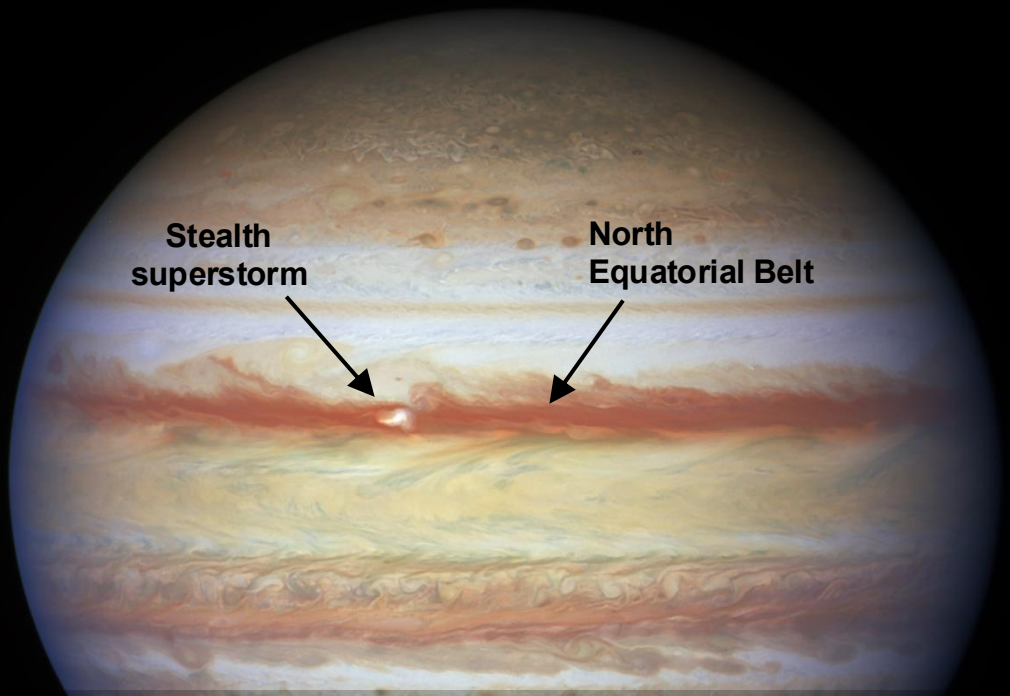
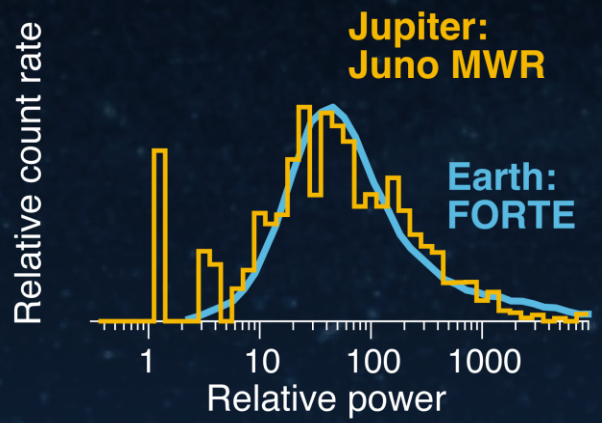
Juno and Earth-based observers explore Jupiter's "Stealth Superstorms"



- Earth-based observers working with Juno discovered isolated **stealth superstorms:**
  - reoccurring at the same place on Jupiter over many months like a typical superstorm
  - stealthy because of their modest cloud heights and their intermittent activity

Hubble image of Jupiter during Juno's perijove 44, August 2022

- Juno's high sensitivity revealed a wide range of pulse strength
- Average power of stealth superstorm lightning is likely to be 1-100x the typical power of Earth's lightning
- Results reinforce Juno's previous discovery of Earth-strength shallow lightning (Becker et al. 2020)



Histogram of the Jupiter pulse power shows an Earth-like shape (with rise and fall), suggesting that Juno measured typical lightning (not just outliers)

(Wong, Kolmašová, Oyafuso et al. (2026) *AGU Advances*. https://doi.org/10.1029/2025AV002083)